63rd ILA CONFERENCE
PROCEEDINGS

International Conference on Sustainable Development of Library and Information Science Profession

Chief Editor
Dr. D.V. Singh

Editors

Dr. Pardeep Rai,
Dr. Dharam Kumar,
Dr. N.S. Shokeen,
Dr. O.N. Chaubey,
Dr . M.P. Singh

Organised by

Babasaheb Bhimrao Ambedkar University, Lucknow, U.P.
and
Indian Library Association, Delhi
2017



Dr. D V Singh is presently working as University Librarian. Prior to joining University of Delhi He was the President of Indian Library Association (ILA) (2010-2013), He has published 19 research papers on various subjects relating to digitisation, automation, IT and multimedia application, management and transformational leadership in libraries. He has translated IFLA Public Library Guidelines. He completed his Ph. D on Transformational Leadership and Change Management. He has visited England, France, Germany, Italy, Switzerland and, SriLanka, Bangladesh, Thailand, Nepal, Bhutan, Maldeu, Indonesia and studied nineteen libraries in U K such as Oxford, LSE etc.



Dr. Pardeep Rai is working as Librarian at Maitreyi College (University of Delhi, New Delhi. He has a Ph.D in "Use of Multi-Media Resources by the LIS Distance Learners of IGNOU. He holds M.l.L.Sc and M.Phil. Degrees from University of Delhi. His areas of specialization are Library Computerization and Eresources. He was awarded ILA Promoters award in 2009. He is life member of Indian Library Association, IASLIC, Manlibnet, ASIALA and Delhi Library association. He also served as Vice President (Zone 4) of IASLIC. Presently he is General Secretary of ILA and Executive committee member of ASIALA.



Dr. Dharam Kumar presently working as Librarian in Aryabhatta College formerly Ramlal Anand college (Evening), University of Delhi, obtained his Ph. D in LIS from University of Delhi. He has contributed many research articles in the peer reviewed journals of International repute currently he is Public Relation Officer of Indian Library Association.

E-mail: dharamrla@gmail.com



Dr. N.S. Shokeen is Ex. Head of the Department of Library & Information Science, KalpanaChawla Government Polytechnic for Women, Ambala City (Haryana). He is an academician of repute, having more than 30 years of teaching experience. He has authored six books and edited five conference volumes. He was one of the resource persons of Indian team to Royal Institute of Bhutan during November, 2006 for imparting training in Library & Information Science He is member of twelve Library Associations including ILA, IASLIC, HLA. At present he is Secretary of ILA.



Dr. O.N Chaubey is presently working as Chief librarian Pravasi Bharatiya Kendra Ministry of External Affairs, New Delhi formerly he was working with Indira Gandhi National Centre for the Arts, New Delhi as a Corrdinator of 'Digital Preservation of cultural Digital Data' Project of C-DAC, Pune. Prior to this he was on deputation of 3 years with Election Commission of India, New Delhi. He has attended various National and International Conferences and presented 23 Papers. He has over 24 years of Professional Experience in the Documentation, Information Management using ICT & modern Library administration and management. He has also edited 5 publications. Presently he is Senior Vice- President of India Library Association.



Dr. M.P. Singh is presently working as Head in the Department of Library and Information Science at Babasaheb Bhimrao Ambedkar University (BBAU), (A Central University) Lucknow. Dr. Singh obtains Master degree in Library and Information Science from University of Delhi and did PhD in Library and Information Science from Bundelkhand University, Jhansi. Started his career as Librarian in ITI, Delhi he has about 17 years of experience in Library Profession and presently involved in teaching and research. Eight PhD Scholars has been successfully completed and thirty Nine MPhil scholars have successfully done their dissertation work under him supervision. He is presently supervising six research scholars of PhD. He has written 03 books and has more than two dozen of papers both in National and International conferences. He own to his credit of organizing some National Conferences, Seminars and Workshops. He has also attended a number of National and International Conferences He has been on member of editorial board of someLibrary and Information Science Journals. He is also a Life member of ILA, IATLIC, IASLIC, SALIS and SLA-Asian Chapter. Dr. Singh has visited Switzerland, France, Germany, Brussels, Hong Kong, Philippines and the Netherlands etc.

Sustainable Development of Library and Information Science Profession

(Proceedings)

63rd ILA Conference

Organised by
Babasaheb Bhimrao Ambedkar University,
Lucknow
and
Indian Library Association,
New Delhi
November 23-25, 2017

Chief Editor
Dr. D.V. Singh

Editors
Dr. Pardeep Rai,
Dr. Dharam Kumar,
Dr. N.S. Shokeen,
Dr. O.N. Chaubey,
Dr. M.P. Singh

Indian Library Association
A/40-41,FlatNo.201, Ansal Building
Dr. Mukherjee Nagar, Delhi–110009
2017

Editorial Advisory Board

Chairperson

Prof. Shabahat Husain

President, Indian Library Association Govt. of India nominee on;
(i) Governing body of National Museum Allahabad, (ii) Khuda Baksh Oriental Public Library.
(iii) Member of University Court Allahabad Univ.
Ex-Dean, Faculty of Social Sciences, AMU, Ex-University Librarian, AMU

Members

Prof. Preeti Mahajan,
DLIS, Panjab University,
Chandigarh

Dr. S. S. Dhaka,
Director, MEA Library, New Delhi

Prof. Jagtar Singh,
Ex. DLIS, Punjabi University,
Patiala, Punjab

Dr. Kautilaya Shukla,
Director, Sumandeep University,
Vadodara

Prof. M. Kognuramath,
Dean, School of Library and Information Science,
Central University of Gujarat, Gandhi Nagar-
382029

Prof. B. D. Kumbar,
DLIS, Karnataka University, Dharwar

Prof B Ramesha,
Dept DLIS, Bangalore University, Bangalore

Dr. Ashu Shokeen
DLIS & Dean, Faculty of Arts and Languages,
Kurukshetra University, Kurukshetra

Dr. Rajkumar Bhakar,
Chief Librarian, Ananta Institute of Medical
Sciences, Udaipur

©Indian Library Association, Delhi, 2017.

All rights reserved. No part of this publication can be reproduced, stored or transmitted in any form, or by any means, electronic or mechanical, including photocopying, microfilming and recording or by any information storage and retrieval system, without the prior permission in writing of the publishers and the copyright owners.

The opinions expressed in the articles by the authors and contributors are their own and the Editorial Advisory Board, Chief Editor assumes no responsibility for the same.

ISBN: 978-81-934120-0-8

Price: India: ₹ 3500/-; Overseas: US$175 Printed at: Anand Sons, Delhi-92

Sustainable Development of Library and Information Science Profession

CONTENTS

S.NO.	CONTENT	PAGE NO.
Theme 1: LIS Education, Research and Training		
1.	Questioning The LIS Curriculum: Factors That Cannot Be Ignored *Deepthi, P. G. Tadasad*	2
2.	Dimensions of Research in Library and Information Science in India: A Historical Perspectives *Dinesh Kumar Tiwari*	12
3.	Role of Associations in Development of LIS Education *Mamta Amarpuri*	21
4.	Global Impact of Steel Research carried out at CSIR- National Metallurgical Laboratory during 1986-2015: A Citation Study *Paras Nath Mishra*	30
5.	Special Library Research Ethics *Dr. Ranajan Kumar, Mr. Keshav Raj, Mr. Roshan Kumar*	41
6.	Bibliometric Study on LIS Education in India *Mr. Mahendra Kumar, Prof. Sudhir Kumar*	45
7.	LIS Research Trends in Asia: A scientometric Study Based on Scopus *Vinod Kumar Gautam, Rishi Kumar*	63
8.	Research Dimensions on South China Sea *Dr. Rajesh Kumar Bhardwaj*	77
9.	Scientometric Analysis on War and Peace *Dr. Rajesh Kumar Bhardwaj, Dr. Pardeep Rai*	98
Theme 2: Leadership Ethics and Accountability in LIS		
10.	Competencies and Skills for Information Professionals An Outlook *Ajeemsha. s*	116

11.	Publishing: Ethics and Dilemma *Dr. Aarti Sharma, Mr.SanjeevVermani*	123
12.	Sustainable Development of Library and Information Science Profession *Dr. Ranjan Kumar, Dr. Kaushal Kishor Chaudhary, Dr. Sumangla Jha Lect.*	131
13.	Role of Library Science Professionals in Digital Environment *M. Ram, Dr. Sonu Kumar*	136
14.	Capacity Building Programm for Library Professional's of Gautam Buddha Central Library Babasaheb Bhimrao Ambedkar University, Lucknow: A Study *Nutan Gaud, Dr. M. P. Singh*	146
15.	Role of Librarians in Information and Technology Dominated 21St Century *Mr. Omkar Pandey*	155
16.	Library Services in the age of ICT: A survey of Private Medical Colleges of Uttar Pradesh. *Satish Kumar*	168
17.	Embedded Librarianship: Present and Future of Academic Libraries *Prof. Hemant Sharma, Somesh Vishwakarma*	177
18.	Consumption of Library as a Quintessential Resource in Teaching- Learning Process of English Language in India. *Vibha Tripathi*	189
19.	Best practices in the Promotion of Reading Habits among school children. *Vijayalaxmi. A. S, P G Tadasad*	194

Theme-3: Emerging Trends & Technologies in LIS

20.	Growing Cyber Crime In The Field Of Library And Information Science *Aishwarya Srivastava*	208

21. Impact Of Digital Awareness Among Research Scholars Of A.U. And AMU Central University: A Comparative Study — 215
Anuradha Kanoujiya

22. Usage of Whatsapp by The Students of the Department of Library & Information Science Kurukshetra University Kurukshetra — 222
Anil Kumar

23. Open Access scholarly communication in Indian Institutes of Technology — 234
Mohammad Nazim, Ashiya Ahmadi

24. Cloud Computing in Library Services: A Perspective — 251
Bhavana Sharma, Priyanka C. Bhatt

25. Digital Library Programme in India — 260
Brij Bhushan Mishra, Dileep Kumar Dubey, Umesh Kumar Gaur, Ajay Kumar Yadav

26. Cybercrime — 263
Km. Deeksha

27. Digital Libraries in Academia: Challenges and Changes — 268
Dr. Javed Khan

28. E-Journal Consortia in and Information literacy In Digital Era — 275
Dr. Yasmeen Zia, Seema Tehseen

29. Mobile Applications for libraries Sub Title: An Overview By — 279
Harpreet Kaur

30. Libraries and Mobile Technology — 286
Dr. Amit Mittal

31. Cloud Computing and its Applications to Libraries — 295
By Manish Garg

32. Library Services for Visually Impaired Persons: A Need Of Time — 308
Madhu Bharti, Mohit Gupta, Sheel Bhadra Yadav

33. Design, Development and Implementation of an IDR in an Academic Library: A case study — 315
Neha Jain, Ruchi Jain

34.	Use Of Internet By Students In Amar Shahid Chandrashekhar Azad Govt. Post Graduate College Niwari (M.P.): User Survey *Dr. Niranjan Singh, Ms Vineeta Jain*	330
35.	Cloud Computing: An Overview *Dr.Chandra Prakash Dubey, Shweta Dubey*	341
36.	A functional Approach to Digital Library in India *Dr Shashi Bala Mishra, Dr Purnima Pandey, Umesh Kumar Gaur*	350
37.	Re-Orientation of Digital Library Services with Mobile Devices: The Changing Landscape *B.P. Singh*	358
38.	RFID Technology Applications In Libraries *Praveen B Hulloli, Dr. Kiran P Savanur*	371
39.	Use of Mobile Apps & Devices by the Students and Research Scholars in the Department of Library and Information Science, University of Delhi *Ritu Rana*	377
40.	Understand Mooc For Future Libraries *Ruchi Srivastava*	393
41.	Librarian's Dilemma in Selection of Library Automation Software: Open Source ***vs.*** Proprietary Software *Dr. Mehtab Alam Ansari, Shahwar Fatima*	403
42.	Information Technology & People: A Bibliometric Study *Ms. Shreya Gupta, Dr. Shilpi Verma*	415
43.	Availability of Information Communication Technology Infrastructure in the Central Libraries of old Indian Institutes of Technology (IITs): A Study *Anjali Verma, Dr. Sharad Kumar Sonkar*	426
44.	Wireless Technology In Academic Libraries: A Case Study Of Bangalore University Library *Podili Anjaneyulu*	439
45.	Information Barrier And Constraints Faced By The Libraries In Application Of ICT And Computerization *Dr. Mange Ram*	448

Theme-4: Information Storage and Retrieval System

46.	Learning and Knowledge Building through Internet: - A study of Medical Students towards how they use internet for learning *Dr. Rajkumar Bhakar, Dr. Chanchal Shrivastav*	456
47.	Assessment of Information Literacy Skills among Law Students: A Case Study of Govt. Mizoram Law College, Aizawl, Mizoram *F. Chanchinmawia, Manoj Kumar Verma*	468
48.	Use of Digital Resources to share Knowledge & Information among the Library Users. *Dr. Pinki*	487
49.	A Study on Use of Electronic Resources by the Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India *Awadhesh Singh Gautam, Dr. Manoj Kumar Sinha*	495
50.	Marketing of Library and Information Services: Some Issues And Challenges *Ompal Singh, MS Shelly*	533
51.	Sanskrit Resources in United Kingdom and Challenges regarding their Access *Mohammad Ishaq Lone*	544
52.	Ranked List Of Cited Journals In History Doctoral Theses In Kurukshetra University, Kurukshetra During 1979-2012 *Suresh Kumar Kagra*	554
53.	Institutional Repositories *Rana Ritu and Singh Shashank Vardhan*	566
54.	Emerging trends of Research Support Services in Academic Libraries *Vibha Gupta, Dr. Babita Jaiswal*	578

55.	Introduction to College Libraries of Ukhrul District, Manipur *Augustine Zimik*	592
56.	Indian Statistical Institute Library- One of the Living Learning Libraries: Maintaining and Preserving Past For The Future- A Survey *Sabita Kundu*	603
57.	Quality Service Of State Central Public Library Arunachal Pradesh : A Case Study *Joram Tayam*	614
58.	Public Library and Community Information Service : A Study *Supriya Mallik, Dhritiman Bhar*	622
59.	Public Libraries of Lucknow: A Boon for Academic Community *Dr. Subhash Chandra*	630
60.	Status of Library Services in Kendriya Vidyalaya and Delhi Public School at NTPC Dadri, UP, India: A Study By *Krishna Gopal*	637
61.	Giving Quality Services in a School Library *Dr Lopita Mukherjee, Sabita Kundu*	646
62.	Marketing Of Library Resources, Services And Products: A Case Study Of IIM Lucknow *Ms Simran Gupta, Dr Mange Ram*	660
63.	Preservation and Promotion of Library and Information Services in Social Era *Mohit Gupta, Vinay Pratap Tiwari, Chanchal Rai*	678
64.	Reading Habits of Newspaper among the Engineering Students and Academic Staff: A Survey of Jahangirabad Institute of Technology, Barabanki *Nazia Salauddin*	689
65.	Management Of Library And Information Science In Kendriya Vidyalayas *Rakesh Kumar Pandey*	699

66.	Awareness and Usage Pattern of Internet by the Students of Kurukshetra University Kurukshetra	710
	Mr. Yeshpal Singh	
67.	Library Guides, Signage and Digital Technology	724
	Dr. Dharam Kumar & Dr. Pardeep Rai	
68.	'Information Literacy' Need Of Pg Students: A Comparative Study Of Kurukshetra And Maharishi Dayanand University Of Haryana	731
	Naveen Mehla	

Theme-6: Collection Development and Resource Sharing

69.	Usage Of E-Shodhsindhu Consortium Among The Users Of Social Sciences: A Study Of Kurukshetra University, Kurukshetra	742
	Dr. Dharmesh Kumar	
70.	VuFind Open Source Software for Cross Collection Resources Discovery Service in Libraries.	757
	Surendra Kumar Pal	
71.	Collection Development Practices in the college libraries affiliated to Akkamahadevi Women's University, Vijayapura, Karnataka	767
	P. G. Tadasad, Deepthi	
72.	Digital Collections: Preservation and Problems	778
	Ram Roop	
73.	Library collection quality measurement through p-index	787
	Sandhya Dwivedi	
74.	Library Consortium: Resource Sharing in Digital Age	798
	Subhash Chandra, Bhoopendra Singh, Dr. M.P. Singh	
75.	Preservation and Conservation Practices of Manuscripts in Libraries at Varanasi: A Study	805
	Sujata Gupta, Shyambali Kumar	
76.	Document Delivery Services In Jawahar Lal Nehru Library Kurukshetra University, Kurukshetra	817
	Surender Kumar, Suresh Kumar Kagra	

77.	A National Biotechnology Consortium of 'Department of Biotechnology (DBT)' : A Historical Perspectives about the 'DeLCON Consortium'	823
	Dr. D. D. LAL	
78.	Collection Evaluation: A Study of PAU Library	838
	Yogita Sharma	
79.	Institutional Repository of Maitreyi College Library: A Study	851
	Dr. Pardeep Rai, Ms. Rajni Bhanot	
80.	Development of Digital Library: Need for Emerging Information Society	860
	Dr. O.N. Chaubey	

Theme-7: Librarianship and Social Networking

81.	Awareness and Use of Social Networking Tools by the Students of National Institute of Technology Kurukshetra : A case study	868
	Anil Sharma	
82.	Embedded Librarianship: Is the Right Time to Have It!	879
	Dr. Anil Kumar Dhiman, Prof. Hemant Sharma	
83.	The Use of Social Networking Sites (SNSs) among the Faculty Members: A study of Mizoram University, Aizawl, India	891
	Dr. Anil Kumar, Dr. M. P. Singh	
84.	Role of Public Libraries in e-governance and community services: an overview with reference to state of the Rajasthan	903
	Dr. Bhoop Singh	
85.	Impact of Social Media in College Libraries	914
	Bibhash Kumar Mishra, Dr. S. K. Pandey	
86.	The Role Of Social Networking Sites Collaboration Help In Research: An Exploratory Study Perception And Experiences Of Research Scholars Of Two Different State Universities Bundelkhand University And Jiwaji University: A Comparative Study	923
	Sandeep Kumar, Dr. Rekha Krishna, Pramod Madural	

87. Future of Libraries and Librarianship 936
Prof. (Dr.) Banwari Lal, M. Ram

88. Librarianship And Social Networking 947
Atar Singh

89. ICT Impact on Job Satisfaction Among Female Professionals Working In Central University Libraries Of North India: A Study 957
Dr. Madhu Bala

90. Use of Social Networking Sites by Undergraduate Engineering Students at Jahangirabad Institute of Technology, Barabanki, Uttar Pradesh, India 968
Nazia Salauddin

91. Assessing Information Literacy skills among Social Science PG student in Central University of Karnataka, Kalaburagi: A study 979
Dr. P.S. Kattimani

92. Social Networking Sites Its Application In Libraries 988
G. Rajeshwar Kumar

93. Role of Librarian in Digital Era 995
Ritu Dhiman, Reena Chauhan

94. Role Of Libraries For Sustainable Development Of Education 1005
Kusum Lata Malik

95. A Study on Usage and Awareness of Library Resources by the UG Students of Dau Kalyan Singh College of Agriculture and Research Station, Bhatapara, Chhattisgarh 1012
Uaday Kumar Watt, Dr. Brajesh Tiwari

Theme-8: IPR: Role of Libraries

96. How Librarians can help to Combat with Plagiarism 1020
Narender Kumar

97. Use of Information Sources and Services by the Library Users of Central University of Haryana, Mahendragarh: A Study 1028
Gaurav Srivastava, Deepak Kumar, Nandini Sharma

PREFACE

The 63rd International Conference of ILA is another notable event as the association has completed 83 years of its existence, since it was established in the year 1933. It is organizing 63rd International Conference on a very appropriate and exciting theme ***"Sustainable Development of Library and Information Science Profession".*** The selection of the subject is quite enriching which will leave indelible mark in the field of Library science. It is so important that there are continual deliberations going around the world on this very timely aspect that envisages what the future of the libraries would be, from its contents, from the stand point of organization and the tools and techniques of providing access to varieties of knowledge resources. The ILA invited papers on below enlisted sub-themes and received an overwhelming response from the LIS professionals across the country. More than 100 papers have been received and edited by a group of editors from different institutions. All the accepted papers are distributed under the following sub-themes for the purpose of presentation in the conference.

1. LIS Education, Research and Training
2. Leadership, Ethics and Accountability in LIS
3. Emerging Trends & Technologies in Libraries
4. Information Storage and Retrieval System
5. Management of Libraries and Information Centres
6. Collection Development and Resource Sharing
7. Librarianship and Social Networking
8. IPR: Role of Libraries.

The advent of embedded technologies has impacted on Library's technological applications e.g. the Content Development. The Integrated Library Management Systems are now integrating discovery facilities with the use of CMS and the Library Networking has gradually started removing the compartmentalization of different types of libraries. The new technology must find place in the leadership and we have to build the capabilities among our professionals to handle the new technologies effectively and efficiently. The digital age has infinite potentiality to import technologies and social media facilities into library services. The Library professional have been facing challenges of managing hybrid resources and equally there are *"here today and gone tomorrow" modes of services and products* that Libraries are required to entertain. The users' needs are also changing as more and more young users have gained technological knowledge and discovered enough capabilities that can offer them improved and point to point services. The library use patterns are also on the verge of new demands and horizons. Keeping this in mind, the conference chooses a topic that is contemplated over again and again whether the professionals are required to face new challenges under the sub-themes, Environment friendly library, Capacity building, Change Management and Leadership and others. The Libraries have been adopting technologies since their early advent and therefore technological advances which have been embedded in the

spirit of adoption to changes. These changes demand new services and to manage the new information and knowledge resources to suit the changing needs of the users. The impact of ICT on libraries and the growth of web and digital resources needs to augment the users with relevant skills and the demand for information literacy is growing from a very early stage. The quality of services needs some benchmarking and to adopt best practices. The papers included in this volume and the authors of these papers have addressed these issues and this International Conference has provided them a suitable platform for proposing these issues for discussion by the learned delegates.

The Organizers of this conference, especially the ILA and the Department of Library and Information Science and Gautam Buddha Central Library, Babasaheb Bhimrao Ambedkar University, Lucknow, need special mention for selecting this wonderful and thought provoking theme for 63rd Conference of the ILA. It is time to look forward on this auspicious occasion to see the transformation of library and information Science Profession in the digital age as its future has many challenges and equally opportunities to discover new professional avenues.

The Editorial Committee has spent their useful hours in reviewing/editing the papers and offering their support to organize the papers theme-wise. The Editors acknowledge their help and thank them profusely in this context. We thank all the authors for contributing to this 63rd International Conference of ILA and enriching the professional knowledge with their scholarly papers.

Thank you one and all

Place: Delhi
Date: 23th November, 2017.

Editors

Bibliometric Study on LIS Education in India

Mr. Mahendra Kumar and Prof. Sudhir Kumar

Research Scholar
Dean
Faculty of IT, School of Studies in Library
School of Studies in Library and Information Science, Vikram University,
Ujjain 456010, Madhya Pradesh, India
E-mail: mkarya79@gmail.com
E-mail: Sudhirkumarvuujjain@gmail.com

Abstract: The paper presents a historical perspective of Library and Information Science (LIS) education in India, and traces the growth and development of the subject. Emerging from the day of initiating, LIS education movement in the country by Sayyaji Rao Gaekwad, the then Maharaja of the erstwhile princely State of Baroda, the LIS education has grown by leaps and bounds to emerge as an important discipline in modern India. The dawn of the 21st century further provided ample opportunities as well as challenges to the LIS procedures and processes. In the wake of ever changing dynamic environment, the LIS education has to be overhauled in order to face the challenges and convert the weaknesses into strengths and threats into opportunities.

Keywords: LIS education-India, LIS education-History-India, Bibliometric Studies, Year wise distribution, Authorship Pattern, Author productivity, Gender-wise distribution.

1. Introduction

Library and Information Science (LIS) education in India will be completing 100 years in 2011. It is time for introspection and a need to know the present status of LIS and areas that need improvement.. There is a vast literature crediting Sayyaji Rao Gaekwad, the then Maharaja of the erstwhile princely State of Baroda, for initiating the LIS education movement in the country. American librarians, William Alanson Borden and Asa Don Dickinson were the first LIS teachers in India. John MacFarlane, an Englishman, who happened to be the first librarian of the Imperial Library (now National Library, Kolkota) also, shares the credit for training librarians in our country. In fact, MacFarlane's training programme is the first case of LIS education in India reported in literature. It took place between 1901 and 1906 in the Imperial Library when training programmes were organised for its staff. Later it was extended to librarians working in Calcutta as well as in other states. It is believed that there was an existence of some training in library routines for the Staff of University libraries prior to that also[1].

Bibliometrics is composed of two distinct parts i.e. biblio and metrics from Greek words. The prefix biblio meaning 'books' and 'metrickos' means measurement. So bibliometrics connotes the science of measurement pertaining to books or documents. It is a quantitative study of various aspects of literature on topics and is used to identify the patterns of publication, authorship, citations and or secondary journal coverage with the objective of getting on insight into the dynamics of the growth of knowledge in the areas under consideration. Bibliometrics is relatively a subject of recent origin. It is being vigorously persuaded and with the result, it has been found that now a day many of all the articles published in Library and Information Science periodicals are on bibliometrics and its related topics. The basic units of bibliometrics are all facets of written communications, such as primary and secondary sources, articles and abstracts, bibliographies, books, monographs and other media of communications such as web etc. It is quantitative measurement without any qualitative evaluation.

2. Definitions:

1. Alan Pritcard (1969) definition is "The application of mathematics and statistical methods to book and other media of communications"[12].

2. British Standards Institutions (1976) define it as "The use of documents patterns of publication in which mathematical and statistical methods have been applied"[13].

3. Period of Growth in Library & Information Science Education

- The decade of 1960s saw some very important events taking place affecting LIS education in the country. Ranganathan conceptualised the premier education and research institute, Documentation Research and Training Centre (DRTC), Bangalore under the auspices of Indian Statistical Institute in 1962 for imparting a specialised training programme in documentation. Another parallel institution, Indian National Scientific Documentation Centre (INSDOC), now named as National Institute of Science Communication and Information Resources (NISCAIR), was established under the aegis of Council of Scientific and Industrial Research (CSIR), Delhi, in 1957. It started a course in Associateship in Documentation in 1964. Prior to this, it organised short-term training programmes for librarians which it continues

to do as its objective of providing continuing education for LIS professionals. These are two premier institutions in the country providing specialised training in documentation and information and have been providing national input and support to the development of the profession in the country. They have updated their curriculum regularly keeping in tune with the changing time.

4. Need and Significance of the Study

One of the most significant aspects of the evolution of librarianship in the twentieth century has been the emergence of the library schools as a potent factor in shapping new philosophies and new attitudes in library profession.

The need for professionally trained personnel was recognised in early decades of the twentieth century. Library training programme were in existence at several places before independence in 1947. Consequent to this, library Science Education today, is a well recognised discipline for study of the University level. There are adequate facilities available in universities in India for the development of manpower in Library and Information Science Education. The University Grants Commission has done a lot in this respect. Many Commissions and committees have already given their recommendations for the development of Library and Information Science Education.

5. Statement of the Problem

Library profession in India at present is passing through a transmission period. It has more progress between 1947 and 1980 than during the last one hundred years. Especially after the establishment of the University Grants Commission, several national research organisation such as CSIR, ICMR, ICAR, BARC, INSDOC, DRTC, ICSSR, ICHR, NISSAT etc. and expansion of various ministeries, a large number of libraries of various types have come into being. In order to train personnel to manage these libraries, library education has also been expanded. Presently 90 universities are running library and information programmes at various levels. About four universities are running Library Information Science programme through correspondence.

Many researchers have been completed on various aspects of library and information science education but there is no complete research on all aspects of Library Information Science education. There is no uniformity in curriculum,

duration of period, admission requirements etc. Except some universities, the majority of universities do not have any uniformity in different aspects[11].

6. Objectives of the Study

The main objective is to make an analysis of literature on library and information science education published in India by Indian authors. The objective of this bibliometric study is to find out following indicators from the publications of Indian professionals in the field of Library Information Science Education.

1. To study the publications status of Indian literature on LIS educations.

2. To study the number of contribution by various authors and find out the applicability of Lotka's Law.

3. To examine the growth of LIS literature by applying various growth models, growth rate and doubling time.

4. To quantity the communication channel used by the LIS professionals.

5. To quantity the subject distributions of Indian contributes and to find out growth rate, doubling time co-relation co-efficient in various subjects.

6. To study the authorship pattern with reference to single and multiple authorship and find out mean authorship in research.

7. To give ranking to the prolific authors and find out their dominance factors.

8. To identify the core Indian Journals in the field of LIS education and apply Bradford's Law ad preparation of the Bradford bibliography.

7. Review of Related Literature

Review of literature describes in brief an account of what has been published in relation to the topic of the research, in chronological order, by different research scholars and scientists in several institutions and organizations. In this paper an attempt has been made to convey the reader the information documented, enlightening the merits and shortcomings, in relation to the topic of present investigation.

1. Vijayakumar (2011) Analysis of 616 articles published from Indian Journal of Biochemistry and Biophysics having 20283 citations during 2001-2010. The number of 29% articles received from those authors. The three authored

articles with 28.57% contributions. India contributed highest number of articles (76.35%) followed by China (6.73%).

2. **Jena (2012)** Analyses 9 volumes of Annual reviews of Nuclear and Particle Science from 1990 to 1998 were taken for the study. It has been constitutes 79.6% of citations are from journals followed by conference proceeding occupies with 5.58%. Multi-authored articles are 41.79%; USA contributed 69.75% citations followed by Netherlands.

Authorship Pattern

3. **Kumbar & Kumar (2011)** Analysed that total number of papers published in the Indian Journal of Genetics and Plant Breeding are 486 during 1998-2002. Maximum number of articles 128(26.34%) published in 2002 and the minimum number of articles published 77(15.84%) in 1999 and maximum number of articles are contributed by two authors 215(44.24%), followed by three authors 127(26.13%). Multiple authored papers (425) are predominant in the field of Genetics and Plant Breeding.

4. **Khoo (2011)** Analysis journal articles written by Asian authors from the library and information science abstracts (LISA) database to identify areas of strength in Asian LIS research. The results shows details about that bibliometrics, information retrieval, automatic text analysis, information and Web technologies, scholarly publications, education, and knowledge management to be the main subjects in these areas.

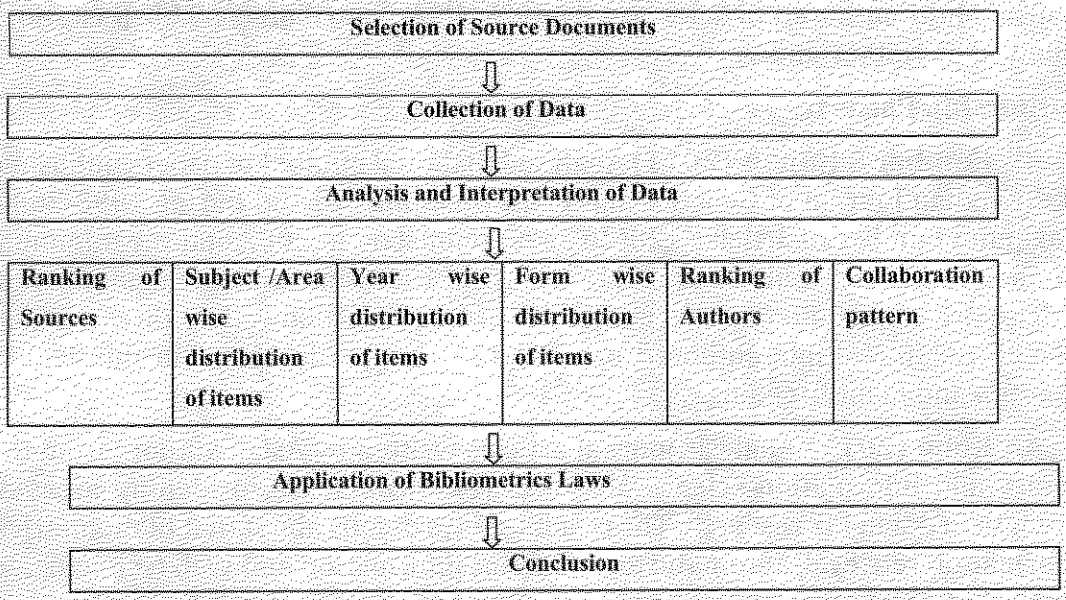
5. **Walia & Kaur (2012)** Analysis authorship data reported in this paper show that the number of women authors is less in comparison to male authors in the LIS field. The profession is attracting more men toady because of the great changes taking place in this field. Technological changes and the innovation taking place in LIS are changing the field into one of the coveted professions. The contribution to the field by LIS faculty as well as by LIS professionals, and students or research scholars shows that they all are concerned at the present time with issues that are affecting the profession and with the development of the discipline.

6. **Sudhir (2015)** Analyses authorship distribution in physics literature and to examine the validity of Lotka's law of scientific publication productivity. A list of journal articles on various aspects of physics research cited in the doctoral thesis of University of Kerala, Thiruvananthapuram, and South India was compiled for the study. Using "straight count" of authorship, a total of 1,665 personal authors were identified and 3,367 authors were identified by using "complete count".

K-S statistical test and Chi-square test were applied to verify the applicability of Lotka's law in the two approaches.

Research Methodology

The methodology adopted is outlined under:



Selection of Source Document

Relevant literature published in various books, journals, Conference proceedings and Seminar held in India to be consulted as most comprehensive and appropriate source of literature in the field of LIS education in India were collected as source document.

Collection of Data

The most important task was to select the documents from which the data has been collected on the subject "LIS education". It was hereby that about 2300 selected existing bibliographies /references have been consulted from Library and Information Science Abstract (LISA), Library Science Abstract, Library Literature, books, different Journals and Conference Proceedings also. The data was arranged on the Microsoft Excel sheet under different fields and analyse them from bibliometric study.

Data Analysis and Interpretation

Objective wise data are analyzed below given in different tabular forms with descriptive format as under:

1. To study the publications status of Indian literature on LIS educations.

2. To study the number of contribution by various authors and find out the applicability of Lotka's Law.

3. To examine the growth of LIS literature by applying various growth models, growth rate and doubling time.

4. To quantity the communication channel used by the LIS professionals.

5. To quantity the subject distributions of Indian contributes and to find out growth rate, doubling time co-relation co-efficient in various subjects.

6. To study the authorship pattern with reference to single and multiple authorship and find out mean authorship in research.

7. Bradford's Law and preparation of the Bradford bibliography.

Table No. 1: Details about year wise publication since the year 1948-1960

Yearwise Publication					
	Year	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	1948	2	.1	.1	.1
	1952	3	.1	.1	.2
	1953	2	.1	.1	.3
	1954	21	.9	.9	1.2
	1955	13	.6	.6	1.8
	1956	18	.8	.8	2.6
	1957	25	1.1	1.1	3.7
	1958	16	.7	.7	4.3
	1960	15	.7	.7	6.0

Figure No. 1: Details about year wise publication since the year 1948-1960

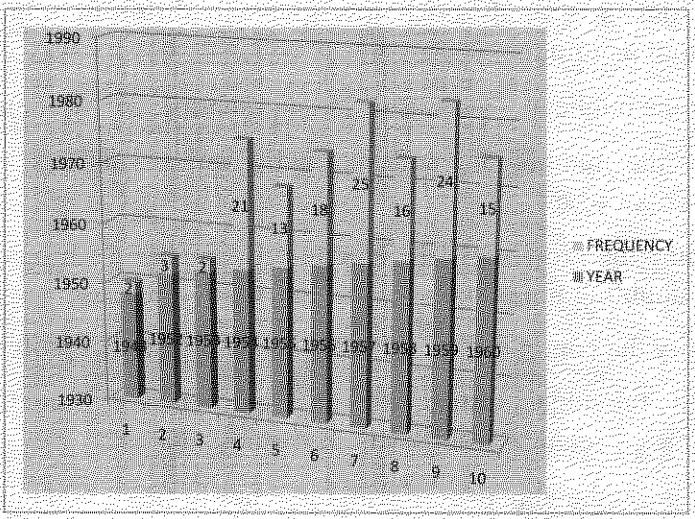


Table No. 1 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 1957 which is 1.1 and lowest in 1948. The same percentage is also with 1953 where as during last ten years with the slab of 1948 to 1960 the maximum second highest percentage of publications in 1959 which is 1.00 percentages out of all data captured for the research.

Table No. 2: Details about year wise publication since the year 1961-1970

Yearwise Publication					
Valid	**Year**	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
	1961	24	1.1	1.1	7.1
	1962	33	1.4	1.4	8.5
	1963	35	1.5	1.5	10.0
	1964	29	1.3	1.3	11.3
	1965	103	4.5	4.5	15.7
	1966	87	3.8	3.8	19.5
	1967	105	4.6	4.6	24.1
	1968	87	3.8	3.8	27.9
	1969	34	1.5	1.5	29.3
	1970	39	1.7	1.7	31.0

Figure No. 2: Details about year wise publication since the year 1961-1970

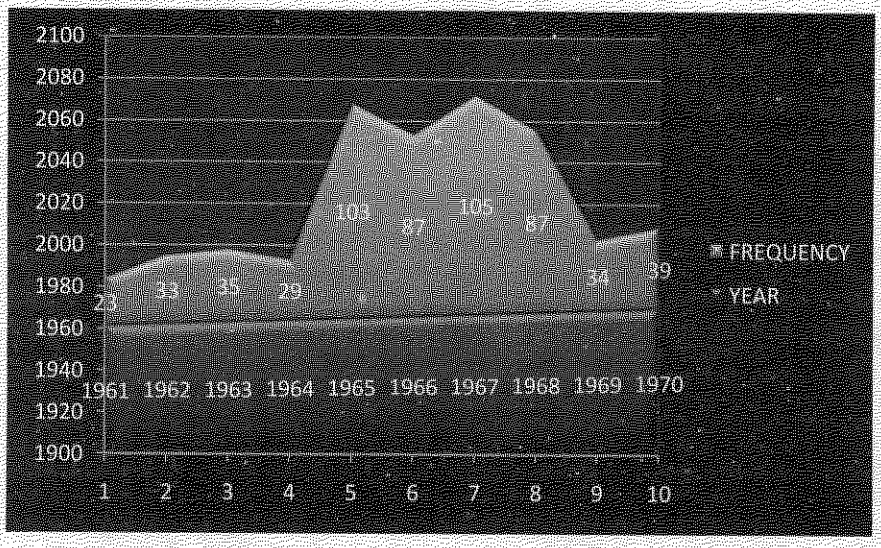


Table No.2 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 1967 which is 4.6 and lowest in 1961. The same percentage is also with 1962 where as during last ten years with the slab of 1961 to 1970 the maximum second highest percentage of publications in 1968 which is 3.8 percentages out of all data captured for the research.

Table No. 3: Details about year wise publication since the year 1971-1980

Yearwise Publication					
	Year	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Valid	1971	29	1.3	1.3	32.3
	1972	89	3.9	3.9	36.2
	1973	69	3.0	3.0	39.2
	1974	51	2.2	2.2	41.4
	1975	39	1.7	1.7	43.1
	1976	47	2.0	2.0	45.1
	1977	38	1.7	1.7	46.8
	1978	78	3.4	3.4	50.2
	1979	28	1.2	1.2	51.4
	1980	15	.7	.7	52.0

Figure No. 3: Details about year wise publication since the year 1971-1980

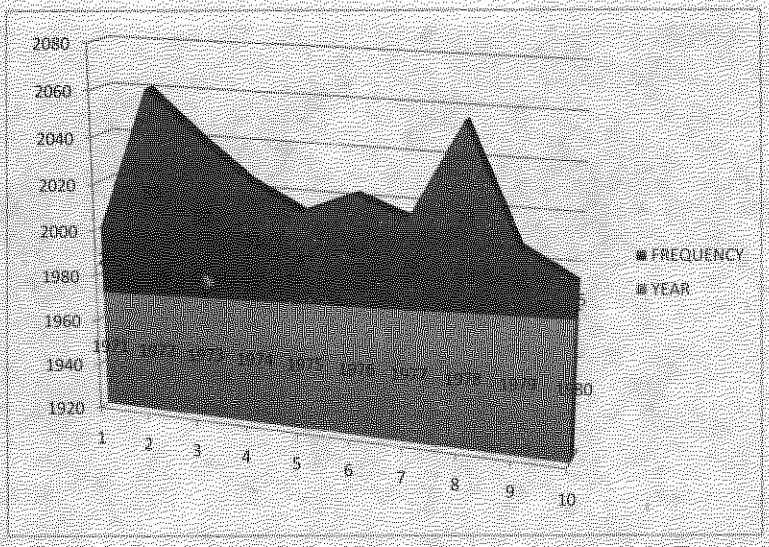


Table No. 3 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 1972 which is 3.9 and lowest in 1980 The same percentage with little variation is also with 1979 where as during last ten years with the slab of 1971 to 1980 the maximum second highest percentage of publications in 1973 which is 3.0 percentages out of all data captured for the research.

Table No. 4: Details about year wise publication since the year 1981-1990

Yearwise Publication					
	Year	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
Valid	1981	49	2.1	2.1	54.2
	1982	42	1.8	1.8	56.0
	1983	37	1.6	1.6	57.6
	1984	28	1.2	1.2	58.8
	1985	72	3.1	3.1	62.0
	1986	86	3.7	3.7	65.7
	1987	38	1.7	1.7	67.3
	1988	31	1.3	1.3	68.7
	1989	27	1.2	1.2	69.9
	1990	9	.4	.4	70.3

Figure No. 4: Details about year wise publication since the year 1981-1990

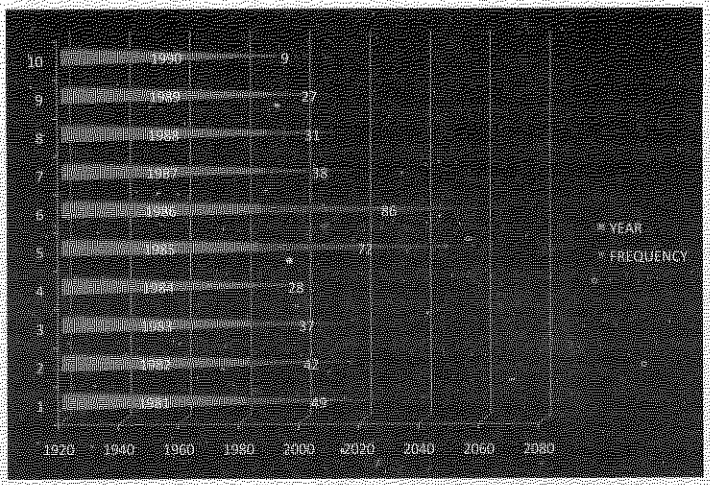


Table No. 4 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 1986 which is 3.7 and lowest in 1990. The percentage with little variation is also with 1989 where as during last ten years with the slab of 1981 to 1990 the maximum second highest percentage of publications in 1985 which is 3.1 percentages out of all data captured for the research.

Table No. 5: Details about year wise publication since the year 1991-2000

Yearwise Publication					
Valid	**Year**	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
	1991	119	5.2	5.2	75.4
	1992	105	4.6	4.6	80.0
	1993	22	1.0	1.0	81.0
	1994	21	.9	.9	81.9
	1995	17	.7	.7	82.6
	1996	19	.8	.8	83.4
	1997	85	3.7	3.7	87.1
	1998	18	.8	.8	87.9
	1999	16	.7	.7	88.6
	2000	1	.0	.0	88.7

Figure No. 5: Details about year wise publication since the year 1991-2000

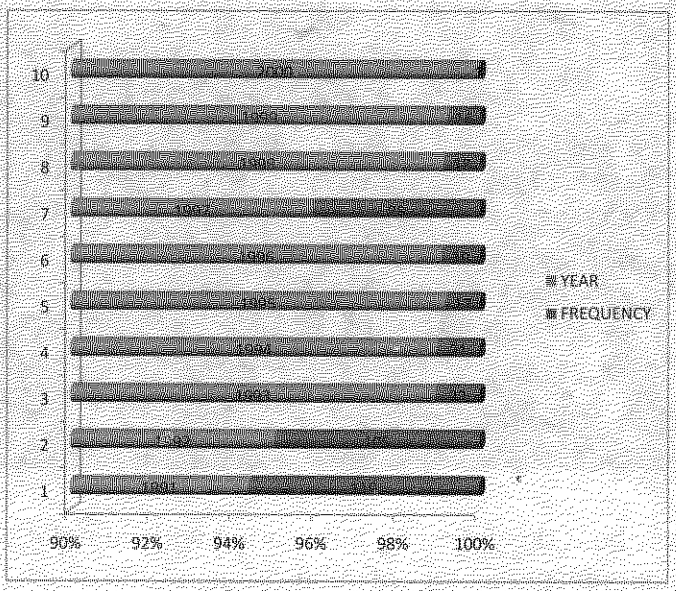


Table No. 5 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 1991 which is 5.2 and lowest in 1999. The percentage with little variation is also with 1998 where as during last ten years with the slab of 1991 to 2000 the maximum second highest percentage of publications in 1992 which is 4.6 percentages out of all data captured for the research.

Table No. 6: Details about year wise publication since the year 2001-2010

Yearwise Publication				
Year	Frequency	Percentage	Valid Percentage	Cumulative Percentage
2001	19	.8	.8	89.5
2002	12	.5	.5	90.0
2004	45	2.0	2.0	92.0
2005	7	.3	.3	92.3
2006	13	.6	.6	92.8
2007	12	.5	.5	93.3
2008	16	.7	.7	94.0
2009	18	.8	.8	94.8
2010	36	1.6	1.6	96.4
2001	19	.8	.8	89.5

Figure No. 6: Details about year wise publication since the year 2001-2010

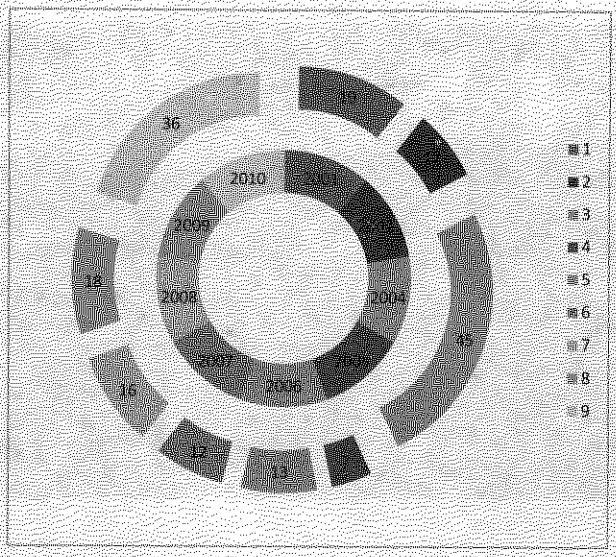


Table No. 6 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 2004 which is 2.0 and lowest in 2005. The percentage with little variation is also with 2002 where as during last ten years with the slab of 2001 to 2010 the maximum second highest percentage of publications in 2010 which is 1.6 percentages out of all data captured for the research.

Table No. 7: Details about year wise publication since the year 2011-2015

Yearwise Publication					
Valid	**Year**	**Frequency**	**Percentage**	**Valid Percentage**	**Cumulative Percentage**
	2011	19	.8	.8	97.2
	2012	52	2.3	2.3	99.5
	2013	4	.2	.2	99.7
	2014	2	.1	.1	99.7
	2015	5	.2	.2	100.0
		1	.0	.0	100.0
	Total	2300	99.9	100.0	
Missing	System	2	.1		
Total		2302	100.0		

Figure No. 7: Details about year wise publication since the year 2011-2015

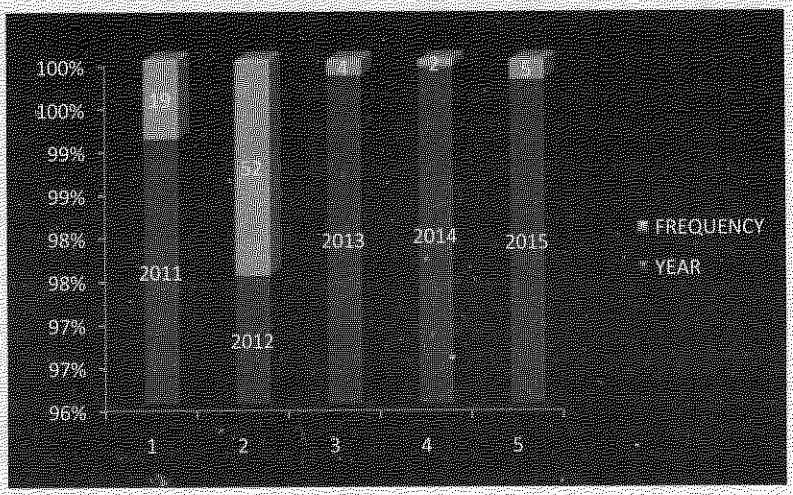


Table No. 7 shows about the year wise publication with cumulative percentage. It shows that the maximum percentage of publication in 2012 which is 2.3 and lowest in 2014. The percentage with little variation is also with 2011 where as during last five years with the slab of 2011 to 2015 the maximum second highest percentage of publications in 2011 which is .8 percentages out of all data captured for the research.

Findings: From the above table 1 to 7 it is found that the maximum number of publication during the years 1948 to 2015 the period is in table 5 in 1991. It may be the awareness of the authors or the influence and reorganization of the society towards the publication.

Table No. 8: Details about year (1948-2015) of publication with respect to sex of the authors

1,2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	2075	90.1	91.4	91.4
	Female	148	6.4	6.5	97.9
	3	47	2.0	2.1	100.0
	Total	2270	98.6	100.0	
Missing	System	32	1.4		
Total		2302	100.0		

*1=Male, ** 2=Female, *** 3= Undefined

Figure No. 4.8: Details about year (1948-2015) of publication with respect to sex of the authors

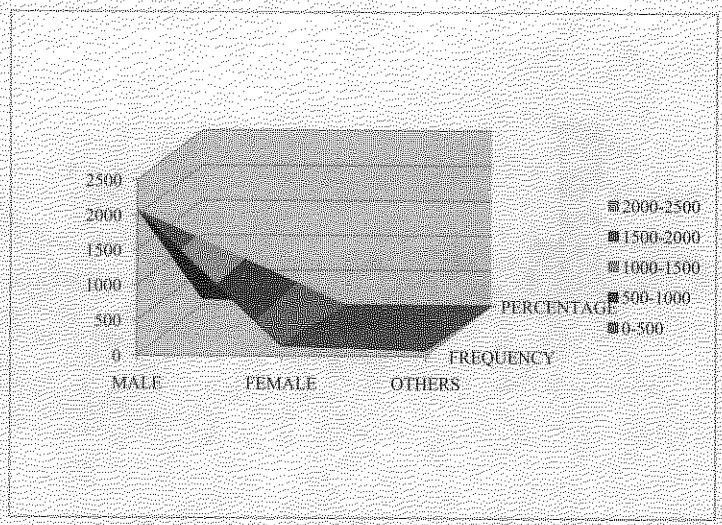


Table 8 shows about the number of authors with respect to their sex involved in LIS publications during 1948 to 2015. It is found that the male authors are more compare to overall LIS publication during the period 1948 to 2015. Out of 2302 publishers participated in LIS publication male are 2075 and the percentage is 90.1 where as female are only 148 in number with percentage of 6.4 where as 47 are unable to show their presence with unique contribution.

Table No. 9: Details about year of publication with respect to profession of the authors

1,2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Librarian	159	6.9	7.0	7.0
	Faculty	2119	92.1	93.0	100.0
	Total	2278	99.0	100.0	
Missing	System	24	1.0		
Total		2302	100.0		

*1= Librarian, ** 2= Faculty, *** 3= Undefined

Figure No. 9: Details about year of publication with respect to profession of the authors

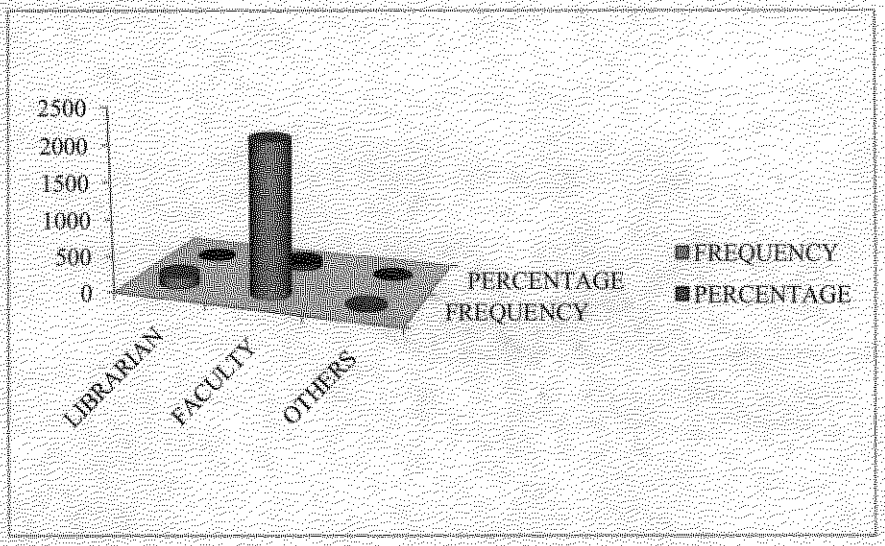


Table no 9 shows about the designation of the library LIS professionals. It is found that the faculties working as LIS as Faculty more than that of Librarian. Out of 2300 professionals involved in the study 24 number projected 1% is as miss values due to their none involving. Whereas 92.1% (N=2119) are as faculty and 6.9(N=159). The calculated Valid Percentage against the sample 7.0 and 93.0 with cumulative percentage as 7.0% and 100%.

Table No. 10: Details about year of publication with respect to number of the authors

1,2,3,4					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	One Author	1422	61.8	62.3	62.3
	Two Author	466	20.2	20.4	82.7
	Three Author	195	8.5	8.5	91.2
	Four Author	201	8.7	8.8	100.0
	Total	2284	99.2	100.0	
Missing	System	18	.8		
Total		2302	100.0		

*1= One Author, ** 2= Two Author, *** 3= Three Author, **** 4= Four Author

Figure No. 10: Details about year of publication with respect to number of the authors

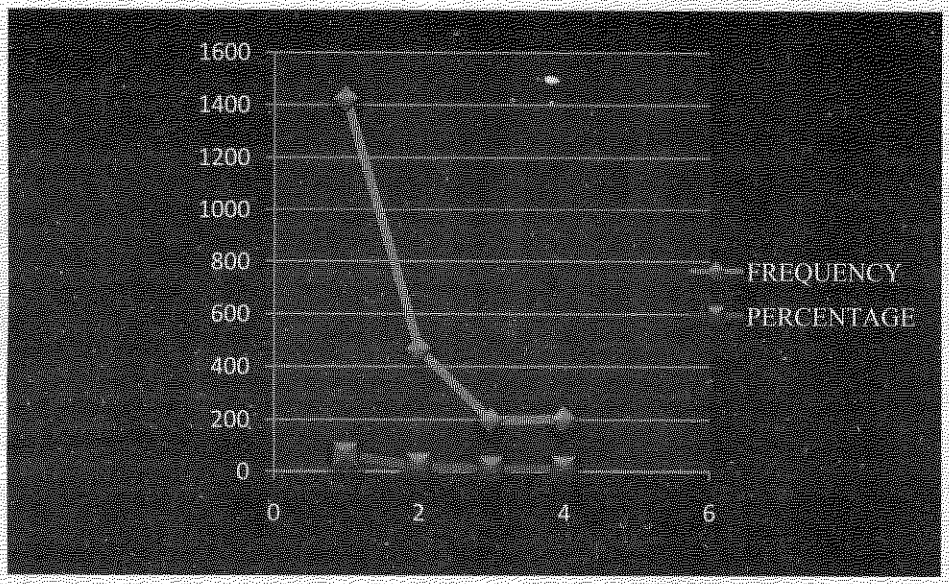


Table 10 shows about year of publication during 1948 to 2015 LIS publications with respect to number of the authors for their contribution in publication. Out of 2302 publications the single author are 1422 and the percentage is 61.8 which is highest and three authors are 195 out of 2302 authors. The percentage is 8.5 where as four authors are 8.7 percentage only. It means most of the authors are wants to be sole author for their publications without association. The second higher percentages are with two authors i.e. 20.2.

References:

1. Neelameghan, A. India, education for librarians and documentalists. *In* Encyclopedia of library and information science, Vol. 11, New York, Marcel Dekker, 1974. 323 p.
2. British Standards Institutions.(1976). Britain Standard Glossary of Documentation terms. Prepared under the direction of the documentation standards committee, pp. 7.
3. Jena, Kamal Lochan (2012). Scholarly Communication Pattern in Textile Research Journal-1996-2001. In *Modern Approach to Bibliometric Studies.* New Delhi, India: SSDN publishers and distributors.
4. Panda, Bibhu Prasad (2012). *A Model Bibliometric Study on Information Literacy.* New Del-

hi, India: SSDN publishers and distributors.

5. Mukherjee, Bhaskar (2013). A Scientometric profile of Prof. Lalaji Singh as seen through Web of Science and Scopus. *Annals of Library and Information Studies*, 60, 195-203.
6. Gupta, Jyoti & Khare, V.P. (2013). Citation Analysis of Doctoral Thesis submitted to Bundelkhand University (Jhansi) and Dr. Harisingh Gour University (Sagar) in the discipline of Library and Information Science: A comparative study. *Library Herald*, 51(4), 377-385.
7. Singh, K. P. & Bebi (2014). Library Herald: A Bibliometric Study (2003-2012). *Library Herald*, 52(1), 19-27.
8. Kumbar, Mallinath &Kumar, Girish N. (2011). Authorship Trend and Collaborative Research in Genetics and Plant Breeding. *SRELS Journal of Information Management*, 48(2), 113-122.
9. Khoo, C. S. G. (2011). Towards an Asia vision of library and information research. *Journal of Library and Information Studies*, 37(2), 4–19.
10. Walia, Paramjeet Kaurand &Kaur, Manpreet (2012).Authorship Pattern in Library and Information Science Journal Literature. *Information studies*, 18(3), 163-176.
11. Sangam, S.L. & Mogali, Shivaranjini, S. (2013). Research Collaboration in the Field of Social Sciences. *SRELS Journal of Information Management*, 50(5), 629-637.
12. Sudhier, K.G. Pillai (2015). Lotka's Law and Pattern of Author Productivity in the Area of Physics Research. *DESIDOC Journal of Library & Information Technology*, 33(6), 457-464.
13. Rao, K. Nageswara, Sharma, Rajeev Kumar, Devi, S. Girija & Muralidhar, S. (2016). Bibliometric Analysis of the Journal of Propulsion and Power (1985-2013). *DESIDOC Journal of Library & Information Technology*, 34(3), 271-276.

Dimensions of Research in Library and Information Science in India: A Historical Perspectives

Dinesh Kumar Tiwari

1. Introduction:

In common parlance, research is a systematic search for knowledge that is characterized by disciplined inquiry. It is that form of human activity whereby answers are sought with as great an approximation of truth and accuracy as human knowledge makes possible to basic and fundamental question concerning the phenomena of the universe. It is not concerned with the trivial and unimportant, it is much more than mere fact finding, it is pursued by means of application of certain accepted methods or procedures which in the light of experience seem most likely to produce truthful result and advancement of human knowledge.

In other words the research is an investigation which seeks to increase one's knowledge in a given subject or problem. Research in subject field is carried out to develop and evaluate the concepts and theories. It is a careful study or investigation to discover new facts or information. It, therefore requires the systematic analysis and logical interpretations of empirical evidence to prove or disprove the conceptions or assumptions as done previously.

2. Research Education in Library and Information Science:

Historically speaking LIS does not have a long tradition of research scholarship or organize research activity in the modern sense. This however does not mean that individual librarians in the past have not experimented. In fact, throughout the history of libraries in various countries, there has been a great deal of experiments, innovation and ingenuity in the solution of library problems. The last quarters of the 19th century were certainly a period of intense enthusiasm for new methods, techniques and gadgets particularly in the U.S. and U.K. this enthusiasm had been made possible by the establishment of the professional associate-ions, the American Library Association in 1876 and the British Library Association in 1877, but in ancient India the education and library system were highly rich in the world from the evidences which are found in the history of India such as Nalanda, Takshsheela, Vikramsheela and Odantapuri, etc.

Pioneers like Dewey, Cutter and Panizzi were thinker and innovators par excellence. Apart from his classification, Dewey founded the Library Journal, the Library school at Columbia. Cutter was a Librarian with a great imagination for bringing systematization in various library procedures and practices. He can rightly be called a genius for bring the first to develop rules in the field of subject indexing. Panizzi was far ahead of his times in developing cataloguing rules and designing of the British Museum Library. James Duff Brown's introduction of open access in the lending library at Clerked Well in England in 1894 led to a battle with the supports of closed access, the bitterness of which certainly amazes us now. During the period too, the great controversy on the relative merits of classified and dictionary catalogues began. Much attention was given to perfection of gadgets for useful purpose. F. J. Burgoyne's fascinating the little book library construction: architecture, fittings and furniture published as early as 1897, contains detailed descriptions with drawings of available devices for adjusting shelves and so on. A few other names can also be mentioned here like Jewett, Stanley Jast and Berwic Sayers from such continues for their contributions in the context of the library developments.

In India Dr. S. R. Ranganathan who came into the library profession during the mid1920 and may be placed as the father of library Science in India and he made his valuable contributions to almost all branches of library and information science particularly in the field of classification, subject indexing and documentation. Some of his books like Five Laws of Library Science (Ist ed. 1931 and 2nd ed. 1957) and Prolegomena to Library Classification (Ist ed. 1937 and 2nd ed. 1967) can rightly be called as classics in the field. During his life Ranganathan created the entire library world for India and strongly influenced the entire library field of the world.

3. Period of Organized Research:

While the contributions made by this researchers as well as by various other library professionals would always find the prominent place in library classification has come into its own during the past few decades only since 1940's in the U.S.A. and 1960 in U.K. as mentioned by Professor P.B. Mangla in his work titled of Research in LIS in USA, UK and India an one hand (4). While the first dissertation relating to librarianship recognized in the US in the year 1925 on the other hand as mentioned in the work of Nathan M. Cohen et al. as titled, Library Science Dissertations 1925-1959.

In India the pace of development in this arena has rather been slow. These research activities can be classified among two categories:

1. Research constructed in library schools relating to the award of M. Phil. And Ph. D. degree, and
2. Research carried out by individual researchers or research teams in library schools, libraries, documentation centers, etc. on certain problems without to the award of any formal degree from time to time.

LIS teachers, librarians and information officers face problem in their institutions for which the investigation may have to be carried out. These problems can be of small scale or large scale. They can be specified to one institution, e. g. the best method of providing current awareness services (CAS) to Members of Parliament or of general nature, e. g. economics of microfilming. They can be of short terms or long terms e. g. continually dispensing exploration of the fruitions and structure of bibliographic records in all kinds of library situation. They can be very practical or very theoretical e.g. linear programming model for resource allocation.

The number of research projects undertaken by individual researchers or research teams in different countries for award of a formal degree or otherwise has been increasing rapidly during the past 25-30 years and information about them can generally be found in certain journals such as Library Literature, Library and Information Science Abstract (LISA), Radials Bulletin, R & D projects in Documentation and Librarianship (FID), British Library R. & D. Newsletter, ISORID UNESCO and others.

Since USA and UK have been playing a significant role in the development of research in library and information science, so it would be desired to have an idea about the activity in India.

3. Research in India:

Though a developing country yet India's contribution in library and information science particularly through the voluminous writings of S. R. Ranganathan are already well recognized all over the world. Prior to Ranganathan the library world of the country was dominating from vedic period to the establishment of British Government in India. Library and Information Science is already recognized as a discipline for study and research at the Post Graduate level in universities in India. Out of total 46 library schools , including the two having the courses in Information Science , INSDOC, New Delhi and DRTC, Bangalore only nine library schools have the provision for Ph. D. programme.

While some of the library science departments have been actively engaged in conducting quality training programme, their research component, in general has been quite poor. Prior to 1970's the total number of Ph. D. awards from these library science departments is quite poor. Besides the library science departments some LIS scholars have been awarded Ph. D. Degree for their research work in various other university departments such as Law, History, Sociology, etc. and so on topics falling under the purview of Library and Information Science.

4. Major Factors for Lack of Research Activity:

Though the first Ph. D. degree in LIS was awarded by the University of Calcutta to Mr Manindranath Basu as early as 1950 in India on the topic, 'Museum Method and the Process of Cleaning and preservation/ library preservation' and then the second LIS doctoral degree was awarded by the University of Delhi in the year 1957 to Mr. V.K.R.V. Rao, yet the development in research work in the country has been rather slow. Prior to 1980's job opportunities are improved in libraries and documentation center in the country and the people with good academic and professional qualifications have been in good employment without facing much competition without having research qualifications. Besides as started above some certain other factors are also responsible for lack of research activity in the field of library and information science. These are the following:

1. Small size of the teaching faculty which has to carry a heavy workload of teaching and other academic programmes in library science departments.
2. Lack of research qualifications and experience by the teaching faculties and practicing librarians.
3. Lack of financial support in the research fellowships, scholarships for young scholars to work to work on fulltime basis.
4. Lack of proper library facilities.
5. Non-availability of essential data from libraries, documentation center, information centers and similar natures of such other organizations, etc.
6. Non-availability of research supervisors for topics of researches involving interdisciplinary research.
7. Ever-changing nature of Library and Information Science discipline.

8. Need for Planned Research:

Regarding research activity in the field of library and information science is much realized by the Library and Information Science scholars in the country from time to time. The contributions of some Library and Information Science scholars are very much appreciable in this field. Professor P. V. Mangala is the first library scientist who has deeply studied the need for vigorous research activity in library and information science in India (1). He has suggested some of the factors which emphasizes the needs for vigorous research activity in Library and Information Science in the country. These are the following:

1. Increasing emphasis on research qualifications for different senior level positions in library, information center and documentation center;
2. Gradual recognition of the role of libraries and inf-ormation programmes of socio-economic development, industrial growth and R. & D. activity, etc.;
3. Increasing need to develop and provide computer based information services to meet the varied and complex information requirements of the users;
4. Need to develop well organize information system at national, state and regional levels;
5. Need to develop and utilize Information technology, and
6. Need to develop interdisciplinary research with areas such as linguistics, mathematics, sociology, psychology, computer science, etc.

7. Types of the Research Activity:

On the basis of the input of the International information Systems of Research in Documentation(ISORID) Seetharaman found that during 1968-76, 15 projects have either completed or in progress in different institutions or organizations. It is evident that 92% of the research activity reported from educational institutions such as universities, DRTC and INSDOC. The remaining 8% is reported from Professional Associations, Information Centers and Libraries.

These 115 dissertations cover the few areas in the field of library and information science such as information work especially, classification, indexing, indexing language, descriptive and evaluative studies on organization, without giving much attention to areas such as information services, user studies and

training in library and information science. However no such comprehensive work is yet available concerning the growth pattern of doctoral dissertations in the field of library and information science as submitted in different Indian universities from the period of 1950 to 1997, although few articles are published in the leading library and information science journals such as, Annals of Library Science and Documentation and the University News of Association of Indian Universities, from time to time.

Prof. Amitabh Chatterjee is tried to study to find out the research trends in library and information science in India in his article. In the year 1995, he has suggested for conducting research in the field of library and information science areas which are not given the proper attention by the LIS scholars in the country. Another LIS scholar Dr. Ramansu Lahiri has also made valuable contributions towards the development of the research activity in library and information science in India through his study in the year 1996. This study includes the detailed account of Ph. D. Programmes in library and information science in India covering the periods from 1959 to 1995.

He has found that the library and information science scholars who actively involved in research work face a lot of difficulties such as lack of sufficient finances, lack of suitable research supervisors or subjects experts as well as the ever changing trends of library and information science fields. In this study, one more article is considered which has dealt with one decade of development of library and information science research in India from 1987 to 1997 as written by K. Manjunath and D. Shivalingaiah. The emphasis is given in his work about the current trends and future direction of the field by analyzing all these accepted for award of Ph. D. and research in progress in various Indian Universities from 1987 to 1997, to provide foundation for examining the performance of library and information science research. The main objective of this study is to broaden the perspectives of the LIS research community and to help them to debate on the nature and proper direction of the research.

Any subject field requires continuous research support to develop as a discipline. Library and Information Science research is of recent origin though the research in this field started during the second decade of the century and substantial growth has been registered during 1990's only. The research studies were carried out mainly by the practitioners particularly those in the academic libraries, faculty and students of the schools of library and information science. Prof. A.A.N. Raju has traced some factors such as rapid changes in information technology, problems faced in management of libraries, UGC Norms for carrier promotion changing pattern of reading habits of users, desired for rec-ognition

and faculty status in the society which contributes towards the increased interests in Library and Information Science research. Feather and Sturges remark that the role and status of LIS research has been the subject of controversy. As a professional field with an emphasis on practice rather than theory, LIS research has been criticized for its lack of rigorous theoretical base for the significance of the research questions addressed and the quality of research methodology employed.

A study of subject trends in LIS research from 1975 to 1990 has revealed library management to be the most popular subject of research. Another significant area of research is identified in Atkins study i.e. information storage and retrieval systems and databases.

K. Manjunath and D. Shivalingaiah's study has been under-taken by analyzing theses submitted for the award of doctorate and research in various Indian universities from 1987 to 1997. The research work done in the field of library and information science only is analyzed for the purpose in this volume, an analysis of 255 LIS Doctoral dissertations has been carried out taking into considerations its main objectives such as:

I. To find out the nature and direction of LIS research during 1987 to 1997;

II. To verify the diversity of current research in LIS field, and

III. To identify the areas of research which are receiving insufficient attention from LIS scholars on the basis of ten years periods i.e. 1987 to 1997.

8. Conclusion:

In order to find out the current trend of research in the domain of library and information science in Indian scenarios, the total (340 approximate) LIS doctoral studies/dissertations have been collected from various sources and are placed into two phases such as from 1950 to 1979 as the first phase and from 1980 to 1997 as the second phase. A sharp increase in the LIS doctoral studies is found since 80's decade more and more doctoral studies in the various branches of LIS has been completed during this period than preceding three decades of its production. However the efforts and contributions as made by LIS professionals towards the various aspects of LIS research activities and its development in Indian context are very much appreciable as observed in this present study.

Consequently, towards advancing research activities in the various branches of library and information science as presently appeared many new challenges such as computers, communications, processing, reprographic technology, library

automation, information technology, cyber library, digital library and the various interdisciplinary subjects like Humanities, Social Sciences, Vedic Literature, Sanskrit and Oriental learnings, Preservation, Conservation, Manuscriptology and Environmental challenges. In ancient Indian history the Librarians were given honoured as, 'Granthi bhawati panditah' which means that the place of the librarian in the society is equivalent to the status of professor, but the writers and the researchers always ignore to mention such evidences in their writings about the rich Indian Library system of ancient India. Some new initiatives must be taken for widely preferred subject for offering greater job opportunities to the students as compared to the other disciplines and the courses and the degrees may be formulated as Bachelor of Knowledge Management in place of BLIS as well as Master of Knowledge Management in place of MLIS.

REFERENCES:

1. SHERA, J. H. The Foundation of education for librarianship, New York, Becker and Hayes, 1972, chap., 12.
2. MANGLA, P.B. ed. Library and education science in India, Delhi, Macmillan, 1981.
3. MANGLA, P.B. Library education in India, Pakistan and Bangladesh, in advances in librarianship, IO: 1980; pp.191-240.
4. SEETHARAMA, S. Library and information science research in India: an analytical study based on the input to ISORID Lib. Sc. 13:1976: 121-137.
5. RAJU (AAN), et al. Fifty years of library and information science education in India. Hyderabad: Suchitra Prakashan, 1988.
6. FEATHER (John) and STURGES (Paul), ed. International encyclopedia of information. London: Rutledge Publication, 1977, pp.402.
7. CHATTERJEE, (Amitabh) et al. Research trend in Library and information science in India. Bangalore:Annals of Lib. Sc. And Documentation. 42, 2:1995; 54-60.
8. LAHIRI (Ramansu). Research in library science in India, 1959-1995: an account of Ph. D. programmes. Bangalore: Annals of Lib. Sc. And Documentation, 43, 2 1996. Pp. 59-68.

9. LAHIRI (Ramansu). The Ph. D. Programme on library re-search in India: a bird eye view. New Delhi: Association of Indian Universities-University News-34, 16.1996. pp. 7-8.
10. RESEARCH in Progress and theses of the month. New Delhi Association of Indian Universities- University News up to December, 1997.
11. MANJUNATH (K) and SHIVALINGAIAH (D). Library and information science research 1887-1997: a decade of development. Bangalore: Annals of Lib. Sc. And Doc. 45, 1998. pp. 137-155.

Global Impact of Steel Research carried out at CSIR- National Metallurgical Laboratory during 1986-2015: A Citation Study

Paras Nath Mishra

Knowledge Resources & Information Technology Division
CSIR-National Metallurgical Laboratory
PO. Burmamines, Jamshedpur-831 007, Jharkhand (Erstwhile Bihar), India
Email: pnmis@rediffmail.com

Abstract: This paper provides an insight into the citation analysis of research publications related to steels research Metallurgy) executed during 1986-2015 at CSIR-National Metallurgical Laboratory, Jamshedpur, India. This study has planned to analyses scholarly publications and citations. The steel related projects have altogether contributed a total 596 (SCI) research papers, and received a total 4780 citations are only considered for the study. Out of which, 4025 citations are spread over 556 journals and 755 citations are cited in proceedings books chapter etc. The required data were collected from the Science Citation Index (SCI) retrieved through web of science database. This study has applied various parameters such as extent of citation received in terms of number of citation per paper, year wise breakup of citations, continent wise distribution of citation, citing journals and impact factors. The Bradford plot is used to determine the core citing journals shows the course is likely to s-shape, which indicates subject maturity. The core journals may be useful for the subscription in library particularly useful in ferrous metallurgy area.

Keywords: Research Impact, Citation analysis, Bibliometric Study, Steel Research, Impact Factor, Bradford's Law, National Metallurgical Laboratory

1. Introduction

An attempt has been taken to trace out the research impact through citation analysis of steel research executed during 1986-2015 at CSIR-National Metallurgical Laboratory (NML). The subject area of the projects was broadly fall under the ambit of ferrous metallurgy and its allied area. The NML is one of the oldest research laboratories of the Council of Scientific and Industrial Research, New Delhi. This R&D house was inaugurated and dedicated by the architect of modern India and the First Prime Minister, the late Pandit Jawaharlal Nehru on 26 November 1950 at Jamshedpur (Jharkhand) Erstwhile Bihar, India. The Government of India has well planned to establish a national laboratory at the India's largest minerals rich belt for the exploitation of natural resources through state of the art Research & Development with trained work force for the development of society. The CSIR-NML is involved in research, design, development and customer support in R&D products, processes and technical services including consultancy and testing in

the areas of minerals, metals and materials including environmental pollution, material degradation and support services.

This globally reputed Laboratory has successfully carried out a number of R&D projects sponsored by industries, government bodies, academia, and private sectors of the National as well as International repute. Depending upon the nature of funding, the projects have been classified like, Sponsored research, Grant- in-Aid Project, collaborative research (bilateral & multilateral), network projects, exploratory projects, etc.

It is always expected from the R&D organization to deliver scientific output in the form of new products, technologies, patents and research papers from the projects to society in particular and nation in general.

This study has included only one facet as deliverables of output i.e. research papers to examine its global impact through citation analysis and it will explore the extent of usage of papers by the global community.

2. Literature Review

Citation study constitutes an important tool in quantitative studies of science and technology. It helps in to accessing the quality of a given publications, the number of times it has been cited in the various format of literature, can be counted. The use of citation analysis in research on the history of science is based on a literary model of the scientific process.

R&D projects are only completed when it has been published and shared with the community. Research publications constitute a key element to establish the intellectual copyrights. They provide the necessary means to assess the scholarship and intellectual property. Herein a research publication is defined as a peer-reviewed publication.

Bibliometrics method in particular is primarily concerned with the extent to which one published research is cited by other published research, which can be used as a means of assessing research quality. However, practicing librarians are well aware of the limitations of bibliometrics. If they were asked, they would probably have a lot of valuable advice to give to government departments in the use of bibliometrics tools, such as citation analysis, to assess the research quality and reward the best research with the most funding.

Considering the importance of citation analysis, a number of studies have been reviewed by the authors that was conducted worldwide by various expert [1-8] like

(Garfield, E., 1972, Moravcsik, M.J. et al.1976, Moed, H.F & Vriens, M. 1989, Minor, L. & Dostatni, P. 1991, Mahajan, B.S. 1993 ,Gupta, B.M., et al. 1999, Koganuramath, M.M. et al.2002, Vinkler, P. 2004) [9] and in Indian context, a pioneer work has been done on the publication productivity of the Chemistry Division of Bhabha Atomic Research Centre, India. Kademani, B.S, et al in 2007. The present study analysed 4780 citations received from 596 papers as deliverables of steel research, accomplished during 1986-2015.The present study is an attempt to highlight the institutional citation analysis, contributed through R&D projects pertaining to steel research by analysing the most valuable and scholarly communications during 30 years of time span only.

3. Objectives

The objective of this study is to highlight the impact of publications contributed through steels research at the CSIR-National Metallurgical Laboratory (NML) during 1986-2015 indexed in Science Citation Index, retrieved through Web of Science database. The parameters studied include growth of publications and citations, examine the scattering of citations among journals, unfold the distribution of the citing journals according to their impact factors, find out the distribution of citing papers according to country of publications followed by the global distribution of citations, sector wise distribution of citation etc.

4. Materials and Methods

The research impact is determined through citation analysis. The author has used institutional annual reports, projects database, and Science Citation index as the major information resources for data collection. The study covered a period of 30 years (1986-2015). A total 950 projects on ferrous metallurgy have contributed 596 (SCI) research papers were selected and finally considered for the study. Further, a total of 4780 citations received by SCI journals, proceedings, books chapters etc. are download with full bibliographic details from the Web of Science database to identifying global visibility of papers. To judge the quality and quantity of research papers, Journal Citation Report-2014 has been incorporated in this study. The data were further classified, categorized, designed, analyzed, and computed for deriving interpretation to achieve the preordained objectives of the study.

Analysis and Interpretation

5. Growth of Citations

The stature and credibility of any R&D institution depends substantially on the number of citations, which the contribution of its scientists and researchers receive. The impacts of R&D projects are tested through publications and citation. It was observed that during 1986-2015, ferrous metallurgy area has contributed 596 SCI papers, received 4780 citations. The average number of citations per year was 159. The highest number of citations received was 2315 in 2006-10. There is not even growth of papers and citations. The number of papers published and citation rate peaked during 2006-2010 as inflows of the earlier papers have continued to receive citations. This indicates that the quality and quantity analysis go hand in hand. The citation rate was observed to increase more in qualitative papers, those published earlier. Figure 1 highlight publications growth and the citations trends. Figure 2 highlights the trends of the average number of citation per papers during 1986-2015. The citation trends reflect n –shape. The highest average 12 was noted during 2001-05, followed by 10.81 and 9.12 average was observed in 2006-10 and 1991-95 respectively. The highest averages are indicator of qualitative papers was contributed through steel research. The overall average citation per paper remains 8 during 1986-2015.

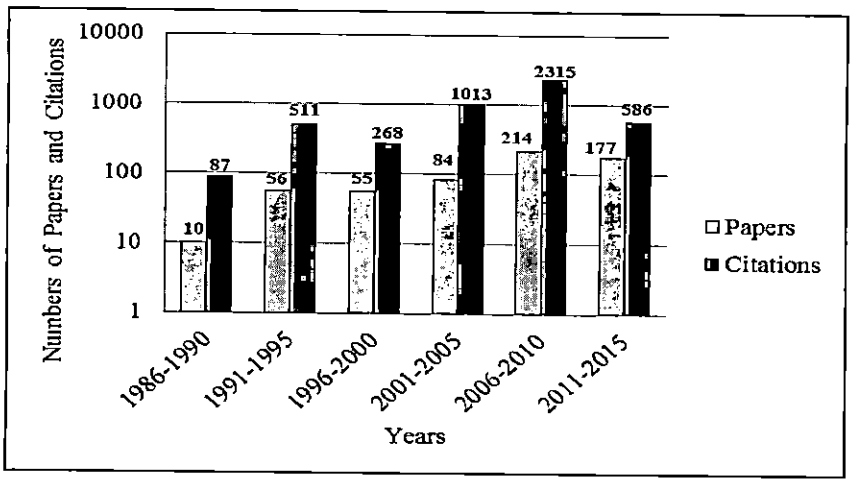


Figure1: Growth of Papers & Citation of steel research during 1986-2015

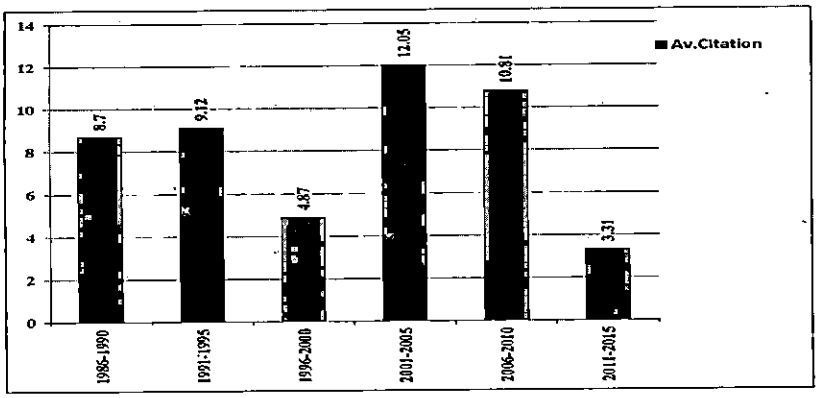


Figure 2: Average Citation of Steel Research during 1986-2015

6. Journals Cited Steels Papers

During 1986-2015, a total 556 journals cited 4025 citation pertaining to the steel research papers. A maximum paper were cited in *Materials Science & Engineering "A" - Structural Materials Properties and Processing* with 328 citations, which constitute 8.14 % of the total 4025; followed by *corrosion science include* 197 citations (4.89%) whereas *Surface Coatings Technology* embodied 157 citations and shared 3.90 % of the total citations. A list of top 25 journals is highlighted in Table 1.

Table 1: List of top 25 Journal Cited Steel Research Papers during 1986-2015

SL.No	Title(s)	Citations	IF-2014	Total IF
1	Materials Science & Engineering "A"	328	2.567	841.976
2	Corrosion Science	197	4.422	871.134
3	Surface Coatings Technology	157	1.998	313.686
4	Metallurgical & Materials Transactions "A"	123	1.73	212.790
5	Materials Design	107	3.501	374.607
6	J Engineering & Performance	89	0.000	0.000
7	Engineering Failure Analysis	87	1.028	89.436
8	Corrosion	67	0.925	61.975
9	Materials Science & Technology	61	0.995	60.695
10	Intl J Electrochemical Science	60	1.500	90.000
11	Ironmaking Steelmaking	60	0.71	42.600
12	Applied Surface Science	59	2.711	159.949

13	J Alloys & Compounds	58	2.999	173.942
14	Trans Indian Institute of Metals	54	0.615	33.210
15	Scripta Materialia	52	3.224	167.648
16	Materials at High Temperatures	48	0.42	20.160
17	Engineering Fracture Mechanics	47	1.767	83.049
18	J Materials Science	47	2.371	111.437
19	Materials Chemistry & Physics	44	2.259	99.396
20	Acta Materialia	39	4.465	174.135
21	Intl J Fatigue	38	2.275	86.450
22	J Magnetism & Magnetic Materials	38	1.97	74.86
23	J Materials Processing Technology	36	2.236	80.496
24	Electrochimica Acta	35	4.504	157.64
25	Materials & Corrosion Werkstoffe Und Korrosion	35	1.373	48.055

Source: www.isiknowledge.com *(Accessed on 28 th December2016)*

7. Impact of Research through JIF

According to (Wallin, 2005) "The dynamic and internal structures of any system of scientific communication are greatly influenced by varying quality of the primary journals in which scientific communications are published. Another journal evaluation factor, the ISI Journal Impact Factor (JIF), attracted calculation by dividing the number of current citations to items published in the two previous years by the total number of articles and reviews published annually by the Institute of Scientific Information (ISI), and the results are published in the Journal Citation Reports (JCR). JIF was originally envisaged only as an aid for scientific libraries for the evaluation of their choice of scientific journals. JIF today is used by anyone who analyses and evaluates research in regard to assessment and prioritizing the allocation of funds" [10] Considering the importance of IF, the same have been included as value added parameter in this study to determine the impact of research .The research papers are grouped under nine broad range of frequencies based on IF, are depicted in figure 3.

It was observed that, only 61 journals (10.97%) are noticed without Impact Factor (IF) and the remaining 495 (89 %) are with IF. Figure -3 highlight the journals categorized according to the IF range, which varies from 0.01-35 followed by citations. The findings reveal that IF range >1.00-2.00 covered the maximum

number of 158 journals and 28.41% citations, followed by IF range >0.51-1.0 covered 92 journals with 16.54 % citations and IF range that falls between 2.00-3.00 include 87 journals with 15.64 % citations. The overall distribution of journal with IF and citation is depicted in figure 3.

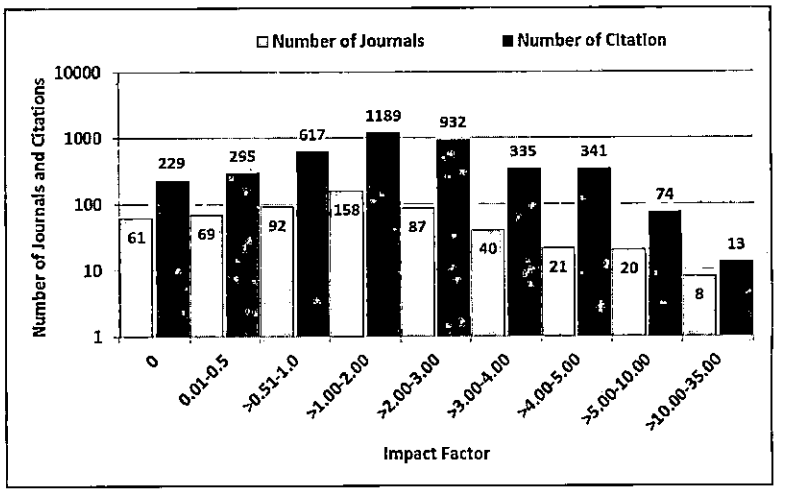


Figure 3: Citation at the Different IF Range

8. Implementation of Bradford Curve

Bradford's Law of Scattering is the most popular and the best known among the several bibliographic concept, that try to describe the effective working of sciences by mathematical means. The law describes a quantitative relation between journals. Figure 4 illustrates the Bradford-Zipf plot – the cumulative number of papers for each Journal against the logarithm of its rank – for journals citing steel research publications. It clearly demonstrates approximately the S-shape as the typical Bradford-Zipf plot, although the initial rise is somewhat faster than the typical one. The approximately linear portion appears at the journal rank of 11. The top 11 may be considered as the core journals that cited 1338 papers in first zone. The zone second containing 55 journals (1395 citation) whereas third zone include the rest 491 journals cited 1292 citation. Figure 4 highlight the status of citations and core journals in the area of ferrous metallurgy. The same may be useful for library subscription. A lists of core journals are depicted in table 1.

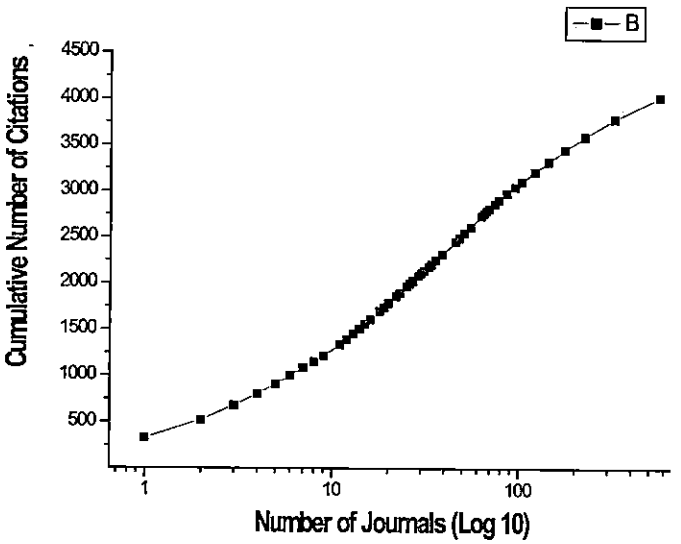


Figure 4: Journal Ranking and the Cumulative Number of Citations

9. Sector wise Distribution of Citations

A total 1110 institutions from various sector have cited the findings of steel research papers. It was observed that a total of 880 citations (79%) are received from academia, followed by research and development sector has recorded 143 citations (13 %) and industries amounting 78 citations (7%). Figure 5 highlight the overall sector-wise distribution of citations received by the research papers published in the area of ferrous metallurgy (steel research)

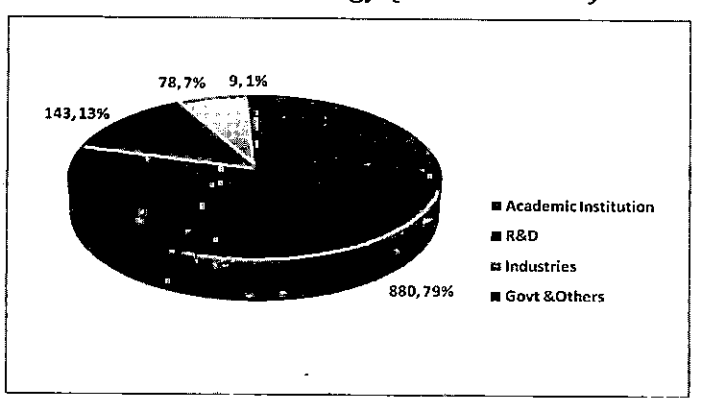


Figure 5: Sectoral Distribution of Citation (1986-2015)

10. Continent wise Distribution of Citations

The output of steel related R&D projects can be traced out by analyzing citations globally. This study shows that the output of projects as research papers pertaining to minerals, metals, metallurgy, and materials sciences has been cited from almost all parts of the world. The findings are highlighted in figure 6 reveals that, the maximum number of citations of papers came from Asia 3032 citations (22 countries); followed by Europe 1269 citations (33 countries) whereas North America contributed to 540 citations emanating from 5 countries. The global distribution of steel research with their citations reflects its worldwide recognition and validity of the projects. It seems to reflect from the study that the findings of the project as research papers helped the scholar to select papers, use in their scholarly paper, and pursue further R&D.

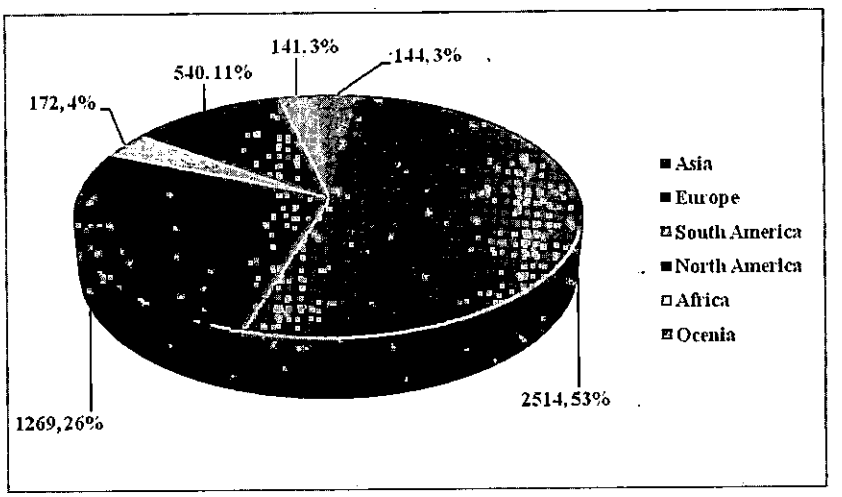


Figure 6: Global Distribution of Citations during 1986-2015

11. Discussion and Conclusion

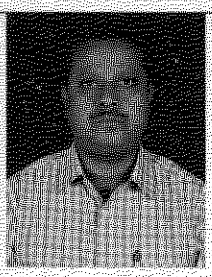
The citation output of steel research reflects the value of scholarly papers. It helps the global community to pursue further research through citing papers in their study. The study shows that during 30 years steel related publications have received a total 4780 citation out of which 4025 spread over in 556 journals and rest 755 cited in proceeding. The IF range of citing journals were 0.02 to 35, visible in research papers emanating from 1110-reputed institution/organization of 75 countries, covered in 13 languages. This study can be enhanced by including more bibliometrics parameters and a comparative study may be pursue with a similar type of research and development laboratory at the national, regional,

and international level. The output of the study helps the decision maker or the funding agency to access the global impact of research, tailoring to the current need of the society in the global scenario.

REFERENCES

1. E.Garfield. (1972). "Citation analysis as a tool in journal evaluation". *Science*, vol.178, no 4060, pp.471-79.
2. M.J.Moravcsik, P.Murugesan, and E. Shearer. (1976). "An analysis of citation patterns in India Physics", *Science and Culture*, vol.42, pp.295-301.
3. H.F.Moed, M.Vriens. (1989). "Possible inaccuracies in citation analysis", *Journal of Information Science*, vol.15, pp.95-107.
4. L.Minor, P. Dostatni. (1991). "A bibliometric study of the publications of the French National Institute for Health and Medical Research (INSERM)", *Scientometrics*, vol.22, pp.41-63.
5. B.S.Mahajan. (1993). "The measure of Science and scientists", *Current Science*, 65, pp.511-12.
6. B.M.Gupta, S.Kumar and S.K.Khanna. (1999). "Science in India: Performance of Council of Scientific and Industrial Research laboratories based on the productivity profile of scientists", *Research Evaluation*, vol.8, pp.177-187.
7. M.M. Koganuramath, M.Angadi and B.S.Kademani, B.S. (2002). "Bibliometric dimension of innovation communication productivity of Tata Institute of Social Sciences", *Malaysian Journal of Library &Information Science*, vol.7, pp.69-76.
8. P.Vinkler. (2004). "Evaluation of the publication activity of research team by means of scientometric, indicators", *Current Science, vol.* 79, pp.602-12.
9. B.S.Kademani, V. Kumar and G., Surwase et al. (2007). "Research and citation impact of publications by the Chemistry Division of Bhabha Atomic Research Centre", *Scientometrics*, vol.71, pp.25-27.
10. J.A.Wallin. (2005). "Bibliometric method: pitfalls and possibilities", *Pharmacology and Toxicology*, vol.97, pp.1742-83.

Authors Profile



Dr.Paras Nath Mishra is currently working as Principal Scientist at CSIR-National Metallurgical Laboratory, Jamshedpur, India. He has obtained M.Sc (Earth Science), MLISc, M.Phil, and PhD (Library Science) from India. He has more than 19 years experience in R&D organization and 5 years in the Nuclear Power Corporation (Department of Atomic Energy Mumbai India). His areas of interest are Library & Information Services, Research & Development evaluation, Scientometric Study, Project evaluation, Business Promotion, Science Dissemination etc. He has more than fourteen publications in the areas of Library & Information Science, Research & Development and Citation analysis etc.

LIS Research trends in Asia: A scientometric study based on Scopus

Vinod Kumar Gautam

(Research Scholar)
Dept. of Lib. And Info. Science
BHU, Varanasi-221005
Email. kumarvinodgautam14@gmail.com

Rishi Kumar

(Research Scholar)
Dept. of Lib. And Info. Science
BBAU, Lucknow-226025
Email. rishi9984@gmail.com

Abstract: This paper focuses on the growth trends and impact of Asian LIS research publications as reflected in Scopus database. During 2002–2016 a total of 21526 publications were published from 44 Asian countries. The average number of publications published per year was 1435.07 and the highest number of 2680 publications were published in 2015. The China is emerging as a leading LIS research country with 7822 articles, constituting 36.34 per cent of the total Asian LIS research output, followed by the India and Taiwan. The compound annual growth rate (CAGR) research growth of LIS publications at the Asian level remained 13.25 per cent. Out of 44 Asian countries, top 10 countries contributed 19746 (91.73%) of total Asian publications.

Keywords: AGR, Relative Citation Index (RCI), Collaborative Index (CI), Collaborative Coefficient and Degree of Collaboration

1. Introduction

Noruzi and Abdekhoda (2013) stated that academic and industrial interests are increasing in the impartial evaluation of scholarly research and global ranking of universities. Publication and citation counts have been used to assess the scientific production of countries and regions. While publication data have always formed a key component of research evaluation, they do not give any indication as to the quality of scientific research. On the other hand, although citation data have some inherent biases, especially towards publishing in English, it is often stated that a well-cited paper is used more by researchers, and it is probably considered more relevant to their scholarly work. During the last few decades, extensive studies have been conducted to analyze the research publications in terms of number of authors, gender of authors, length of articles, affiliations,

citations, co-citations, word frequencies, co-occurred words and trends in research areas by considering one or more academic venues. These types of analyses are usually done by the bibliometric and scientometric methods.

2. Objectives of the study

The following objectives have been framed for the study:

- To depict the growth of LIS research in Asia during the period 2005-2014 ;
- To examine the authorship pattern and nature of collaborative research ;
- To identify the authors productivity and their impact on scholarly world ;
- To examine Region-wise productivity of LIS publications ;
- To analyze top most prolific institutes of Asia and ;
- To find out the most preferred journals.

3. SOURCE DATABASE & METHODOLOGY

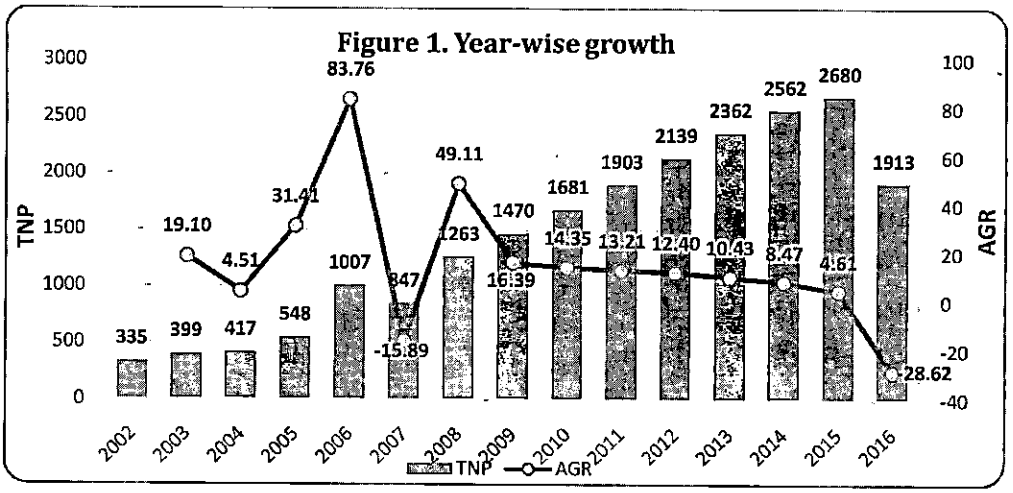
In advance search, subject code for Library and Information Science was used to find out the literature on 20th Sept. 2017. Total 547403 LIS literature from abroad were shown in display for the time span of 1858 – 20th September 2017. Then data were refined for 44 Asian countries (Country/Territory option) for the time span of 2002-2016. After that a total of 21526 bibliographic records pertaining to Asian Library and Information Science literature are obtained from the Scopus database and subjected to further analysis. The following methods and indicators have been used to analyze the publications.

4. Year-wise growth of publication

Table1 provides the AGR of the number of documents for period 2002–2016.

$$AGR = \frac{end\ value\ -\ first\ value}{first\ value} x100$$

Figure 1 presents the annual distribution and average growth pattern of LIS publications. Fluctuation is seen throughout the study period. The compound annual growth rate (CAGR) (calculated using the formula available at www.investopedia.com/calculator/cagr.aspx) was found to be 13.25% during the period 2002–2016. The AGR for publications has been decreasing trend from 19.10 in 2002 to 4.61 in 2015. AGR of publications was at negative in 2007 (-15.89) and 2016 (-28.62) while highest growth rate were seen in 2006 (83.76) and 2008 (49.11). And major fluctuation has been seen since 2003-2008, since then continuous decreasing trend were existed. The reason for the fluctuation is that there was no constant growth of publication.



The study analysis for the period 2002 – 2016 indicates that year in which less than 100 papers were published, were first five years i.e. 2002 (335), 2003(399), 2004 (417), 2005(548), 2007 (847) except 2006(1007) from which increased. In beginning the quantity of scientific publications were less but it increased gradually even though there were ups and downs in 2006 and 2014 is the year which possess more number of articles.

5. Year-wise citation impact of Asian publications

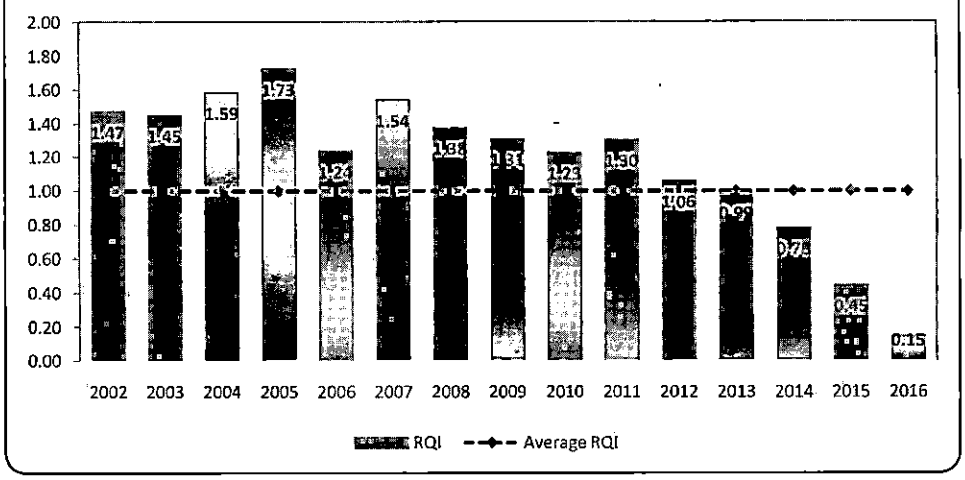
A value of RQI >1 indicates higher than average quality, whereas a value of RQI<1 indicates lower than average quality. Table 1 indicates year wise total number of publications, total citations, citation per paper, number of high quality and relative quality index. Figure 2 presents that RQI is lower than average during the year 2013, 2014, 2015 and 2016. RQI is maximum in the year 2004 and it was 1.59 during the year 2002 and 2012.

Table 1. Year-wise Relative Quality Index (RQI)

Year	TNP	TNC	TNC %	ACP	NHQ	RQI
2002	335	6325	3.86	18.88	191	1.47
2003	399	8476	5.17	21.24	224	1.45
2004	417	12026	7.34	28.84	256	1.59
2005	548	10840	6.61	19.78	366	1.73
2006	1007	14817	9.04	14.71	482	1.24
2007	847	14319	8.74	16.91	505	1.54
2008	1263	16685	10.18	13.21	672	1.38
2009	1470	15779	9.63	10.73	744	1.31
2010	1681	13927	8.50	8.28	799	1.23
2011	1903	15677	9.57	8.24	959	1.30
2012	2139	11527	7.03	5.39	877	1.06
2013	2362	10913	6.66	4.62	907	0.99
2014	2562	7616	4.65	2.97	776	0.78
2015	2680	3866	2.36	1.44	462	0.45
2016	1913	1096	0.67	0.57	109	0.15
Total	**21526**	**163889**	**100**	7.61	**8329**	1

It is observed from above table1 that average citation per paper of total Asian publications was 7.61. Highest ACP 28.84 was in 2004 and lowest 0.57 in 2016.

Figure 2. Year wise RQI



6. Form-wise growth of publications

In Table 2 it could be clearly seen that research articles document that appeared in Asian literatures, have shown a predominant contribution (85.68%) and its occupies the first position with respect to total number of publications reported during the study period. The conference paper as a form of LIS publication of Asia follows next in order (8.95%). The review form of publication takes third in the order (3.15%), note slips down to fourth in order (0.59%) and editorial form taken fifth position (0.54%). And remaining form of document letter (0.38%), article in press (0.27%), erratum (0.21%), book chapter (0.14%), and short survey (0.08%).

Table 2. Form of publication

Publication Form	TNP	TNP %
Article	18444	85.68
Conference Paper	1926	8.95
Review	679	3.15
Note	127	0.59
Editorial	116	0.54
Letter	81	0.38
Article in Press	59	0.27
Erratum	46	0.21
Book Chapter	30	0.14
Short Survey	18	0.08
Total Asian Pub.	21526	100.00

It could be deduced from the above discussion that journal articles predominate over other form of publications. It is more due to the vital place of journals as a medium of scientific communication than any other form of publication. Majority of the LIS scientists published their research papers in the form of journal article.

Changing trends of authorship of LIS publications

Table 3 presents that out of 21526 publications, 3698(17%) were single authored papers, 6568(31%) two authored papers, 8883(41%) multi-authored papers and 2377(11%) mega-authored papers. The authorship pattern clearly shows that more than 50% publications were contributed by Multi-authored and mega-authored while less than 50% of total publications published by single

and double authored. It means multi and mega collaborative publications were dominated over single and double-authorship pattern.

In the present study, it is found that CI was being increasing continuously at mean rate of 2.68. It was observed that year 2002- 2009 have the less than average CI value while remaining year have more than average CI value.

It is found, that DC was lowest at 0.63 in 2003 and highest at 0.88 in 2015. It indicates that DC is being increased continuously at the mean rate of 0.79. It has been seen that the trend of multi-authored publications were increasing during study period.

Ajiferuke, Burell, and Tague gave a new measure known as CC, which removed the shortcomings related to CI and DC. In this study, the mean CC was 0.49. It is indicated that CC is increasing continuously from 0.37 (2002) to 0.53 (2016) but minor fluctuation seen in over period.

Table 3. Authorship pattern of Asian pub.

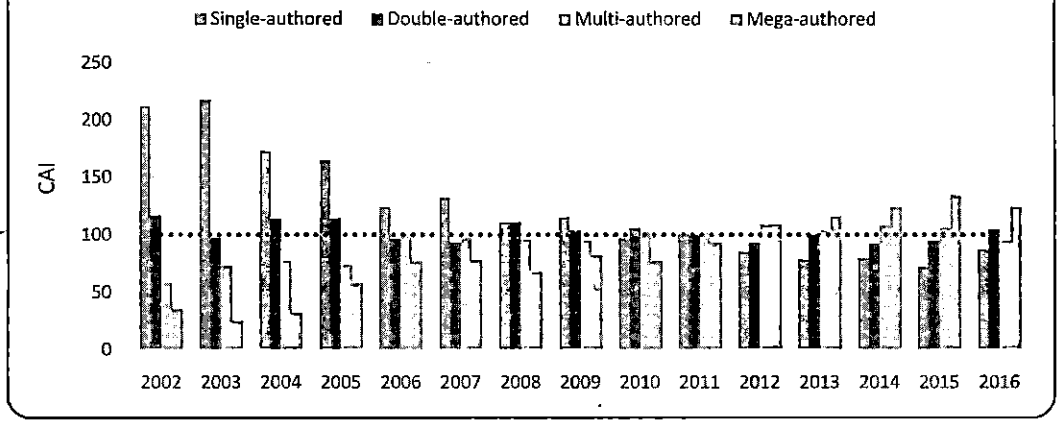
Year	Single-authored (CAI)	Double-authored (CAI)	Multi-authored (CAI)	Mega-authored (CAI)	TNP	No. of author	CI	DC	CC
2002	122 (212)	120 (117)	80 (58)	13 (35)	335	698	2.08	0.64	0.37
2003	149 (217)	119 (98)	120 (73)	11 (25)	399	831	2.08	0.63	0.37
2004	124 (173)	145 (114)	133 (77)	15 (33)	417	937	2.25	0.70	0.42
2005	155 (165)	191 (114)	167 (74)	35 (58)	548	1310	2.39	0.72	0.43
2006	215 (124)	296 (96)	411 (99)	85 (76)	1007	2659	2.64	0.79	0.49
2007	193 (133)	240 (93)	341 (98)	73 (78)	847	2242	2.65	0.77	0.48
2008	241 (111)	429 (111)	498 (96)	95 (68)	1263	3343	2.65	0.81	0.49
2009	293 (116)	468 (104)	575 (95)	134 (83)	1470	3907	2.66	0.80	0.49
2010	280 (97)	544 (106)	714 (103)	143 (77)	1681	4609	2.74	0.83	0.51
2011	329	580	798	196	1903	5349	2.81	0.83	0.51

	(101)	(100)	(102)	(93)					
2012	313 (85)	608 (93)	960 (109)	258 (109)	2139	6282	2.94	0.85	0.54
2013	317 (78)	723 (100)	1019 (105)	303 (116)	2362	6995	2.96	0.87	0.54
2014	349 (79)	718 (92)	1143 (108)	352 (124)	2562	7910	3.09	0.86	0.55
2015	331 (72)	773 (95)	1176 (106)	400 (135)	2680	8383	3.13	0.88	0.56
2016	287 (87)	614 (105)	748 (95)	264 (125)	1913	6139	3.21	0.85	0.53
Total	**3698**	**6568**	**8883**	**2377**	**21526**	**61594**	**2.68***	**0.79***	**0.49***

Figure 3 shows that CAI for single authored publications was more than average value from 2002-2009 and in 2011 shows that Asian scientists preferred to work in without collaboration while in 2010 and from 2012-2016 was less than average CAI value

In 2002, 2004, 2005, 2008 and 2009 CAI value of single and double authored paper were more than average value that shows works is preferred in without collaboration or with one person. In 2003, 2006 and 2007, CAI value of only single authored is higher than average that indicates that in these periods without collaborated work were preferred. In 2011 single, double and multi-authored work most preferred. Since 2012 to 2016 multi and mega-authored papers had more than average CAI value that pushed to most collaborative work.

Figure 3. Year-wise CAI



7. Authorship-wise citation distribution and its impact

It is observed from table 4 that 58.06%(2147) of single-authored publications were cited while 41.94% (1551) not cited, 63.38% (4163) of double-authored were cited and 36.62% (2405) not cited, 61.36% (5451) of multi-authored were cited and 38.64% (3432) not cited and 62.98% (1497) of mega-authored were cited while 37.02% (880) not cited. Therefore it has been seen that 61.59% (13258) of total (21526) publication were cited while 38.41 (8268) not cited.

The four levels of authorship pattern, their volume & percentage, number of publication cited (TPC), number of citations and their percentage of citation, citation per paper (CPP), and relative citation index (RCI) are calculated and shown in table 4.

Table 4. CITATION IMPACT OF AUTHORSHIP PATTERN

Type of authorship	TNP	TNP %	TNC	TNC %	TPC	Citedness %	ACP	RCI
Single-authored	3698	17.18	22911	13.98	2147	58.06	6.20	0.81
Double-authored	6568	30.51	49611	30.27	4163	63.38	7.55	0.99
Multi-authored	8883	41.27	73494	44.84	5451	61.36	8.27	1.09
Mega-authored	2377	11.04	17873	10.91	1497	62.98	7.52	0.99
Total	21526	100.00	163889	100.00	13258	61.60	7.61	1.00

Note: TNP=Total no. of publications, TNC=Total no. of citations, TPC=Total paper cited, ACP=Average Citation per paper, RCI=Relative citation impact.

On the qualitative scene of authorship pattern, out of the 8883 (41.27%) multi-authored publications, 5451 publications have received a total of 73494 citations, which is 44.84% of the total citations and out of 6568 (30.51%) double-authored publications, 4163 publications have received 49611 citations which 30.27% of total citation. In this view it has been seen that 71.78% of total citations received by double and multi-authored papers and remaining 28.22% citation received by single and mega-authored publications. The volume of the different levels of authorship pattern, and the publications with and without citations has been visualized in table 4. The citedness, CPP, and RCI of single-authored publications stand at 58.06, 6.20, and 0.81 respectively. Out of the 515 intra collaborative publications, 291 have been cited. The number of citations received by these publications is 2077, which is 26.28% of the total citations. The citedness, CPP, and RCI values of this category are 56.50, 4.03, and 1.75, respectively. So it can be assumed that scholarly impact of double and multi-authored publications is more effective than others.

8. Top 10 prolific authors of Asia

Table 5 lists the top 10 authors in which Shamai, S produced the highest 76 (0.35%) of total output and received 6602 citations followed by Mahmood, K. with 70 (0.33%) and 388 citations, Merhav, N. 67 (0.31%) and 1014 citations, Bar-Ilan, J. 66 (0.31) and 1397 citations, Zainab, A.N. 52 (0.24) and 305 citations, Park, H.W. 48 (0.221) and 631 citations, Ameen, K. and Huang, M.H. 43 papers, Abrizah, A. 42 papers, and Ho, Y.S. 40 papers. Out of the top 10 authors listed below 5 authors had higher than average RCI. Among these authors, highest CPP and RCI were for Shamai, S. (11.42) of Technion - Israel Institute of Technology, Haifa, Israel, Ho, Y.S. (5.98) of Asia University Taiwan, Trend Research Centre.

Table 5. Top 10 authors & their impact

S.N.	Authors	Affiliation	TNP(%)	TNC	CPP	RCI
1.	Shamai, S.	Technion Israel Institute of Technology, Israel	76 (0.35)	6602	86.87	11.42
2.	Mahmood, K.	University of the Punjab, Pakistan	70 (0.33)	388	5.54	0.73
3.	Merhav, N.	Technion-Israel Institute of Technology, Haifa , Israel	67 (0.31)	1014	15.13	1.99
4.	Bar-Ilan, J.	The Hebrew University of Jerusalem, Jerusalem , Israel	66 (0.31)	1397	21.17	2.78
5.	Zainab, A.N.	University of Malaya, Kuala Lumpur, Malaysia	52 (0.24)	305	5.87	0.77
6.	Park, H.W.	YeungNam University, South Korea	48 (0.22)	631	13.15	1.73
7.	Ameen, K.	Punjab University, Lahore, Pakistan	43 (0.20)	191	4.44	0.58
8.	Huang, M.H.	National Taiwan University, Taiwan	43 (0.20)	353	8.21	1.08
9.	Abrizah, A.	University of Malaya, Kuala Lumpur, Malaysia	42 (0.20)	274	6.52	0.86
10.	Ho, Y.S.	Asia University Taiwan, Wufong, Taiwan	40 (0.19)	1819	45.48	5.98

9. Geographical distribution of Asian publications and its impact

The number and growth of LIS publications in five sub-regions of the Asia during 2002-2016is illustrated in Table 6. It was observed that Eastern Asia is

the most productive region which impressed 13788(64.05%) publications and 99607(60.78%) citations of total Asian pub./citations followed by South-Central Asia with 3818(17.74%) publications and 20025(12.22%) citations, Western-middle Asia with 2495(11.59%) publications and 31978(19.51%) citations, South-East Asia with 2145(9.96%) publications and 20675(12.62%) citations and Northern Asia with 429(1.99%) publications and 3458(2.11%) citations. Publications from Western-middle Asia received the highest average number of citations (12.83) per publication followed by South-East Asia with 9.64 ACP, Northern Asia with 8.06 ACP, Eastern Asia with 7.22 and South-Central Asia with 5.24 ACP.

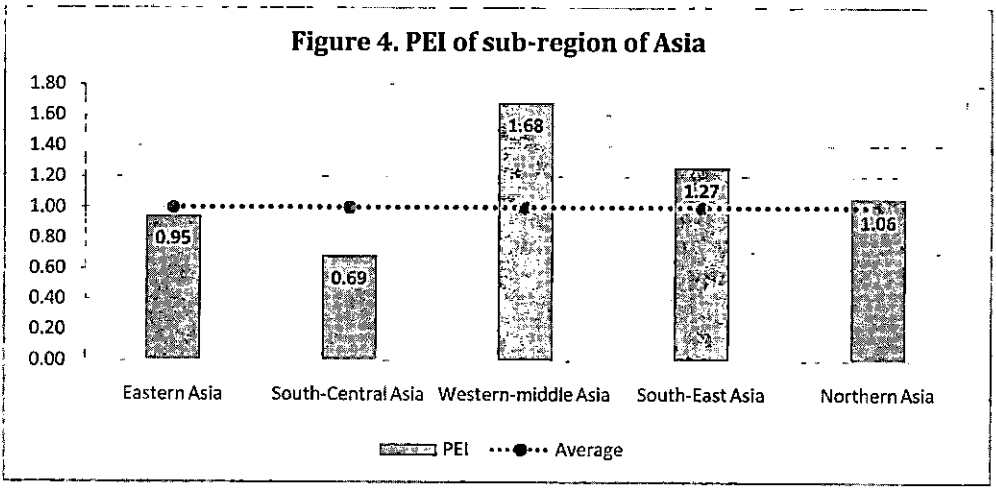
Table 6. Sub-region wise distribution of Asian publication

Asian sub-region	TNP	TNP %	TNC	TNC %	ACP	PEI
Eastern Asia	13788	64.05	99607	60.78	7.22	0.95
South-Central Asia	3818	17.74	20025	12.22	5.24	0.69
Western-middle Asia	2495	11.59	31978	19.51	12.82	1.68
South-East Asia	2145	9.96	20675	12.62	9.64	1.27
Northern Asia	429	1.99	3458	2.11	8.06	1.06

In terms of citation impact (PEI) Western-middle Asia impressed 19.51% of total Asian citation having highest PEI (1.68), South-east Asia gained 12.62% citation having PEI 1.27 value. Table 6 presents that Eastern Asia and South-central Asia had less than average Publication Efficiency Index value.

Figure 8 presents that Western-middle Asia, South-east Asia and Northern Asia have greater than 1 which indicates the impact of publications is more than the research effort.

Figure 4. PEI of sub-region of Asia



Highly prolific country of Asian

It has been seen in Table 91.73% of total Asian LIS publication published by following 10 countries. Table 7 presents that Peoples Republic of China was the highly productive country in Asia with 7822 (36.34%) publications, 33032 citations, 4.22 ACP and 0.55 RCI followed by. India 2360(10.96%), Taiwan 2217(10.30%), South Korea 1477(6.86%) and Japan, Singapore, Hong Kong, Iran and Malaysia distributed less than 5 of total Asian papers. Taiwan, South Korea, Singapore, Israel, and Hong Kong have more than average ACP and RCI while remained countries have less than average value.

Table 7. top 10 prolific countries

S.N.	Country	TNP (%)	TNC(%)	ACP	RCI
1.	China	7822(36.34)	33032(20.16)	4.22	0.55
2.	India	2360(10.96)	12999(7.93)	5.51	0.72
3.	Taiwan	2217(10.30)	23930(14.60)	10.79	1.42
4.	South Korea	1477(6.86)	19376(11.82)	13.12	1.72
5.	Japan	1353(6.29)	9611(5.86)	7.10	0.93
6.	Singapore	1062(4.93)	13783(8.41)	12.98	1.71
7.	Israel	1049(4.87)	21504(13.12)	20.50	2.69
8.	Hong Kong	892(4.14)	13344(8.14)	14.96	1.97
9.	Iran	828(3.85)	4602(2.81)	5.56	0.73
10.	Malaysia	686(3.19)	4003(2.44)	5.84	0.77
		19746(91.73)	156184(95.30)	7.61*avrg	1.00 avrg

10. Post prolific institutes/colleges/universities

Table 8 reveals that top 10 productive institutes of Asia in which Nanyang Technological University, Singapore contributed highest 477(2.22%) followed by Chinese Academy of Sciences, Beijing, China 453(2.10%), National University of Singapore 405(1.88%). Seven institutes out of ten have more than average CAI and RCI values.

Table 8. top 10 prolific journals

S.N.	Institute	TNP (%)	TNC	ACP	RCI
1.	Nanyang Technological University, Singapore	477(2.22)	5222	10.95	1.44

2.	Chinese Academy of Sciences, Beijing, China	453(2.10)	3956	8.73	1.15
3.	National University of Singapore, Singapore city, Singapore	405(1.88)	6465	15.96	2.10
4.	Wuhan University, Hubei, China	388(1.80)	2249	5.80	0.76
5.	National Taiwan University, Taiwan	356(1.65)	3367	9.46	1.24
6.	Technion - Israel Institute of Technolog, Haifa, Israel	337(1.57)	12282	36.45	4.79
7.	City University of Hong Kong, China	298(1.38)	4448	14.93	1.96
8.	University of Malaya, Kuala Lumpur, Malaysia	259(1.20)	1283	4.95	0.65
9.	National Chiao Tung University Taiwan, Taiwan	243(1.13)	2184	8.99	1.18
10.	Dalian University of Technology, Liaoning, China	234(1.09)	1232	10.95	0.69

11. Most prolific journals

Table 9 presents that 4181(19.42%) of total publications were published in Journal of Information and Computational Science which gained 0.94 per papers citation with 0.12 RCI. Followed by IEEE Transactions on Information Theory with 1900 publication 21.61 ACP and 2.84 RCI, Scientometrics with 1131 publication, 10.71 ACP and 1.41 RCI, Journal of Information Science and Engineering with 1054 publication and 3.68 ACP, 0.48 RCI. Remained journals produced less than 1000 papers.

Table 9. top 10 prolific journals

S.N.	Journal Name	TNP (%)	TNC	ACP	RCI
1.	Journal of Information and Computational Science	4181(19.42)	3939	0.94	0.12
2.	IEEE Transactions on Information Theory	1900(8.83)	41067	21.61	2.84
3.	Scientometrics	1131(5.25)	12152	10.74	1.41
4.	Journal of Information Science and Engineering	1054(4.90)	3879	3.68	0.48
5.	Lecture Notes in Control and Information Sciences	620(2.88)	1077	1.74	0.23
6.	Journal of Chemical Information and Modeling	602(2.80)	10106	16.79	2.21

7.	Electronic Library	422(1.96)	2575	6.10	0.80
8.	Information Processing and Management	410(1.90)	6857	16.72	2.20
9.	Journal of Digital Information Management	378(1.76)	395	1.04	0.14
10.	International Journal of Geographical Information Science	373(1.73)	5674	15.21	2.00

12. Conclusion

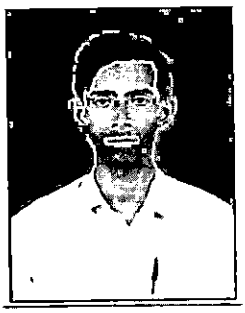
The annual growth rate fluctuated during the period of study, though the output as seen, in the early stage the quantity of scientific publications were less but it increased gradually even though there are ups and drop downs in few years and 2015 is the year which possess highest number of articles of the study period. Shamai, S was the most prolific author and he also has got the highest CPP and RCI. More than half 91.73% of total papers were published in 10 journals. Eastern Asia is the highest productive region of Asia continents and Nanyang Technological University, Singapore was the most prolific institute of Asia. Scholarly impact of double and multi-authored publications is more effective than others.

REFERENCES

1. Alireza, Noruzi and Mohammadhiwa, Abdekhoda. (2014). Scientometric analysis of Iraqi-Kurdistan universities' scientific productivity. *The Electronic Library*, 32 (6), 770-785.
2. Yi, Yong. Qi, Wei and Wu, Dandan. (2013). Are CIVETS the next BRICs? A comparative analysis from scientometrics perspective. *Scientometrics*, 94, 615-628.
3. Ajiferuke, I. Burrel Q & T ague, J. (1988). Collaborative coefficient: A single measure of the degree of collaboration in research. *Scientometrics*, 14(5-6), 421-33.
4. Sivakumaren, K Set. al. (2011). Research trends in library and inf ormation science in Tamil Nadu: a study. *International Journal of Current Research*, 3 (12), 373-376.
5. W, W Hood and C S Wilson. (2001). The literature of bibliometrics, scientometrics, and informatics. *Scientometrics*, 52(2, 291–314.

6. Nagpaul, P.S. (1985). Contribution of Indian universities to the mainstream scientific literature a bibliometric assessment. *Scientometrics*, 32, 11-36.
7. Garg, K.C. and Padhi, P. (2002). Scientometrics of laser research in India during 1970-1994. *Scientometrics*, 55(2), 215-241.

Authors Profile



Mr. Vinod Kumar Gautam is a research scholar in the Department of Library and Information Science, Banaras Hindu University, Varanasi. He contributed more than five journal articles and attended more than four conferences/seminars. His area of interest are: Bibliometrics and scientometrics.

Questioning The LIS Curriculum: Factors That Cannot Be Ignored

Deepthi
Assistant Librarian, College of Forestry, Sirsi – 581401, (Karnataka),
E-mail: deepthi.k67@gmail.com

P. G. Tadasad
Professor and Chairman, Department of Library and Information Science, Akkamahadevi Women's University, Vijayapura -586105, (Karnataka), E-mail: pgtadasad@gmail.com

Abstract: The quality of LIS curriculum is in question as it has failed to produce 'industry ready products'. There are number of factors that cannot be neglected in designing the curriculum. An effort is made in this paper to identify and deliberate on those factors that required fair consideration. No uniformity in curriculum, the very nature of discipline, present job market and employer's expectations, rapid technological changes, objectives of LIS education, nature and extent of contents to be covered in the curriculum, etc. have many implications. Observes that the Choice Based Credit System introduced by the UGC suits such a requirement to fulfil employer's expectations. Suggests to initiate a systematic process to revise the curriculum by interacting with industry, research bodies and the civil society. Concludes that the curriculum should enhance employability and advises LIS educators to produce the manpower required to manage the future libraries with a well-suited curriculum.

Keywords: LIS education; LIS Curriculum; Employer's expectations; Job Market

1. Introduction:

The quality of Library and Information Science education offered in the country is being questioned by the stakeholders on the grounds that the present curriculum has failed to produce 'industry ready products'. They feel that a gap exists between their (employers) expectations and the end products (LIS graduates). A retrospective search on LISA and LISTA show that a significant amount of literature is published on Library and Information Science, of which a major share goes to LIS curriculum. Virtually the subject 'LIS curriculum' has generated lots of discussion on different aspects from all the stakeholders be it is students or employers' or fresh recruitees. From the published literature it can be interpreted that LIS curriculum needs to be strengthened and updated to meet the employer's expectations and also to produce employable graduates to practice librarianship. There are number of factors that cannot be neglected in designing the curriculum. An effort is made in this paper to identify and deliberate on those factors that required fair consideration.

2. Review of literature:

According to Dali and Caidi (2016) disconnect exists in how the goals of LIS education are seen by certain groups of practitioners, students and faculty members. Goodsett and Koziura (2016) notice growing sense of frustration among new LIS graduates who struggle to gain employment. Kawooya (2016), Pedzisai and Mutula (2016) claim that the LIS schools are not producing industry ready graduates. On the basis of a study of fresh LIS graduates Yadav, Gohain and Rekha (2016) conclude that they are not satisfied with the curriculum. Singh and Vorbach (2017) notice the existence of curriculum gap. Low satisfaction with the curriculum is also observed by Wei and Gathegi (2014) in China. There are many more such studies that put it on curriculum for not keeping pace with the practice. Hopkinson and Zargaryan (2009) observe that the existing curricula are in their form, content and teaching approaches still based on the practices of yester year libraries. But "there is a substantial room for improvement" says Cherry, Freund and Duff (2013) based on a survey of students in Canada.

Improvement is possible if one can identify what is distinctive about LIS curriculum and what are the factors that can never be neglected.

3. No uniformity in curriculum:

Though the LIS education in India is more than hundred years old, the basic objective of LIS education has not changed - to prepare the LIS students for various library activities and also to provide skilled human resources at different levels to manage different types of libraries in the contemporary society. An analysis of the vision, mission statements by Tadasad (2013) reveal that each Post Graduate department has a different vision statement and mission statements and the expected goals are diverse in nature to accomplish. The contemporary LIS curriculum offered by various universities and institutions reflect the views and opinions of different Boards of Studies to maintain the standards as prescribed by the Committees constituted by UGC. – the latest being the one submitted in 2001 known as Model Curriculum in Library and Information Science.

The Model Curriculum is already more than a decade old. Joginder Singh and Shahid (2010) report that the model curriculum was unfortunately not implemented in its true spirit by the universities including the previous reports as "universities are autonomous institutions and have their own Board of Studies" comments Kumar (2004). Hence there is no uniformity in the curriculum prescribed by universities with few having very advanced syllabi and few having completely outdated syllabi. The CBCS pattern prescribed the UGC may solve the

problem of structure of curriculum but there needs to be uniformity regarding the contents to be included in the curriculum.

4. Nature of the discipline:

Library and Information Science as a discipline is multi-disciplinary in nature that draws much from different disciplines such as Information Technology, Management, Information Science, Sociology and Psychology, Law, Economics, Statistics, Computer Science and the like. Of the entire disciplines one can see the tremendous influence of IT and Computer Science on Library and Information Science. It is quite but natural that every discipline grows owing to different modes of formation of subjects and new developments will occur in every subject. But it is not necessary that any development in these cognate subjects should find place in LIS as a discipline. The influencing disciplines should not shadow the originality of the LIS discipline as the discipline itself may lose its identity. It is also true that if influencing disciplines are not given due emphasis then the LIS discipline might lose its relevancy. Ranganathan's APUPA pattern will surely give guidelines in deciding the relevancy and adequacy of new developments in other disciplines in the LIS domain.

5. Job market and employers' expectations:

The academic libraries and in particular the college libraries and school libraries dominate the segment of job market within the jurisdiction of that University which produces LIS graduates. University libraries and public libraries also absorb a good number of LIS graduates. But the magnitude of recruitment is not very large. The corporate sector since the last few years is absorbing LIS graduates but again the magnitude and mode of recruitment is unknown as these organizations follow different modus operandi for recruitment. R & D organizations, industrial establishments and Government departments together have a capacity to recruit small percentage of LIS professionals.

An analysis of the employers' expectations from the LIS professionals by Deepthi and Tadasad (2010) reflected through job descriptions reveal that the employers do not have any such specific requirements except that they should have some kind of computer knowledge with a post-graduate degree in LIS. Without knowing the actual employment capacity of the profession and true workforce needs and mobility in the profession the LIS departments are producing graduates who can get job of any cadre in any type of library. In fact the departments neither know whom they have to produce nor for whom they have to produce. Tadasad (2013)

has found that a majority of P G Departments have not specified the student learning outcomes. Without this framework the departments have a curriculum that can satisfy the common minimum requirements of all types of libraries.

The job market is basically domestic in nature with a significantly very low proportion finding jobs in Gulf countries. The market is expected to absorb a large number of fresh graduates in traditional libraries set up particularly in University and Public libraries as many posts at entry level and higher levels falling vacant.

6. Technological changes:

Technology push is controlling the profession and no one can imagine how LIS discipline looks without the ICT. A cross section among LIS professionals feel that ICT and LIS are almost synonymous and that each and every development of ICT should find a place in LIS curriculum. There is mixed opinion on the inclusion of ICT components in the LIS curriculum. India has the best suited curriculum with orientation to technology applications among the developing nations writes Asundi and Karisiddappa (2007) but Varalaxmi is not happy with the present scenario as situation is not encouraging (2009). This is an opportunity for the LIS educators to take advantage of the opportunities presented by the ICT and expand their boundaries. Hence, ICT changes need to be incorporated in the LIS curriculum.

7. Other Factors:

The major objective of LIS departments as Ramesh Babu (2007) puts it is to groom LIS graduates in the philosophy, knowledge and professional values of librarianship as practiced in the libraries who can work in any type of library. In simple words the graduates should be ready to practice librarianship. But the complaint is that the so called graduates are not ready for their attributed roles. The stakeholders particularly employers refer them as 'they are not employable' and put the blame on LIS curriculum.

Here the question is: why the graduates are not employable that means why they haven't come up to the expectations of the employers. The employers want industry ready graduates. 'Industry ready graduates" means those graduates who are able to work productively from day one. These graduates are supposed to develop relevant knowledge, intellectual capacity and professional experience they need for their careers. Curriculum is a tool that helps them to become industry ready graduates.

As the graduates are not meeting the expectations of the employers it can be interpreted that the curriculum is not helping them to develop relevant knowledge, intellectual capacity and professional experience. In this way , 'yes' it is true that the curriculum has failed in its responsibility as its products – the LIS graduates cannot come up to the expectations of the employers.

There is a greater responsibility on the curriculum to connect the graduates to their attributed roles to enter the job market. It is also true that over the years' library practices have changed due to adoption of new tools and technologies. But it is a dire necessity to connect LIS education with the practice of librarianship. The employers want the fresh recruitee to discharge the duties assigned to him/her. The problem with the fresh recruitee is that they can't connect what is taught to them in the P G Departments with the work though they had studied the concepts and passed the course and also the program quite successfully.

To put it in more simple words, the employer wants the newly recruited either to procure books or procure e-resources or subscribe to a journal or search webOPAC or classify and catalogue a book using a particular code or schedule or search a database or search few web resources or update accession register or send few official letters to vendors/users/higher authorities, the newly recruited if cannot perform the responsibility will be surely be termed as a person either unfit to the market or unemployable or not industry ready. It is because of lack of hands – on experience with the routine library practices.

There is a need to develop required technical skills among the graduates. The curriculum should help them in developing required skills and competencies to practice librarianship besides understanding the philosophy and theory of the discipline. This is a very delicate issue as to achieving a balance between theory and practice. Since it is a professional course and one is expected to provide services to the users of information driven society, the curriculum should highlight on the professional practices rather than the theoretical perspectives (though of significance) to maintain the relevancy between curriculum and practice.

Curriculum should focus on preparing professionals who can work in hybrid libraries and who are also capable of handling electronic information, web technologies and ICT tools. Of course the curriculum should reserve its traditional core values but provide emphasis on emerging technologies. In fact the curriculum should be re-designed with due consideration to employers needs and also on accepted best practices. It is high time to identify the accepted practices in different types of libraries and juxtaposition them with the contemporary society. Once it is done the gaps, overlaps and obsolete or outdated contents will be identified. The gaps can be filled; the overlaps and outdated contents can be removed.

Those who advocate filling the gaps suggest including each and every new development. But this is practically impossible. While adding something new to the curriculum care should be taken to remove the outdated. Otherwise the curriculum will become swollen. It is always better to have leaner and fitter curriculum.

The contemporary LIS curriculum concentrates more on theoretical issues and hence is ending up with graduates who can perform better in hypothetical and idealistic conditions. One thing needs to be understood here that the MBBS or BE/B Tech programs lay too much emphasis on practicum. The hospitals attached to medical colleges become practically their laboratories and they get practical experience in real settings. On the other hand the P G Departments functioning in different universities do not make use of the university library leave apart the other types of libraries.

There are virtually no Departments that have Practicum component for one of the most important courses like 'Management of Libraries and Information Centers'. The course on 'Information sources' also does not have practicum component. So is the case with courses on 'Classification and Cataloguing' where in students will do practicum in an artificial setting. Instead this course should be integrated into the library real setting and students should classify and catalogue the books acquired by the library.

Hands on experience with library automation softwares and other DL softwares, and Internet have many limitations owing to infrastructure basically. Digital Libraries, Institutional repositories, Knowledge Management, web technologies, web 2.0 tools presently constitute the curriculum as units of various courses. Instead these need to be studied as full length courses. Universities have started introducing them in the curricula but again owing to availability of infrastructure and expertise the process is bit slow. As such there is little variation among the departments.

Emphasis on Internship and mentoring will promote currency in the field, self-awareness and also it reflects the practice. To make internship and mentoring a successful one, linkages with different types of libraries including the university library will provide an opportunity for the LIS students to get practical training and exposure to workplace environment and help in producing employable graduates. The internship should be of three to four months duration and it will provide an in depth training though not rigorous.

There is one more issue with regard to employability. The fresh LIS graduates being the first generation graduates in their family sometimes in their village, hailing from socio-economically weaker groups do not possess social and communication

skills. They also do not know how to present themselves. This phenomenon often leads to referring them as not fit to handle Cosmo-group of users. Hence the curriculum should also be integrated with personality development and communication skills aspects.

8. The CBCS:

The Choice Based Credit System introduced by the UGC has provision for hard core (mandatory), soft core (related courses to be chosen from a pool of subjects) and open electives (to be chosen from a pool of subjects offered by other departments). It is a very flexible structure to choose an active curriculum. It also has provision for Lecture, Tutorial and Practicum components in each course. The structure proposed by UGC if implemented properly may prove to be useful in designing a curriculum that can produce employable graduates as each course will have Theoretical and Practicum components along with tutorial component. The structure will also help in widening of LIS curriculum so as to enhance chances of job opportunities in related other careers. The structure has a provision for practitioner based learning and will for sure answer the questions raised by many on the pitfalls of curriculum.

9. The way out:

A systematic process should be followed in designing the curriculum to see to it that the vision and mission of the Department is reflected in the curriculum. The draft curriculum should be prepared by the course teachers on the lines of CBCS structure suggested by UGC and it should be finalized by the Department Council after inviting suggestions from the alumni, and their employers, and other stakeholders. The Curriculum so prepared shall be audited against the accepted best practices, employers expectations, recent trends in the field, students feedback and peers opinion. The P G Departments should interact with industry, research bodies and the civil society through interactions. The draft curriculum should be sent to all the BOS members in advance so that they can give their valuable suggestions.

The following strategies can be adopted while updating the curriculum and making it more relevant, effective in producing employable graduates.

- Invite critical comments on the suitability of existing curriculum from academic peers, national and international teaching fraternity, working professionals, and more specifically the employers

- Follow the guidelines issued by UGC and consider the model curriculum
- Due consideration to the syllabi prescribed for UGC – NET and SET examinations
- Consult the syllabus of leading universities in the country and also worldwide
- Involve working LIS professionals in the curriculum design process
- Lay more emphasis on Practicum and hands-on-experience components. Inculcate technical skills through practicum, projects and assignments
- Devise a formal mechanism to get feedback from students regarding curriculum
- Revise or update the curriculum at least once in three years

10. Conclusions:

It is true that the employers are not happy with the LIS graduates as they cannot function as expected by the employers. This is merely because of lack of technical skills and competencies. Hence it is required to include these components into the curriculum to produce employable graduates. Once the course is completed the graduates should have an ability to manage modern libraries and information centers from day one. The curriculum should enhance employability. If not the course will lose attraction and there will not be many takers.

The fifth law of library science says that 'Library is a growing organism'. Since the law advises the professionals to gear up for the future, a curriculum that helps to mould the knowledge, skills and competencies of the graduates is very much essential. Hence the LIS educators also have the responsibility to produce the manpower required to manage the future libraries with a well-suited curriculum.

References:

1. Asundi, A. Y and Karisiddappa, C. R (2007). Library and Information Science Education in India: International Perspectives with Special Reference to Developing Countries. ***DESIDOC Bulletin of Information Technology***; 27 (2), 5-12.

2. Cherry, Joan M; Freund, Luanne and Duff, Wendy M (2013). Students' perceptions of information programs in Canada, ***Journal of Education for Library & Information Science***, 54 (3), 174-190.

3. Dali, Kreen and Caidi, Nadia (2016). A two way street: Building the recruitment narrative in LIS programs, ***New Library World***, 117 (7/8), 499-539.

4. Deepthi and Tadasad, P G (2010). What do employers expect from LIS professionals?, ***Information Studies***, 16(3), 183-192.

5. Goodsett, Mandi and Koziura, Amanda (2016). Are library science programs preparing new librarians: Creating a sustainable and vibrant librarian community. ***Journal of Library Administration***, 56 (6), 697-721.

6. Hopkinson, Alan and Zargryan, Tigran (2009). Developing new Masters program on library and information science for the LIS faculties of Armenia, Georgia and Uzbekistan, ***Journal of Informatics & Librarianship***, 10 (1/2), 45-49.

7. Joginder Singh and Shahid, Syed Md (2010). Changing needs of Library and Information Science curricula in India, ***Library Philosophy and Practice***, 1-8.

8. Karisiddappa, C R (2001). Model Curriculum: Library and Information Science, New Delhi: UGC Kawooya, Dick (2016). Does Africa's LIS education address new forms of digital content and related right? ***Libri: International Journal of Libraries & Information Services***, 66 (2), 137-150.

9. Kumar, P S G (2004). S R Ranganathan Lecture, 2004. Nagpur: DLISC, Nagpur University, Nagpur Pedzisai, Katuli-Munyoro and Mutula, Stephen (2016), Library and Information Science education and training and employability skills in Zimbabwe, ***African Journal of Library, Archives & Information Science***, 26 (2), 131-144.

10. Ramesh Babu (2007). Trends, Challenges and Future of Library and Information Science Education in India. ***DESIDOC Bulletin of Information Technology***. 27 (5), 17-26.

11. Singh, Rajesh and Vorbach, James (2017). Re-inventing management education and training for information professionals, ***Journal of Education for Library and Information Science***, 58 (2), 94-105.

12. Tadasad, P G (2013). Future of LIS Education in India: Problems and Prospects, IN: Recent trends in Library and Information Science: A way forward for the future. Edited by Sangam S L and others, Bangalore, LIS Academy International, 217-228.

13. Varalakshmi, R. S. R (2009), Curriculum for Digital Libraries: An Analytical Study of Indian LIS Curricula. **D-Lib Magazine,** 15 (9/10), 31-31.

14. Yadav, Akhilesh and Gohain, Rashmi and Rekha K S (2016). Preparing Indian Library and Information Science Professionals for employment in the digital age, ***SRELS Journal of Information Management,*** 53 (5), 1-11.

15. Wei, Jingzhu and Gathegi, John N (2014). Curriculum satisfaction among library and information science graduates in China: An exploratory survey, ***International Information and Library Review,*** 46 (1/2), 11-20.

Authors Profile



Prof. P. G. Tadasad, presently working as Professor and Chairman in the Department of Library and Information Science, Karnataka State Women's University, Vijayapura. He has published more than 180 research papers and edited eight books. 10 students have successfully completed their Ph D under his guidance and 4 are presently working under his supervision. He has served the university in various capacities as University Librarian, Director, PME Board and Nodal Officer for the University under NMEICT project, NAAC and KSET. He is the Special officer to the Vice Chancellor, Karnataka State Women's University, Vijayapura. He is a recipient of AG Motiwale Award for Young Professionals 2002 for Best Paper at 48th All India Library Conference of ILA held at NIMHANS, Bangalore, 2003. His area of interest include: User Studies, Knowledge Organization Systems, Digital Divide and Academic Libraries.



Dr. Deepthi is presently working as Assistant Librarian at the College of Forestry, Sirsi of University of Agricultural Sciences, Dharwad since April 2017.Earlier to that she was UGC-Post Doctoral Fellow under the mentorship of Prof. P G Tadasad at the Department of PG Studies and Research in Library and Information Science, Akkamahadevi Women's University, Vijayapura. She was awarded Gold Medal in MLISc and passed UGC NET exam (Jun 2012). She was recipient of RGNF, New Delhi for her PhD. She has published 36 articles and research papers in refereed national and international conferences and journals and presently has one SRP from the University. She is a member of ILA and American Library, Mumbai Her area of interest is Information Analysis Consolidation Repackaging Dissemination.

Research Dimensions on South China Sea

Dr. Rajesh Kumar Bhardwaj

Librarian
FORE School of Management New Delhi
rkdce2004@gmail.com

Abstract: The research quantum on the 'South China Sea' produced by confrontational countries has been investigated on various viewpoints. Subsequently, science funding of research has been analysed to reveal the policy of anxious countries. The study draws a comprehensive outlook on international perspective where dragon aggressively expanding its research arms which reflect its domination on the region. A comparative inquiry of research output and funded research with times growth during two eras, first from 1950 to 2005 and second from 2006 to 2015 have been presented. Indeed, China has emerged as a research trailblazer in the region. The findings revealed clear and convincing indicators that the research war will be more aggressive between China and US for their vested interests. Furthermore, inferences raised international anxiety on conflict and indicating compulsion of counter measure to compete with Chinese research forefront. The researchers, policy architects, politicians and decision makers always in search of such studies and this could be the best substantial ingredient to those who concern over the region.

Keywords: Conflicts review; International relations; Funding indicators; Research dimensions; Scientometrics; South China Sea; Chinese hegemony.

1. Introduction

The literature on theme has been searched in the context of scientometrics, informetrics and bibliometrics but none found relevant and valued which can be referred. The Scopus has been selected being the most reputed and exhaustive database indexes more than 22245 titles of major journals, and 5000 leading publishers nearly 88% leading research institutes Scopus data. It covers the funding information of research papers from 1975 from almost areas of knowledge and it provides appropriate tools to track, analyze and visualize research work. Science funding, considered as the key public resource in current academic community, has an irreplaceable function in research development, scientist training and cultural construction (Vardakas, et al., 2015). Various level science funding agencies of leading countries allocate an appropriate capital to gain a competitive edge over counterpart countries. Consequently, the large scale Scientometric analysis of funding and funded papers becomes a hotspot in recent years. For examples, the funding analysis in Nano research (Shapira, Philip and

Wang, Jue. 2010), the general study of natural science (Wang, et al., 2012) as well as social science (Xu, et al., 2015), and the interesting and in-depth observation in the specific field, mathematics (Zhou and Tian, 2014). Related to the science funding, an organization has a vital role in decision-making apart from the state policy. It is important for a research funding organization to ensure the quality of its peer review-based decision-making procedure. (Mutz, R., Bornmann, L. and Daniel, H.-D., 2015) The gravity of SCS affair has been acknowledged by international media and major platforms. The major leading countries of world have clear vision behind the science funding to support national interest research on identified thrust areas. Consequently, researchers identify current, realistic and exigency issues for investigations based on the importance of science funding. The tension in the SCS area has been well assessed and highlighted in The Age "SCS dispute is an intractable issue or 'wicked problem', having developed for decades, which presents a security risk to the region but for which no peaceful settlement is yet in sight. When the issue first arose, no-one could foresee the direction it would take. Today, the fact that tensions escalate from time-to-time to a level that may lead to military tension and deadly conflict, reflects the complexity of the issue and the strength of commitment by nations to protect their national interests". (Hartcher, Peter 2015). The SCS conflict has multi facet dimensions and there are two streams leading into the tensions and conflicts in the region. First, between China and the US in terms of interpretation of the UNCLOS and the right of the US Navy to operate freely in China's EEZ. Second, the disputes that China has with Vietnam, the Philippines and Malaysia and further north with Japan over the Senkaku (Diayou) islands and its efforts to step up control of the islands and features through physical occupation and denial of rights to opposite and adjacent states. However, at another level, the conflict arising from the conflicting sovereignty claims in the SCS has continued—indeed has intensified—with China leading the process by focusing on denying areas to rivals and constructing artificial islands on disputed features. (Joshi, Manoj 2016) The SCS dispute has adversely affected the relations of ASEAN countries and aggrieved the peace process. The diplomatic efforts made by ASEAN countries over several decades to formulate a peace settlement have not resulted in any significant developments, and it is a fact that even now ASEAN member-states have different views on the issues associated with the SCS. (Rustandi, Agus 2016)

The Chinese aggression has indicated its imperialism policy which made the SCS territory a war exercise field for international community. The strategic warning signals that indicate heightened risk of conflict include political decisions and statements by senior officials, official and unofficial media reports, and logistical changes and equipment modifications. In the contingencies described

above, strategic warning indicators could include heightened rhetoric from all or some disputants regarding their territorial and strategic interests. (Glaser, Bonnie S. 2015) An international tribunal ruling against the nine-dash line goes a long way toward offering a framework for a unified front against China, and that is something that worries Beijing, experts said. Such a decision could "give more hope to the Philippines and other Asian countries that claim territory in the South China Sea," according to Andrew Scobell, a political scientist at the Rand Corp. (Rosenfeld, Everett 2016) While, other confrontational countries except US are not as muscular to stand in front of China therefore China dictate them to bind in agreements or other way to resolve the conflict without losing its individual interests. The While the United States and China have both taken steps in recent weeks seemingly designed to generate at least a modicum of de-escalation, most observers believe that the SCS issue will figure prominently on the U.S.-China agenda (as well as on the East Asian and Southeast Asian foreign policy agendas) for years, if not decades, to come; and indeed, some regard the South China Sea as a crucible for possible major international conflict and even world war. (Firestein, David J. 2016)

The literature on other thrust areas, i.e., trade and economic aspects, political consequences and judiciary developments have been reviewed and relevant references have been included in the study. By assessing worldwide concerns on aggrieved situation, this study aligning with the concept has become extremely essential. The SCS is strategically, politically and internationally important which covers 200 small islands, reefs and sand banks where a vast amount of minerals, about 11 Billion barrels of oil, about 190 Trillion cubic feet of natural gas preserves and huge amount of hydrocarbons exists. (Zhou, 2015) It is the only way for the import of oil from central Asian states and is very important for countries of Asia-Pacific like Japan, South Korea and China from where about $5.3 Trillion (60%) of the total annual world trade passes through. The SCS has an economic and investment impact not only on local region but also on international altitude. Many industries in ASEAN are dependent on Chinese imports, meaning any stop in trade relations between the two would have an immediate effect. (Clarke, Marquise 2016)

The China National Offshore Oil Corporation has invested some $20 billion in attempting to prove its more optimistic estimate of 125 billion barrels of oil and five hundred trillion cubic feet of natural gas. (Fensom, Anthony 2016) The disputes involve both maritime boundaries and islands. There are several disputes, each of which involves a different collection of countries: Four of the ten states in ASEAN claim some or all of the land features known in the South China Sea as

the Spratly Islands, which China and Taiwan also claim. Viet Nam also claims the Paracel Islands along with China and Taiwan. (Fravel, M. Taylor 2014,)

Since 1947, the China has been claiming ownership on SCS that overlaps the exclusive economic zone claims of Brunei, Indonesia, Malaysia, the Philippines, Taiwan, and Viet Nam; propounded 'Nine-dotted line' map as substantiation and since then dispute aggravated. (Sato, K., 2013). It includes the maritime boundary along the Viet Namese coast between China, Taiwan, and Viet Nam; north of Borneo between China, Malaysia, Philippines, and Taiwan; in the waters north of the Natuna Islands between China, Indonesia and Taiwan; off the coast of Palawan and Luzon between China, the Philippines, and Taiwan. It also includes Maritime boundary, land territory, and the islands of Sabah, including Ambalat, between Indonesia, Malaysia, and the Philippines and Maritime boundary and islands in the Luzon Strait between the China, the Philippines, and Taiwan. Also covers Islands, reefs, banks and shoals in the South China Sea, including the Paracel Islands, the Pratas Islands, Macclesfield Bank, Scarborough Shoal and the Spratly Islands between China, Taiwan, and Viet Nam, and parts of the area also contested by Malaysia and the Philippines. (Baumert, Kevin and Melchior, Brian, 2014,)

The US has stood by its maneuvers, claiming that "peaceful surveillance activities and other military activities without permission in a country's Exclusive Economic Zone (EEZ)," is allowed under the convention. (*Lawrence, Susan V.; Lum, Thomas, 2011).*

China, Japan and ASEAN (Southeast Asia: Brunei, Burma (Myanmar), Cambodia, East Timor, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam) states have robust trade relations. The China-ASEAN trade relationship is especially strong. According to Asia Maritime Transparency Initiative (AMTI) and Center for Strategic and International Studies (CSIS) that the trade of $885.64 and $182.11 billion from China to ASEAN and Japan respectively; $1020 and $112.38 billion from ASEAN to China and Japan respectively; $129.88 and $102.88 billion from Japan to China and ASEAN respectively. (Robert D. Kaplan, 2015)

The core of the maritime disputes stems from China's increasingly strong assertion that it should control over 90 percent of the South China Sea. This runs directly counter to the claims of the Philippines and other Southeast Asian nations including Viet Nam, Brunei, Taiwan, and Malaysia (Interviews; Hayton, 2014). In 2014, China went so far as to set up an oil drilling rig within the territorial waters of Viet Nam causing major anti-Chinese riots in Viet Nam (Interviews). Following those events, the oil rig was eventually removed. (Geib, Peter and Pfaff, Lucie, 2016) The tensions resulting from the territorial and maritime jurisdictional disputes

between confrontational countries have for years dominated the headlines on the South China Sea and defined the lens through which the issue is seen. (Nguyen, Phuong, 2016)

China has become the chief trading partner with maximum countries in the region. As China becomes richer, it will become a market for the rest of Asia, just as the region will become a bigger market for China. In a way, Beijing is forging commercial agreements that enhance China's ability to influence the future global order (Bremmer, 2014/2015). The United States has significant political, security, and economic interests at stake if in case China does not slacken its ownership rights on SCS. (Bonnie S. Glaser, 2015) The United States of America's experts have conveyed their views that China is playing three types of wars, i.e., Psychological warfare; Media warfare; and Legal warfare in the region and the other counter partner China blames the United States of America to destabilize the region by providing back to Viet Namese perspective which is totally wrong. (Halper, Stefan, 2013)

The international arbitration tribunal, constituted under Annex VII to the United Nations Convention on the Law of the Sea ("UNCLOS"), issued its final Award on July 12th in the so-called "compulsory" arbitration instituted by the Republic of the Philippines against the People's Republic of China. The Philippines had sought rulings on a number of issues, including the source of the parties' rights and obligations in the South China Sea and the effect of UNCLOS on China's claims to historical rights within its claimed 'nine-dash line.' (Klein, Joseph 2016) The UN International Tribunal Hague court has ruled in favour of the Philippines in the case over SCS dispute and after refusing to accept the judgment by China; the area has become a flashpoint with perspective crucial global consequences. The tribunal's decision in opposition to the PRC could lead to the termination of UNCLOS by China, especially since Vietnam and Malaysia also may follow with further arbitration. For the same reasons, the likelihood of the ratification of UNCLOS by the United States is decreasing. If the PRC excludes itself from the Convention, that would represent a significant weakening of treaty norms of the international law of the sea. China has also reacted angrily to the ruling and this may lead to increased tension in the region. Incidents involving the Chinese and Philippine navies could happen, although it is less likely that U.S. ships exercising their freedoms and rights of navigation will be involved in those incidents. China's position is unchanging and its actions have deteriorated relations through a goal of fait accompli, especially its plans to establish an Air Defence Identification Zone covering the South China Sea. (Tarnogorski, Rafal 2016)

2. Methods

The Scopus, being the comprehensive database of the world's research output; largest abstract and citation database of peer-reviewed literature has been selected for the data collection. It has advanced features to track, analyze and visualize research. The outlines of research work have been set forth to ensure the study more focused, analytical and result oriented confined to confrontational countries concerned to SCS. It covered two eras, i.e., first from 1950 to 2005 and second from 2006 to 2015; Ten years from 2006 to 2015 progressive data with inputs of urgent factors to understand the trends and future perspectives. The keyword *"South China Sea"* under 'Article Title, Abstract, Keyword' option with aligned parameters have been used to fetch the statistical data sets. Furthermore, major objectives of the study have been listed by understanding the study concept, i.e., inventory of research output; periodical growth and geographical distribution and comparative statements. It also covers the science funding evaluation, indications on thrust areas and reflections on inferences for further debate. The fetched data sets in excel files have been filtered, sorted and presented in the form of textual, table, graph and figure at an appropriate place.

3. Analysis and Discussion

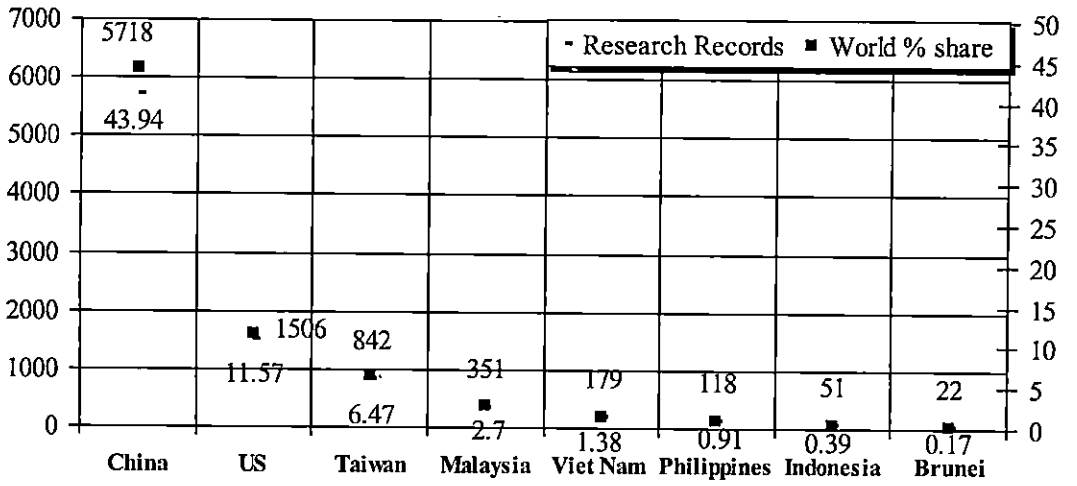
This study used Scientometrics analysis methods to analyse the literature and funding trends including funding ratio and countries indices. The results of the study revealed a certain trend in research and global funding by confrontational countries during the study period.

Table -1: Formulas used for calculations

F1	Funding %=	Country funding / Country records X 100	F2	World % share	= Country records / World records X 100
F3	Growth =Year records–Preceding year records		F4	Growth Times =	Year Growth / Preceding year records
F5	% Δ over year =	Yearly Δ of records / Previous year records X 100	F6	% of Records =	Era records / Country records X 100
F7	Growth Times=	First era records / Growth records	F8	R1 & R2 =	In order of % records
F9	R3 =	In order of Growth Times			

Figure -1 Research output and World % Share from 1950 to 2015

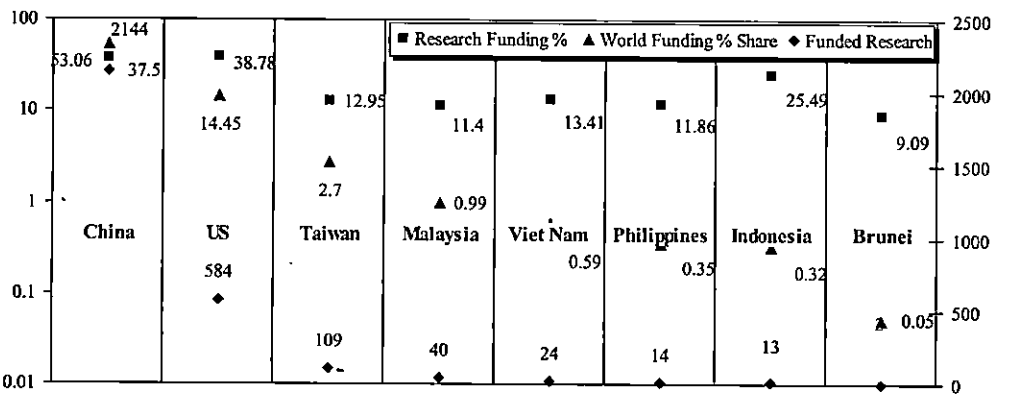
Figure -1 Research output and World % Share from 1950 to 2015



* World % Share - F2

The figure -1 shows total research outputs which have been counted as 13012 worldwide from 79 countries with an average of 164.70 during 65 years span with a yearly average of 200.18. China has been at the top in producing the highest numbers of research followed by US, Taiwan and Malaysia. China has contributed the highest world share with 43.94% followed by US with 11.57%, Taiwan with 6.47% and Malaysia with 2.70%. Brunei has produced the lowest number of research outputs.

Figure -2: Funded Research with Funding % with World Funding % Share from 1950 to 2015



* Research Funding % - F1; World Funding % Share - F2

Table 2: Research output with Growth, Growth Times and World % Share

Country	China			US			Taiwan			Malaysia		
1	2	3	4	5	6	7	8	9	10	11	12	13
Year	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times
2015	747	-8	-0.01	140	-28	-0.17	72	-3	-0.04	54	-3	-0.05
2014	755	117	0.18	168	34	0.25	75	2	0.03	57	13	0.30
2013	638	129	0.25	134	24	0.22	73	18	0.33	44	17	0.63
2012	509	20	0.04	110	-5	-0.04	55	2	0.04	27	-3	-0.10
2011	489	87	0.22	115	10	0.10	53	-22	-0.29	30	8	0.36
2010	402	51	0.15	105	30	0.40	75	26	0.53	22	7	0.47
2009	351	38	0.12	75	-14	-0.16	49	-12	-0.20	15	0	0.00
2008	313	77	0.33	89	25	0.39	61	17	0.39	15	2	0.15
2007	236	-23	-0.09	64	6	0.10	44	7	0.19	13	3	0.30
2006	259	-		58	-		37	-		10	-	
Total	4699			1058			594			287		
* World % Share	48.95			11.02			6.19			2.99		

Viet Nam			Philippines			Indonesia			Brunei			Total		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Records	Growth	Times	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times
16	-5	-0.24	8	-9	-0.53	5	2	0.67	3	-1	-0.25	1045	-55	-0.05
21	-8	-0.28	17	0	0.00	3	-2	-0.40	4	4	4.00	1100	160	0.17
29	13	0.81	17	10	1.43	5	-2	-0.29	0	-2	-2.00	940	207	0.28
16	3	0.23	7	-5	-0.42	7	4	1.33	2	2	2.00	733	18	0.03
13	-2	-0.13	12	7	1.40	3	-4	-0.57	0	-2	-2.00	715	82	0.13
15	4	0.36	5	1	0.25	7	4	1.33	2	0	0.00	633	123	0.24
11	1	0.10	4	2	1.00	3	1	0.50	2	2	2.00	510	18	0.04
10	3	0.43	2	-6	-0.75	2	1	1.00	0	-1	-1.00	492	118	0.32
7	3	0.75	8	1	0.14	1	0	0	1	1	1.00	374	-2	-0.01
4	-		7	-		1	-		0	-		376	669	1.15
142			87			37			14			6918		17.80
1.32			0.91			0.39			0.15			72.06		

* Research Growth -F3; Growth Times - F4; World % Share - F2

Figure -2 covered total funded researches and funding percentile and world funding percentage share worldwide during 1950 to 2015. The funded research records have been counted as 4041 worldwide from 79 countries with an average of 51.71 during 65 years span with a yearly average of 62.16. China has funded the highest number of research followed by US, Taiwan, Malaysia and Viet Nam, etc. The US has accelerated his funding and surprisingly maintained top position by funding the highest percentage of research followed by China, Indonesia, Viet Nam and Taiwan. In overall worldwide scenario, the China has contributed the highest world funding share with 53.06% followed by US with 14.45%, Taiwan with 2.70% and Malaysia with 0.99%.

Table -2 depicts the research counts 9600 from 75 countries with an average of 128 during the period where China stands at top having 4699 research counts with 48.95% followed by US having 1058 research counts with 11.02% and Taiwan having 594 research counts with 6.19%. China has sustained continued growth onward 2007 where rest of the countries having fluctuating figures. However, overall chronological growth have been observed onward 2007 except during 2015 where a slight fall is seen. China is far ahead than the other confrontational countries. Overall about ¾ share (72.06%) researches have been recorded from 2006-2015 during 10 years span period with 17.8% growth per year.

Figure -3: Periodic Research Growth from 2006 to 2015

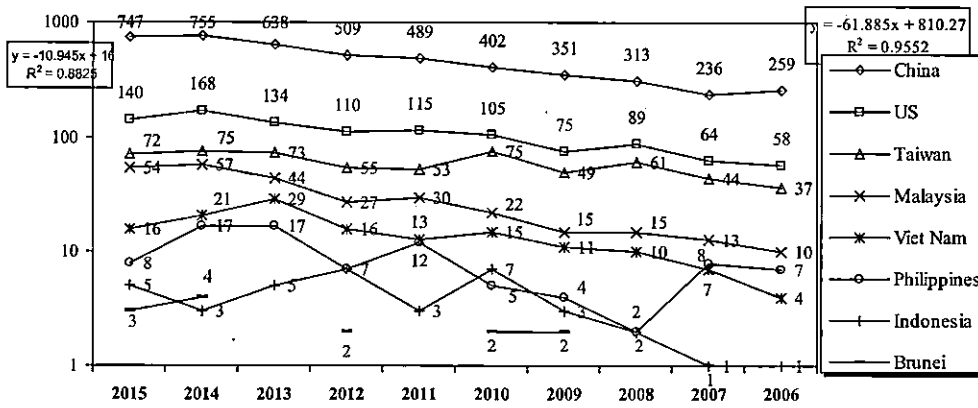
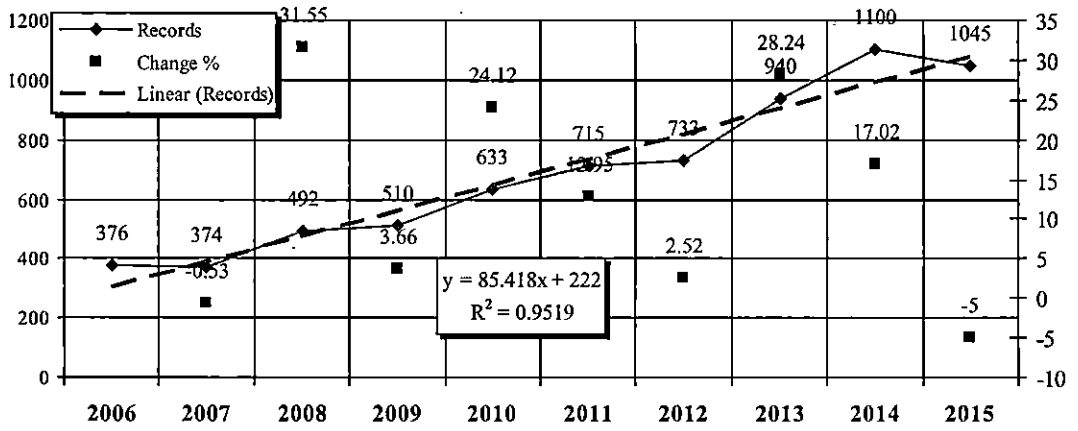


Figure -3 present the country research records in aforementioned legend box in decreasing order from China to Brunei. China has been declared undisputed leader in publishing the highest research counts on the theme. The US has positioned at second place followed by Taiwan, Malaysia and Viet Nam but these confrontational countries stays nowhere comparing to China. However, they proved their presence by producing few researches on the topic.

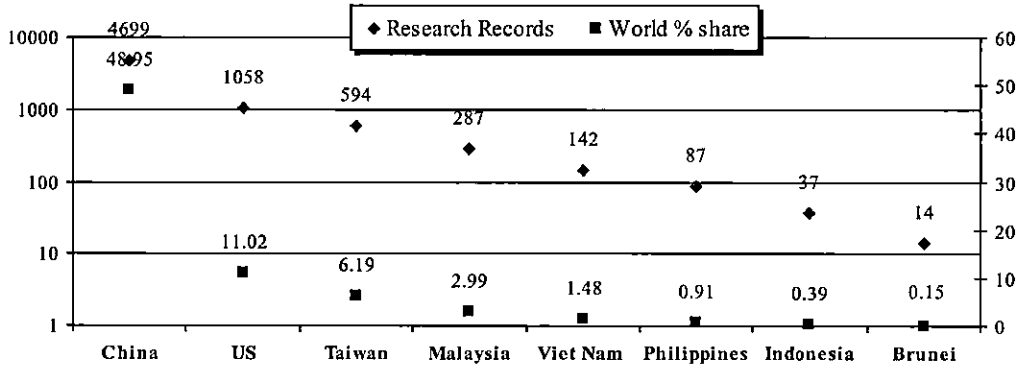
Figure -4: Periodic Research Growth Trend with % Change over year



* Change % over year - F5

Figure -4 depicts the chronological growth of research and yearly change occurred during the period. It also presents the trend line of growth and percentage of change over every year. It displays the equation and R-squared value on chart. The highest research occurred during 2014 followed by 2015 and 2013. The trend line highlighted the consistency in growth during the period except minor drop during 2007, 2009 and 2015. The overall growth recorded as 2.78 times and 273.93% during the period.

Figure -5: Country Research output and World % Share from 2006 to 2015



* World % Share - F5

Figure -5 represent the research records and world percentage share in decreasing order from China to Brunei. The China is far ahead in producing research

during the studied period. US have also produced good number of researches but about four times less than China. However, total output of other confrontational countries is about four times less than China but figure shows their active interest in the research.

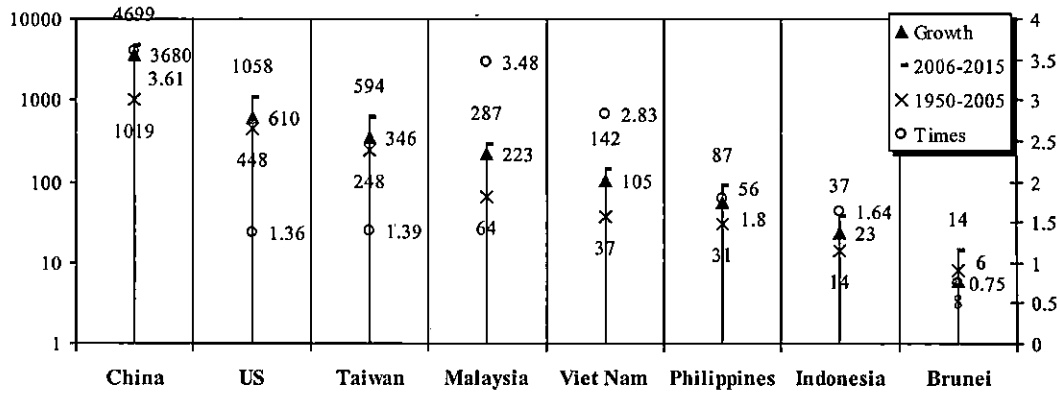
Table -3: Two Era's Comparative Growth with % of Records and Growth times

Country	Total Records	1950-2005			2006-2015			Growth		
		Records	%	R1*	Records	%	R2*	Records	Times	R3*
China	5718	1019	17.82	8	4699	82.18	1	3680	3.61	1
US	1506	448	29.75	2	1058	70.25	7	610	1.36	7
Taiwan	842	248	29.45	3	594	70.55	6	346	1.39	6
Malaysia	351	64	18.23	7	287	81.77	2	223	3.48	2
Viet Nam	179	37	20.67	6	142	79.33	3	105	2.83	3
Philippines	118	31	26.27	5	87	73.73	4	56	1.80	4
Indonesia	51	14	27.45	4	37	72.55	5	23	1.64	5
Brunei	22	8	36.36	1	14	63.64	8	6	0.75	8
Total	8787	1869	21.27		6918	78.73		5049	2.70	

* Growth times - F-7; R1 & R2- F-8; R3- F-9

Table 3 depicts two eras comparison research output from 1950 to 2005 and 2006 to 2015 for 55 years and 10 years respectively. It includes the research records along with the percentage, R-Ranking and growth times during aforementioned periods. During the first era, China has been at the top in producing the highest research but at the lowest place in ranking and contrary, Brunei has been at the bottom in producing the lowest number of research but obtained the highest place in ranking. The US has been at the second highest research producer at the second rank followed by Taiwan. During the second era, China has been again at the top in producing the highest research and also obtained top in ranking. US has been at the second position in producing number of research and surprisingly fallen at seventh in ranking. Considering the growth from first era to second ear, China has sustained the first position in research productivity and the ranking. Surprisingly, Malaysia, Viet Nam, Philippines, Indonesia and Taiwan have performed better than US which scored second to sixth rank respectively.

Figure -6: Two Eras Research output Growth Comparative statement.



In continuation to table 3 and figure - 6 presents the research growth and growth times. Surprisingly, Malaysia, Viet Nam, Philippines, Indonesia and Taiwan have performed better than US which scored second to sixth rank respectively. Overall, the second era of 10 years has produced 20 times high number of researches with an average of 692 counts per year as 78.73% share than first era of 55 years with an average of 34 counts per year as 21.27% share. Overall growth from first era to second era has been recorded as 5049 records with 270.14%.

The table 4 presents the country data year wise, i.e., funded research records, growth in funding research and times change over year. During the period 2919 research records have noted with an average of 291.9 every year. There are 4041 funding research records worldwide from 79 countries from 1950 to 2015, but the other hand 2919 funding research records worldwide from 8 countries from 2006 to 2015 which is about ¾ (72.23%) share of worldwide funding research output. The China has funded the highest number of researches followed by US Taiwan, Malaysia and Viet Nam and so on. The funding of research was very less till 2012 and onward 2013 it started increasing many folds. China and US have accelerated funding onward 2013. The overall highest growth was noted during 2013 and 2014 but a slight fall during 2015. There is no consistency in funding of research especially before 2012. Overall about ¾ share (72.23%) researches have been published from 2006-2015 during 10 years span period with 11.74% growth per year.

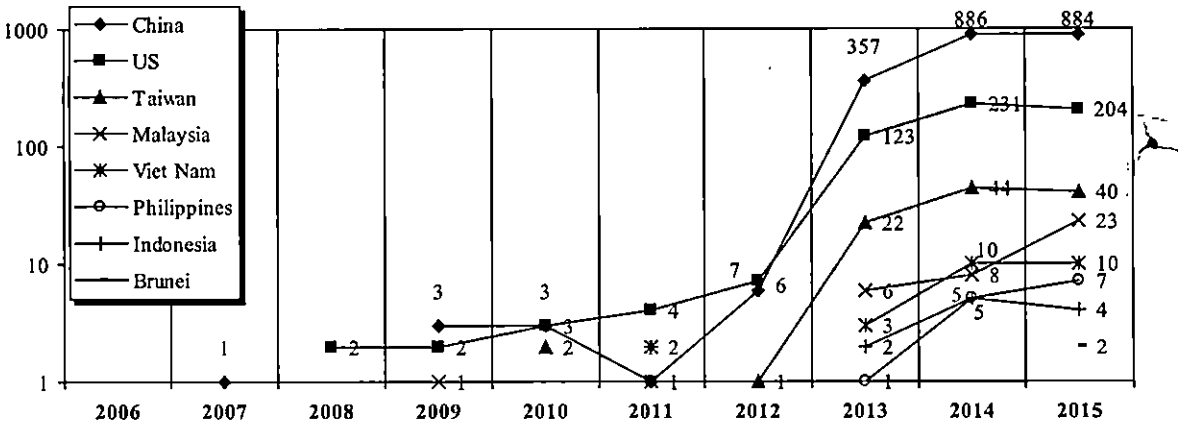
Table 4: Funded Research records, Periodic Growth; Growth Times and World % Share

Country	China			US			Taiwan			Malaysia			
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Year	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times	Records
2015	884	-2	-0.002	204	-27	-0.12	40	-4	-0.09	23	15	1.88	10
2014	886	529	1.48	231	108	0.88	44	22	1.00	8	2	0.33	10
2013	357	351	58.50	123	116	16.57	22	21	21.00	6	6	6.00	3
2012	6	5	5.00	7	3	0.75	1	1	1.00	0	-2	-2.00	0
2011	1	-2	-0.67	4	1	0.33	0	-2	-2.00	2	2	2.00	1
2010	3	0	0.00	3	1	0.50	2	2	2.00	0	-1	-1.00	0
2009	3	3	3.00	2	0	0.00	0	0	0	1	1	1.00	0
2008	0	-1	-1.00	2	2	2.00	0	0	0	0	0	0	0
2007	1	1	1.00	0	0	0	0	0	0	0	0	0	0
2006	0	-		0	-		0	0		0			0
Total	2141			576			109			40			24
World Share %	52.98			14.25			2.70			0.99			0.59

Viet Nam		Philippines			Indonesia			Brunei			Total		
15	16	17	18	19	20	21	22	23	24	25	26	27	28
Growth	Times	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times	Records	Growth	Times
0	0.00	7	2	0.40	4	-1	-0.20	2	2	2.00	1174	-15	-0.01
7	2.33	5	4	4.00	5	3	1.50	0	0	0	1189	675	1.31
3	3.00	1	1	1.00	2	2	2.00	0	0	0	514	500	35.71
-1	-1.00	0	-1	-1.00	0	-2	-2.00	0	0	0	14	3	0.27
1	1.00	1	1	1.00	2	2	2.00	0	0	0	11	3	0.38
0	0	0	0	0	0	0	0	0	0	0	8	2	0.33
0	0	0	0	0	0	0	0	0	0	0	6	4	2.00
0	0	0	0	0	0	0	0	0	0	0	2	1	1.00
0	0	0	0	0	0	0	0	0	0	0	1	1	1.00
-		0	-		0	-		0	-		0	1174	41.99
		14			13			2			2919		1174
		0.35			0.32			0.05			72.23		

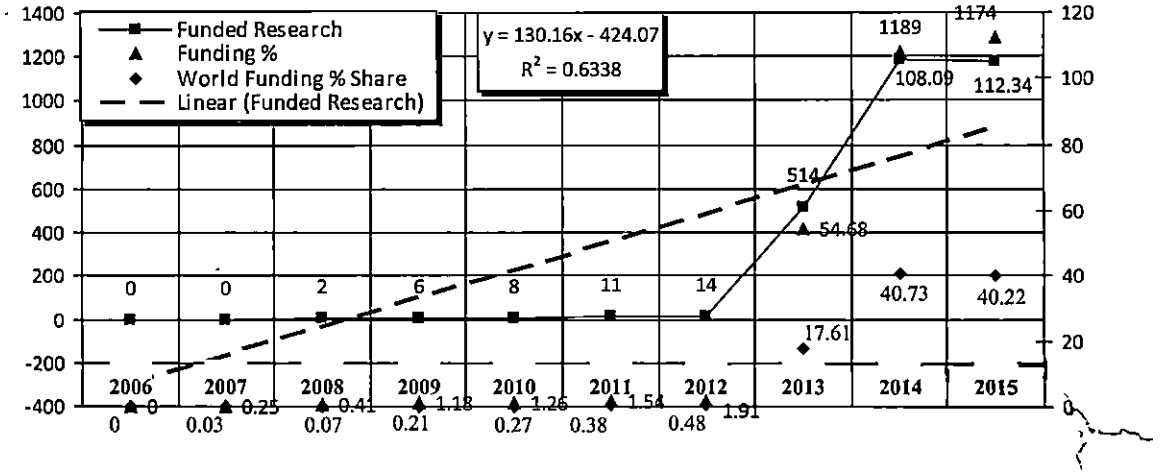
* Periodic Growth - F3; Growth Times - F4; World % Share - F2

Figure -7: Country wise Periodic Funding Growth from 2006 to 2015



The figure -7 shows the country funded research records in which China again has been declared undisputed leader in funding research counts on the theme. There was no funding during 2006, only one during 2007 and highest funding noted during 2014. The US is little ahead during 2011 and 2012 than China and other countries. Overall US has sustained second position but other confrontational countries stays nowhere; however they funded few researches on the topic.

Figure -8: Funded research with Funding % and yearly World Funding % Share



* Research Funding % - F1; Yearly World Funding % Share - F2

This figure describes the number of funding research, funding %, world funding % share, linear graph, trend line and annual funding growth and also displayed equation and R-squared value on chart. The maximum research has been funded during 2013 to 2015. The highest research has been funded as 1189, 1174 and 514

against 1100, 1045 and 940 research during 2014, 2015 and 2013 respectively and at the other side zero funding has been recorded against 750 research during 2006 and 2007. It is very interesting fact that during 2014 and 2015, the funding quantity is more than the number of research that means, authors might have obtained multi funding from different organisations for the same researches. The funding of research does not sustain consistency and trend shows the high growth onward 2013. The total funded research records worldwide have been counted as 2919 against 6918 with a consolidated 42.19% from 79 countries with an average of 36.95 during 10 years span with a yearly average of 292. The records in the figure show a negative trend in funding of research during 2006 to 2012.

Table -5: Two Era's Comparative Funded Research, with % of Records and Growth Times

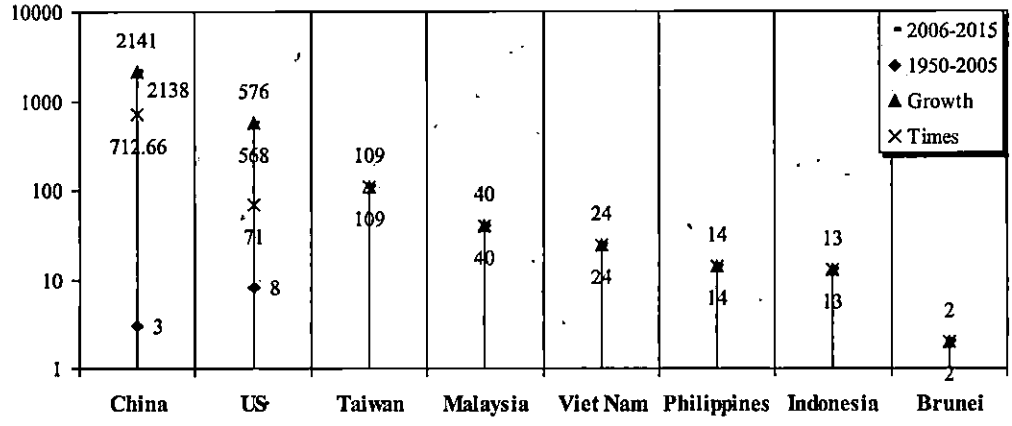
Country	Total Records	1950-2005			2006-2015			Growth		
		Records	%	R1*	Records	%	R2*	Records	Times	R3*
China	2144	3	0.14	2	2141	99.86	2	2138	712.66	1
US	584	8	1.37	1	576	98.63	3	568	71.00	2
Taiwan	109	0	0	3	109	100.00	1	109	109	3
Malaysia	40	0	0	4	40	100.00	1	40	40	4
Viet Nam	24	0	0	4	24	100.00	1	24	24	5
Philippines	14	0	0	4	14	100.00	1	14	14	6
Indonesia	13	0	0	4	13	100.00	1	13	13	7
Brunei	2	0	0	4	2	100.00	1	2	2	8
Total	2930	11	0.38		2919	99.62		2908	264.36	

* Research funding % - F6; Growth Times - F7; R1 & R2 - F-8; R3 - F-9

The table -5 provides two eras comparison statement of funded research for 55 and 10 years. It includes the funded research records, growth with growth times and (R) ranking. During the first era, US have been at the top in funding the highest number of research at third rank with 1.37% percentages followed by China and Taiwan at first and second rank respectively. Brunei, Indonesia, Philippines, Viet Nam, Malaysia and Taiwan have not funded even a single research. During the second era, China have been at the top in funding the highest number of research but at second rank with 99.86 percentages followed by US with third rank. Taiwan, Malaysia, Viet Nam, Philippines, Indonesia, Brunei have funded research

in decreasing order. The funding of research in second era is 264.36 times higher than first era.

Figure -9: Two Eras Comparative Funded Growth.



In continuation to table 5; the figure 9 shows the comparison statement of Two Eras funded research, growth and growth times. Overall, the first era of 55 years has produced 1460 times less counts of research every year with an average of 0.2 counts per year as 0.38% share compare to second era of 10 years with an average of 692 counts per year as 99.62% share. Overall growth from first era to second era has been recorded as 2908 records with 264.36%. Considering the growth rate from first era to second ear, China has sustained the first position and the ranking followed by US, Taiwan, Malaysia, Viet Nam in order.

Table -6 : Top Ten highest Research producer Organisations from 1950-2015

Organisations	Records
South China Seas Institute of Oceanography Chinese Academy of Sciences	841
Chinese Academy of Sciences	634
State Oceanic Administration China	417
China National Offshore Oil Corp	379
Ocean University of China	354
Institute of Oceanology Chinese Academy of Sciences	324
University of Chinese Academy of Sciences	287
Sun Yat-Sen University	281
Xiamen University	238
Tongji University	234

This table presents the top ten organisations which have produced the highest research counts on the topic during the period. All above-listed organisations are from China that means Dragon research institutions have left no space to other country research organizations. The aforementioned fact is frightening and forces us to rethink about the research carried out in the region, is the domination of one country on the entire region acceptable?

Figure – 10: Research Dispersion by Subject Area from 1950-2015

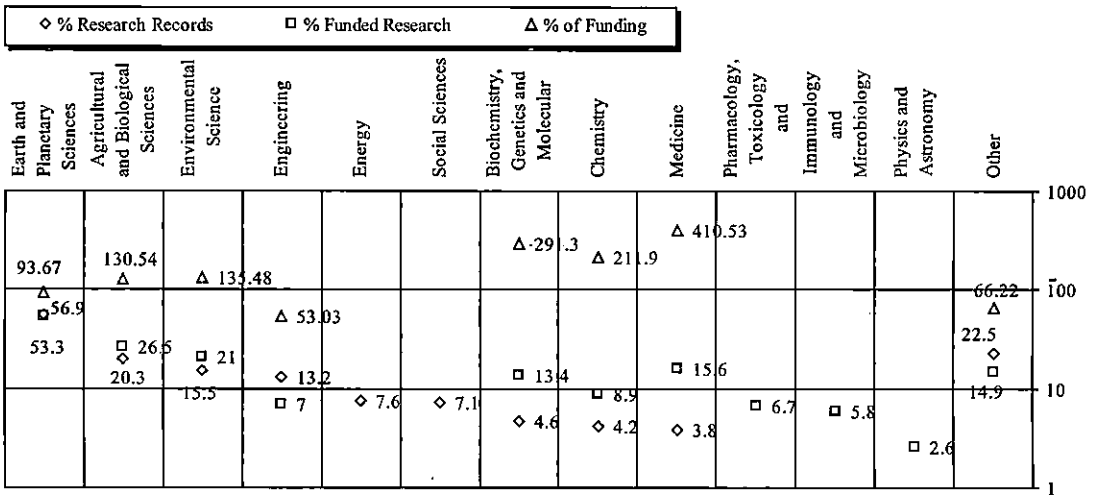


Figure 10 present the research output in various subject areas and funded research records. The highest research produced and funded in Earth & Planetary Sciences followed by Agricultural & Biological Sciences and Environmental Science. Research in Medicine has the least output followed by Chemistry and Biochemistry, Genetics & Molecular Biology. Research funding in Physics & Astronomy has the lowest figure followed by Immunology & Microbiology and Pharmacology, Toxicology & Pharmaceutics. Surprisingly where Medicine has the least output in research has the highest in the percentage of funding with 411% means got multi-sourced funding more than four times followed by Biochemistry, Genetics & Molecular Biology and Chemistry.

4. Concluding remarks

The research quantum on SCS produced by confrontational countries have been analysed. The comparative growth of research and funding search during two eras have been examined. An analysis revealed that the China has been aggressively conducting and funding research on the disputed area and statistics established

that China is an undisputed research leader in the region. Substantially, it is a matter of further enquiry in case a nation execute an aggressive policy of research funding on focused field only to take lead against counterpart nations, then it could be a symptom of preliminary war strategy against these nations. The study has presented tangible facts and figures to instigate confrontational countries to accelerate the research not only to counter the Chinese research aggression but to save their individual interests. In this sophisticated age, research can be the best arm to defend the counter attack and best tool not only to sustain the power balance and equal rights on natural resources but also avoid the future consequences such international conflicts. Advances in research undoubtedly enhance the moral of research fraternity and stimulate their country to counter the muscle power of unethical forces, therefore, funding policies for result oriented research should be liberally promoted.

The funding of research has been accelerated onward 2013 since the conflict continuously aggravated which indicated the policy of funding research is consistent with changing international politics over the dispute. An average annual output of funding research during 55 years from 1950 to 2005 is 0.2 counts and during 10 years from 2006 to 2015 is 290.8 counts with 14540 times higher growth annually. The USA being a world leader scored second position as a research producer and research funding country. The trend onward 2013 for research quantum and research funding indicated that it will be more aggressive. Consequently, indications convey of Chinese war against any anti-China front country like Japan, India, South Korea, Mongolia, Philippines, Vietnam, etc. on the anonymous issue in near future. A thought-provoking fact has been observed that the funding research is higher than the research quantity during 2014 and 2015 confirmed that multiple funding has been granted for the same researches. It proved the importance of the region and the liberal funding research policy on the region. The inference revealed that the top ten highest research producing organisations are from China which confirmed China's research domination. Furthermore, fact that China is producing a huge research and far ahead than other confrontational countries which proved that at present, China is an unchallenged research superpower of the region.

References

1. Baumert, Kevin and Melchior, Brian. 2014. "Limits in the seas, No. 143, China: Maritime claims in the South China Sea". Report of Office of Ocean and Polar Affairs, Bureau of Oceans and International Environmental and

Scientific Affairs, U.S. Department of State. 13-14. https://www.state.gov/documents/organization/234936.pdf/ Accessed 07 February 2017.

2. Bonnie S. Glaser. *2015.* "Armed Clash in the South China Sea: Contingency Planning Memorandum No. 14." Council on Foreign Relations: US. http://www.cfr.org/asia-and-pacific/armed-clash-south-china-sea/p27883/Accessed 06.02.17. Accessed 07 February 2017.
3. Bremmer, I. 2014-2015. "An Uneasy Path Abroad." *Time* (December 29, 2014-January 5, 2015), 74-76.
4. Clarke, Marquise. 2016. "South China Sea Arbitration Implications on ASEAN Investors: an Overview." http://www.aseanbriefing.com/news/2016/07/28/south-china-sea-arbitration-impl ications-asean-investors-overview.html/ Accessed 10 March 2017.
5. Fensom, Anthony. 2016. "$5 Trillion Meltdown: What If China Shuts Down the South China Sea?" *The national Interest.* (http://nationalinterest.org/blog/5-trillion-meltdown-what-if-china-shuts-down-the-south-china-16996/. Accessed 07 February 2017.
6. Firestein, David J. 2016. "The US-China Perception Gap in the South China Sea: The United States and China perceive the South China Sea issue in starkly different terms." *The Diplomat.* http://thediplomat.com/2016/08/the-us-china-perception-gap-in-the-south-china-sea/ Accessed 10 March 2017.
7. Fravel, M. Taylor. 2014. "Territorial and Maritime Boundary Disputes in Asia." Saadia Pekkanen, Rosemary Foot, and John Ravenhill (ed.). *The Oxford Handbook of the International Relations of Asia.* Oxford University Press.
8. Geib, Peter and Pfaff, Lucie. 2016. "The Dynamics of Chinese Expansion in the South China Sea." *The Journal of Applied Business and Economics* .18(1), (March),.62-68.
9. Glaser, Bonnie S. 2015. "Armed Clash in the South China Sea: Contingency Planning Memorandum No. 14." http://www.cfr.org/asia-and-pacific/

armed-clash-south-china-sea/ p27883. Accessed 10 March 2017.

10. Halper, Stefan. 2013. China: The Three Warfares. Report for Office of the Secretary of Defense, Washington. 25-26. https://cryptome.org/2014/06/prc-three-wars.pdf/ Accessed 06 February 2017.
11. Hartcher, Peter. 2015. "South China Sea: the tiny islands that could lead to war." *The Age*. http://www.theage.com.au/comment/south-china-sea-the-tiny-islands-thatcould-lead-to-war-20150601-gheecs.html/ Accessed 10 March 2017.
12. Joshi, Manoj. 2016. "The South China Sea Disputes: Territorial Claims, Geopolitics, and International Law. Observer Research Foundation." http://cf.orfonline.org/wp-content /uploads/2016/08/ORF_OccasionalPaper_97.pdf/ Accessed 10 March 2017.
13. Klein, Joseph 2016. "South China Sea: UN Law of the Sea Arbitration Tribunal Sinks the Rule of Law." *Foreign Policy Journal* (August), https://www.foreignpolicyjournal.com /2016/08/20/south-china-sea-un-law-of-the-sea-arbitration-tribunal-sinks-the-rule-of-law/ Accessed 10 March 2017.
14. *Lawrence, Susan V. and Lum, Thomas. 2011. "U.S.-China Relations: Policy Issues. CRS Report for Congress R41108." Washington, DC, Library of Congress, Congressional Research Service. 26.*
15. Mutz, R., Bornmann, L. and Daniel, H.-D. 2015. "Testing for the fairness and predictive validity of research funding decisions: A multilevel multiple imputation for missing data approach using ex-ante and ex-post peer evaluation data from the Austrian science fund." *Journal of Association of Information Science and Technology,* 66(12), (December), 2321–2339.
16. Nguyen, Phuong. 2016. "Deciphering the Shift in America's South China Sea Policy." *Contemporary Southeast Asia* 38(33), (December), 389–421
17. Robert D. Kaplan. 2015. "Why the South China Sea is so crucial; Business Insider." (http://www.businessinsider.com.au/why-the-south-china-sea-is-so-crucial-2015-2) Accessed 07 February, 2017
18. Rosenfeld, Everett. 2016. "Sweeping ruling against China will have lasting

impact globally." http://www.cnbc.com/2016/07/12/south-china-sea-breathtaking-ruling-against-china-to-have-lasting-impact.html/ Accessed 10 March 2017.

19. Rustandi, Agus (Cmdr). 2016. "The South China Sea Dispute: Opportunities for ASEAN to enhance its policies in order to achieve resolution." 16. http://www.defence.gov.au /ADC/Publications/IndoPac/Rustandi_IPSP.pdf/ Accessed 10 March 2017.
20. Sato, Koichi. 2017. "The Rise of China's Impact on ASEAN Conference Diplomacy: A Study of Conflict in the South China Sea." *The Journal of Contemporary China Studies.* 2(2) (March), 95-110.
21. Shapira, Philip and Wang, Jue. 2010. "Follow the money." *Nature,* 468(7324), (December), 627-628.
22. Tarnogorski, Rafal. 2016. "South China Sea Arbitration: Roots and Consequences." *PISM Bulletin* 43(893), (July):2. http://www.pism.pl/files/?id_plik=22134/ Accessed 10 March 2017.
23. Vardakas, Konstantinos Z., et al. 2015. "An analysis of factors contributing to PubMed's growth." *Journal of Informetrics* 9(3), (July), 592-617.
24. Wang, Jue and Shapira, Philip. 2011. "Funding acknowledgement analysis: An enhanced tool to investigate research sponsorship impacts: the case of nanotechnology." *Scientometrics* 87(3), (June), 563-586.
25. Xu, X., Tan, A. M., & Zhao, S. X. 2015. "Funding ratios in social science: The perspective of countries/territories level and comparison with natural sciences." *Scientometrics 104(*3), (September), 673–684.
26. Zhou, Ping, & Tian, H. 2014. "Funded collaboration research in mathematics in China." *Scientometrics 99(*3), (June), 695–715.

Role of Associations in Development of LIS Education

Mamta Amarpuri

Librarian, Darshan Academy, Kirpal Bagh, Bhamashah Road, New Delhi-110009.
Email:mamta.amarpuri@gmail.com

Abstract: The Library Associations play an important role in promoting the role of librarians. There is a strong connection between an association and LIS education. Apart from its main concern with the teaching of Library and Information Science, the associations have increasingly become involved in other educational work, particularly in LIS education and in spreading technical knowledge and digitization of the libraries. This paper emphasis on role of association in LIS education and how the associations are becoming an integral part in disseminating LIS education, technical knowledge. These are becoming useful in establishing national and international connections also. Thus, we can see the development of a country in all aspects depends upon the development of libraries also.

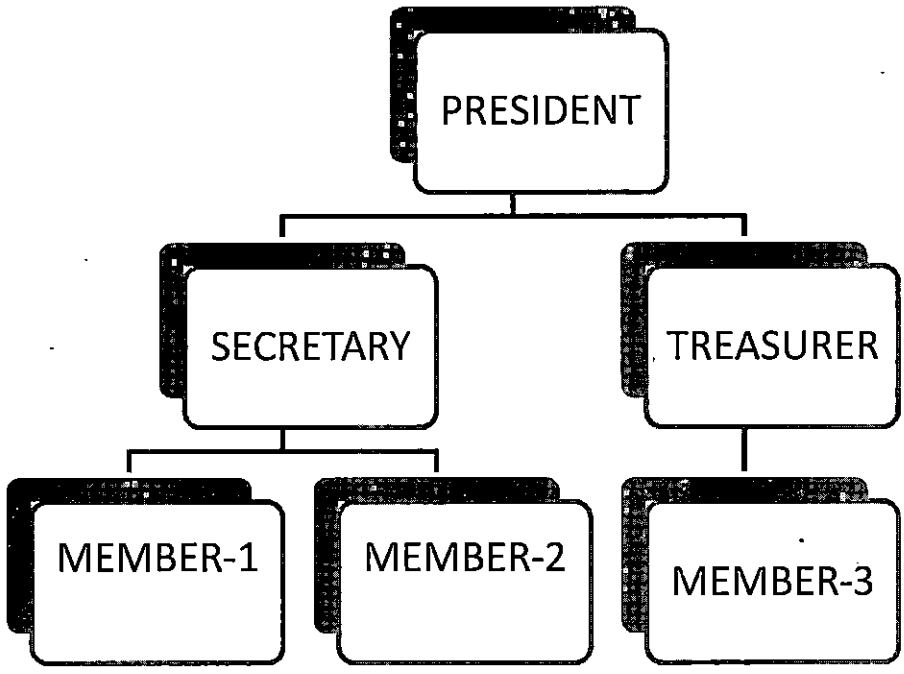
Keywords: LIS Education, Library Associations, International Connection, Museum Library.

1. INTRODUCTION:

The term "association" means a group of people having common interest who join their hands together to fulfill a common motive.

The people of an association come together to create an environment which helps them to improve facilities, material, manage funds etc. Generally associations are managed by a council of elected members. The person who leads the position in an association is known as the "President". The other positions in an association are- President, Secretary and Treasurer etc.. An association can be formed with atleast 7 to 8 persons. The board of members are said as Office bearers and collectively known as "The Executive".

The structure of an association may be as follows:-



Members of the associations are usually volunteers. An association follows the rules which are decided by the members mutually.

Generally, an association plays an important role to impart knowledge to a part of the learned society. An association helps in updating the knowledge of a person and extends the growth as well.

As other fields require the continuous progress, the same way LIS professionals also need to remain updated with the knowledge. Thus, an association stimulates the growth of professionals and serves as a bridge to cover the knowledge gap also.

2. Role Of Associations In Lis Education

From the point of view of librarianship, the librarians have come together to reach towards the common aim. With the help of associations, one can grow professionally, learn and share their views and problems about their profession. Actually, we observe that an association provides a platform where the librarians working in different kind of libraries, assemble under one roof to share their common goal. This is equally important for the growth of a country. As other professionals meet , discuss and resolve their professional issues, the same way ,if any, nation wants to progress in the world, then it is felt that the libraries should be strengthen. The

libraries should work efficiently and provide a culture of reading to the society.

Several exchange and internship schemes are operated during the conference with the help of agencies or other library associations. During 1966 and 1967, associations collected information regarding care and made use of libraries and concluded with the welcome of scholars and other persons requiring to use them.

If we see the period of 1960-70, has seen more changes in the structure of Libraries. We find an exceptional growth in libraries. Moreover, in 1966, the library Division, the Archives, the UNESCO Library were all brought together into one department i., e. Documentation, Bibliotheques and Archives-DBA.

3. The main function of DBA was to-

a) "process, store and disseminate information on UNESCO documents and publications, and to make available both current and retrospective documents in microfiche or enlargements".

b) "serve as a continuing pilot project for the demonstration of, and training in, modern equipment and up-to date application of modern technology to the problems of information control".

Hence, it was estimated that in these years, atleast 30,000 documents of all kinds were fully indexed and stored in machine-readable form. At the same time, they were recorded as negative microfiches so as to be available for dissemination on request.

A. Role of Associations in research and international co-operation

a) Subventions (provided usually in the form of contracts for specific jobs) are given to support the work of international non-governmental organizations in librarianship (IFLA), documentation (FID) and archives (ICA). These bodies are encouraged to co-ordinate their activities and to identify the key problems calling for international action.

b) By means of seminars, conferences, specific contracts with specialists etc. studies and research are undertaken in such fields as the standardization of information processing, planning of services, professional training.

c) The results of these studies, the proceedings and recommendations of conferences and meetings of experts are published as monographs or in UNESCO periodicals and other serials.

B. Role of Associations in the development of documentation, library and archives services-

An association is responsible to provide technical support to its members also.

a) Pilot projects are initiated or supported for limited periods.
b) Regional meetings of experts, the national planning of services in relation to economic- development are organized.
c) On request an association can participate in the planning and implementation of such services in the libraries.

C. Role of Associations in disseminating information to the disabled people

Many associations are commissioned by the National Libraries for funding to other small libraries to carry out a study of the future needs for writing or reading aids for disabled also. This matter was brought into the knowledge by Miss Alison Shaw, in 1969 under the title *"Print for Partial Sight".*

D. Role of Associations in providing training

The associations are providing the facilities of training to LIS professionals also, by granting scholarships and by organizing special courses. Sometimes experts are also arranged to impart some technical knowledge to the members.

E. Role of Associations in developing libraries

Since libraries are integral part of the society. Different associations help libraries in building up and growing more in the society. With the help of government, associations are showing their great contribution towards the development of libraries.

F. Role of Association for planning services

Associations help in planning and offering the discussions on latest trends, and better services also.

G. Role of Association for developing a librarian into an expert

The associations are also creating an environment of expert librarians who can really be proved helpful for the patrons of the institution.

4. Recommendations during meeting of association

Certain recommendations are accepted at these meetings have wider relevance and are beginning to receive some general approval. These can be expressed in the following composite form:-

a) Planning of library services, conceived as an integral part of the planning of education, should be accepted as national obligation and carried out by a central agency.

b) Legislation is necessary to establish such central authority, which would also ensure the conservation of national book production by legal deposit under copyright laws, which are properly enforced.

c) The central authority should –

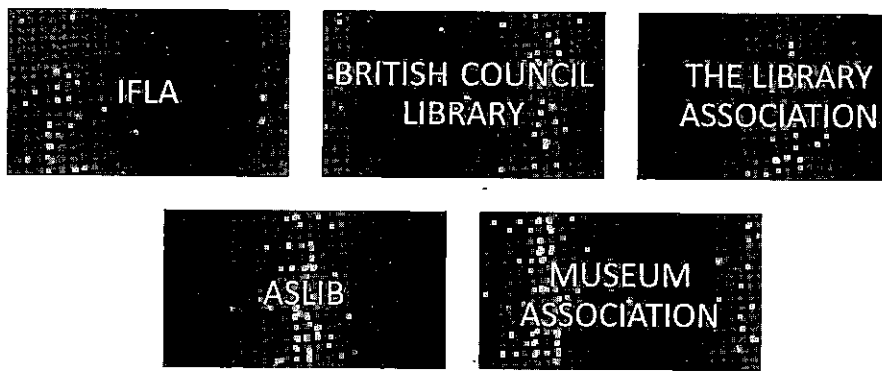
- Co-ordinate the bibliographical resources of the total library system so as to maintain a free transfer of information within the national system and internationally as well.
- Helps to rationalize the acquisition of publications and centralize the cataloguing and classification and also ensure the distribution of catalogue cards.

Mindful that an association has a special responsibility to promote good practice and to stimulate the formulation of national and international standards of the library.

As in a developing country, an association helps to promote LIS education both in quantity and quality. The associations serve some special courses to strengthen the LIS professionals. They are providing the knowledge of various software even free of cost or on nominal charges. Basically such training facilities are a national responsibility of the associations also which has more significant influence in future.

There are number of associations spread all over the world to provide a gateway to achieve the goal.

INTERNATIONAL LIS ASSOCIATIONS:-



ROLE OF INTERNATIONAL ASSOCIATIONS IN LIS EDUCATION

A) IFLA

The international Federation of Library Association has continued its task according to its statutes, of promoting international co-operation in the field of librarianship and bibliography. The IFLA has continued especially to promote the international standardization of library techniques. IFLA is an international non-governmental organization in consultative relations with UNESCO, and therefore has an obligation to help in implementing decisions of UNESCO's General Conference.

B) British Council Libraries

The purpose of the council is promoting a wider knowledge of United Kingdom. The immense variety of the work of the Council and the geographical spread of its activities has considerable effect on the character and functions of its library organization.

They are public in nature and available to all.

C) The Library Association

This association opens the door for those who were not professionals in LIS. It dealt with the national financial policy and reports of the libraries. It helped in setting up the fund by the government to improve the status of libraries in the country.

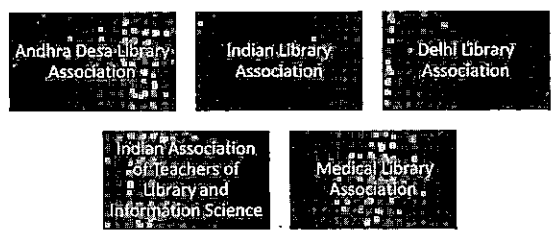
D) ASLIB

There were common goals of ASLIB and LA. Therefore, later on a joint committee of these two associations were formed.

E) MUSEUM ASSOCIATION

Museum associations are another example to have suitable qualified and experienced museum staff appointed wherever a joint library or museum service was established under the control of a librarian.

NATIONAL LIS ASSOCIATIONS



ROLE OF NATIONAL ASSOCIATIONS IN LIS EDUCATION

A) Andhra Desa Library Association

This was the first association framed in 1914 in Andhra Pradesh. It started a course in 1920 to support LIS professionals. This association has tried to provide professional training to the people working in different libraries of Andhra Pradesh.

B) Indian Library Association

This was established in 1933 in Delhi to provide a great support to its members and professionals also. It also publishes journals and conducts conferences to meet the need of LIS society. It honors the Librarians and other LIS professionals for their remarkable work in LIS education.

C) Delhi Library Association

This was established in 1953 in Delhi. It conducts the training courses of Certificate level and Diploma level also. It is organizing conferences and seminars also to strengthen the LIS professionals.

D) Indian Association of Teachers of Library and Information Science

It was established in 1969 in Punjab. It offers training to the teachers of Library and information Science in India. This association especially supports the Librarian or LIS professionals those are teaching the subject-Library and Information Science.

E) Medical Library Association

It was especially constituted in 1981 in New Delhi to provide information and knowledge to the health science librarians. The association provides the training to the librarians working in hospitals, Nursing homes to strengthen their capacity to assist students, physicians, research workers etc.

There are number of associations which are providing a great support to its members and other LIS professionals so that they take a distinguish place in the society.

5. Conclusion

Thus national and international associations are organizing conferences, seminars, technical sessions to update the LIS professionals. They are taking initiative to modify the syllabus at different intervals of time also. They are conducting discussion groups also . These associations are also publishing relevant articles based on LIS trends and matters.

It became apparent that there was a sizeable demand for directly for diversity courses both by employers and potential employees. It is equally apparent that over the years, there has been a positive trend in diversity education with recent LIS graduates who are more likely than their fore bearers to have had access to diversity courses during their training. A lot of this positive development is attributable to LIS association that have contributed in different ways to mainstream issues of diversity in the profession. For example, ALA is supporting diversity at a practical as well as policy level through the creation of Spectrum Scholarship for underrepresented groups pursuing LIS master's degrees. Other related associations that have made marked contributions in this area include – The Association of Research Libraries and some smaller divisions and associations within ALA.

But despite all these efforts, more still needs to be done to adequately ground librarians with sound competency through which they are able to meet the needs of an increasingly diverse population that they now serve. The students surveyed in this study indicated that they appreciate coursework dealing with the diversity issues when it is available, and that they would like to see more of it. The main challenge now goes to LIS education, which must be its rightful place in ensuring that well-rounded and better adjusted graduates capable of working with, and serving diverse populations are produced through their systems.

References:-

1. BONNY, H. (1977). *UNESCO'S ROLE IN LIBRARY DEVELOPMENT.* PARIS: UNESCO BULL LIBRARY.
2. CHAPLIN, A. (1967). CATALOGUING PRINCIPLES FIVE YEARS AFTER THE PARIS CONFERENCE. *UNESCO BULL LIBRARY* (p. 150). PARIS: UNESCO BULL LIBRARY.
3. E.COHN. (1968). *LIBRARY SERVICE TO YOUNG ADULTS.* LONDON: IFLA:-PUBLIC LIBRARIES SECTION.
4. GELFAND. (1968). *UNIVERSITY LIBRARIES FOR DEVELOPING COUNTRIES.* PARIS.
5. GREEN, L. (1969). *EVALUATION OF A SCHOOL LIBRARY IN LAGOS*. NIGERIA: MINISTRY OF EDUCATION LIBRARY SERVICE.

6. IFLA. (1969). *THE INTERNATIONAL STANDARDIZATION OF LIBRARY STATISTICS: A PROGRESS REPORT.* COPENHAGEN: IFLA :COMMITTEE ON STATISTICS.
7. J.MEYRIAT. (1969). *GUIDE FOR ESTABLISHMENT OF NATIONAL SOCIAL SCIENCE DOCUMENTATION CENTRE IN DEVELOPING COUNTRIES.* PARIS: NASSDOC.
8. SRIVASTAVA, A. (1969). *EDUCATION FOR LIBRARY SCIENCE AND DOCUMENTATION.* BAGHDAD: UNIVERSITY OF BAGHDAD.
9. Whatley, H. (1970). *British Librarianship and Information Science.* London: Library Association.
10. (1949). *WORKING PARTY ON INSTRUCTION IN THE USE OF LIBRARIES AND IN BIBLIOGRAPHY AT THE UNIVERSITIES.* LONDON: LIBRARY ASSOCIATION.

AUTHOR'S PROFILE



Ms. Mamta Amarpuri is working as a Librarian at Darshan Academy (CBSE affiliated), New Delhi. She has obtained a Post Graduate degree in Library and Information Science(M.Lib.Sc.) and Post Graduate degree in Computer Applications (M.C.A.) . She has contributed her paper in the book and in national conference also. She has an over decade experience of managing academic library. She specializes in setting up Academic Library and enforcing a flair of reading among children. She provides thought leadership and pursues strategies for engagement with the external sources to implement new reading skills. She is a Life Member of ***Indian Library Association , Library Professional Association & NBT*** also.

Email : mamta.amarpuri@gmail.com

Scientometric Analysis on War and Peace

Dr. Rajesh Kumar Bhardwaj

Librarian
FORE School of Management New Delhi
rkdce2004@gmail.com

Dr. Pardeep Rai

Librarian
Maitreyi College (University of Delhi)
New Delhi

raipardeep@gmail.com

Abstract: The research quantum on peace and war produced worldwide during two different eras; first 1920 to 1938 and second 1946 to 2015, i.e., post world wars have been investigated on various viewpoints. This article precisely discusses the research dimensions on two themes "World Peace" and "World War". First, I collected, collated and presented the data and second, I gauged and cogitated some major issues for further inquiries. Furthermore, science funding of research has been analyzed to reveal the policy of leading countries. The study focuses on the analysis of statistics, i.e., research quantum, organizational contributions, funded research counts and science of funding research. I measured the chronological research growth from 1946 to 2015 in ten years slot and subsequently, escalation of sequential geographic funding has been figured out. Additionally, I highlighted the research quantum on specific subjects carried out by the aligned leading nations which have the bilateral strategic partnership for decades. This work could be the best substantial ingredient to researchers, policy-architects, sociologists, politicians, and decision-makers those who are hungry for such studies

Keywords: Research Analysis; Science Funding; Socio-Scientometrics; Strategic Collaboration: War and Peace;

1. INTRODUCTION

Nobody can raise question over the significance of war and peace study because both have been the universal inquiry. People across the globe have witnessed two world wars and have perceived drastic consequences. An experiment of mass chemical and biological weapons have demonstrated that the next war would be manifold destructive and will mutilate the political, biological and ecological map of the globe. Worldwide leading think-tanks fear of extinction of many species and significantly eliminating of the world population. Leading peace-loving nations

across the globe continue attempts to maintain strategic balance to push away the third world war (IIIWW) and focusing on enduring world peace *(WP).* The study also reviews the role of state policy for peace and war, as Sun Tzu said that war is a matter of vital importance to the State; the province of life or death; the road to survival or ruin. It is mandatory that it be thoroughly studied. (Sun Tzu, 5th century BC). The causes of war may have many hidden dimensions and Stewart has highlighted some significant instincts. "The privileged may do so, fearing loss of position. For example, the prospect of possible loss of political power can act as a powerful motive for state-sponsored violence which occurs with the aim of suppressing opposition and maintaining power. Since the government has access to an organised force (police/army) and to finance, state terrorism is sometimes an important source of humanitarian emergencies. International support for peace has been less in total, and also less effective than the war financing". (Stewart, 1998). Most of the people believe that the justifiability of war depends, not just on considerations of actual or expected consequences, but also on what is often called matters of principle. On this view, the rightness or wrongness of an act may be, at least in part, a function of the inherent nature of the act itself, which is independent of what its consequences are. (Jeff, 1991) It is also very true that every state has the conflicts among national interests and international relationships where they always attempt to balance on both failing which prefer to stick by national interests.

2. LITERATURE REVIEW

Peace research was born at the intersection of peace activism and the emergence of modern social science. The war and peace have always been the key issues in the field of international relations. (Kant, 1795/1991) The causes-of-war research and its dynamics have also been portrayed by Ohlson. "There is a conceptual gap between causes-of-war research and conflict resolution research. Three arguments are advanced, linked to the three questions, why do people start fighting? Why do people stop fighting? And how can peace be made durable? The first argument is that people take to arms because they have Reasons in the form of grievances and goals, Resources in the form of capabilities and opportunities, and Resolve because they see no alternative to violence in order to address grievances and attain goals. Second, the Triple-R concepts also explain the `outbreak of peace', that is, war termination and peace-building. Third, variations in the dependent variable - different degrees of peace; here termed Triple-M (Mutually hurting stalemate, mutually enticing opportunities and mutually obtained rewards) - are explained by changes within those three clusters of explanatory factors." (Ohlson, 2008)

The end of war corroborates that purpose is fulfilled but undetermined of what degree and that scale of dissatisfaction might cause another war. "The activities of Thompson during the 1840s and 1850s can be usefully explored alongside those of another Benthamite, John Bowring. Their contribution to various organizations, debates, and campaigns is analyzed, and their outlook compared with that of other figures, notably Richard Cobden." (Turner, 2005) To differentiate war from lesser levels of violence, they generally follow the Correlates of War Project's operational requirement of an annual minimum of 1000 battle-related fatalities (Singer and Small, 1972). In the twentieth century, developments of comparable magnitude had already taken place in the decade preceding WWI and WWII. (Gilpin, 1981) Inspired by a celebrated study of foreign news published in JPR (Galtung & Ruge, 1965), the term 'peace journalism' has also gained considerable popularity, in distinction to 'violence/war/victory journalism'. (Gleditsch, Nordkvelle, and Strand, 2014) The involvement of each civilian in any form in war and peace has always been appreciated and information professionals are performing their responsibility through such studies, "(1) It is necessary, therefore, that civilians should begin to take a direct interest in military problems, (2) The possession of superior armament has been accompanied, in modern times, by the growing assertion of absolutist theories of government, especially by Fichte and his successors in Germany, (3) The difficulties inseparable from war do not end with the conclusion of peace." (Teggart, 1941) Sometimes war turns out to be inescapable for survival but contradictory David has mentioned in his article that the war and war funding is profitable to many aggregators. "Wherever there is a war, look for CIA/IMF/private military war profiteers covertly funding and supporting both sides in order to keep the wars raging and the profits rolling in. As former CIA Station Chief John Stockwell explained: "Enemies are necessary for the wheels of the US military machine to turn." *(DeGraw, 2010)* A comprehensive compilation of information has always constantly a vital significance especially in a fiery conflict and is a key input while strategic planning during war or in peace therefore being a knowledge navigator, our role becomes more responsive. In 1969, Vassily V. Nalimov and Z. M. Mulchenko coined the Russian equivalent of the term 'scientometrics' ('naukometriya') (Nalimov & Mulchenko, 1969). As the name would imply, this term is mainly used for the study of all aspects of the literature of science and technology (William and Wilson, 2001). The study by Jasna Dravec Braun illustrates the impact of war on scientific output "After the War in Croatia a gradual but large increase in the number of published articles was evident, especially in foreign journals. The War diminished technical writing almost to the zero while an increase of scientific production was 9 times greater in 2008 than in 1968". (Dravec Braun, 2012) The science funding indicates the

national interest policies and guidelines of the funding organisation. Therefore, analysis of science funding and inferences draws attention towards future consequences. Science funding, considered as the key public resource in modern academic community, has an irreplaceable function in research development, scientist training and cultural construction (Vardakas, et al., 2015). Various level science funding agencies of leading countries allocate an appropriate capital to gain a competitive edge over counterpart countries. Consequently, the large scale Scientometric analysis of funding and funded papers becomes a hot-spot in recent years. For examples, the funding analysis in Nano research (Shapira and Wang, 2010), the general study of natural science (Wang, et al, 2012) as well as social science (Xu, et al, 2015), and the interesting and in-depth observation in the specific field, mathematics (Zhou and Tian, 2014). Correlated to science funding, an organization has a critical role in decision-making apart from the state policy. Funding organization must ensure the quality of research and peer review-based decision-making procedure (Mutz, Bornmann, and Daniel, 2015) while deciding to fund a research. The pilot study by Grant examined three guidelines and was able to ascertain that they contained citations of a total of 284 publications (which can be categorized by author, research institution, country, etc.). Grant's results demonstrated the usefulness of his approach to tracing the flow of knowledge from research funding into clinical practice. (Bornmann, 2013)

The state policies of funding research especially coupled to war are clearly defined but an undivulged; these are reflected only through such studies. "One instrument for executive spending flexibility is "reprogramming" of funds within an appropriate – a practice regularly employed by the Department of Defense, Atomic Energy Commission, Department of Interior, Veteran's Administration and other federal agencies. Despite the magnitude of funds involved and the intriguing questions of congressional control and budget priorities, little has been written about reprogramming." (Fisher, 1974) Therefore, think-tanks, policy-makers, and arms business aggregators always keep a close watch on such developments and trends. Consequently, researchers identify current, realistic and exigency issues for investigations. The responsibility of library and information professionals in managing warfare has been significant characteristic for want of war plan strategies to attain affirmative outcomes. "In 1942 the U.S. Office of War Information (OWI) was created by the federal government to increase domestic understanding of America's war effort and to facilitate the flow of American information overseas. As part of this operation, fourteen information libraries were established throughout the aligned and neutral territory." (Richards, 1982)

3. METHODOLOGY AND RESEARCH ANALYSIS

The Scientometrics methods enable us to analyse the information dimensions, i.e., research and funding trend including funding ratio, impacts, and countries indices. The analyzed data presented in various facets, i.e., research output, funded research, chronological growth with ranking, geographical distribution of publications, most productive institutions, document form-wise distribution, language-wise distribution of publications, subject wise dispersion, quality assessment and ranking, citations and Citation Per Paper (CPP) received by publications, cited and uncited papers, funded research citations and uncited papers. The study revealed certain output and funding trend on the theme, however, both words are antonym and cannot be detached while conducting such investigations. Therefore analysis has been premeditated in such a method to measure research yield and consequences together. The study consciously outlines to ensure the research more focused, analytical and result oriented and limited to, i.e., Scopus: opted as key source for collecting data sets and bibliographical records; confined to specific keywords *"World War" (WW)* and *"World Peace"(WP)* under 'Article Title, Abstract, Keyword' option; identified specific period and publications, viz., from 1920 to 1938 (Bt1&2WWs) and from 1946 to 2015 (Af2WW) - Af1&2WW to analysis an appropriate trends and indications of the research. The datasets fetched in excel sheet have been filtered, sorted and presented in the form of textual, table, graph and figure at appropriate places suitable for the study.

Table - I : Major formulas applied in the study

Indicators	Description
Formula -1: F% (Funding %)	TF The % of funded papers to all papers. This indicator is used to measure the funding support for the countries/territories and other scientific entities. F% = X 100 T T is the total number of papers, and TF represents the total number of funded papers.

Formula -2, CPP (Citation per paper)	C This indicator is used to measure the Citation per paper of Scopus cited papers. C represents the total citation counts for cited papers and CP represents the total number of cited papers. CPP = CP or T or FCP T represents the total number of papers. FCP stand for total number of funded cited papers
Formula -3: %FNC (% of funded uncited papers)	FNC The % of funded uncited papers, which has been calculated. TF represent the number of funded papers and FNC denotes the number of funded uncited papers. %FNC = X 100 TF
Formula -4 Annual Growth	∑ of % change over year Annual Average Growth = Number of years
Formula -5: %FCP (% Funded cited paper)	FCP This indicator is used to measure the % of funded cited paper of Scopus cited papers. TF represents the total funded papers and FCP represents the total %FCP = X100 TF numbers of funded cited paper.

Formula -6 : %CP (% Cited paper)	∑ of cited papers % cited papers = X 100 ∑ of papers
Formula -7, Periodic average ratio	∑ of records (Af2WW) Periodic average ratio = / No. of years ∑ of records (Bt1-2WW)
Formula -8, Aggregate ratio of Research output	Periodic average ratio (Af2WW) Aggregate ratio = Periodic average ratio (Bt1-2WW)

Figure I: Total research quantum, percentage and funded research counts

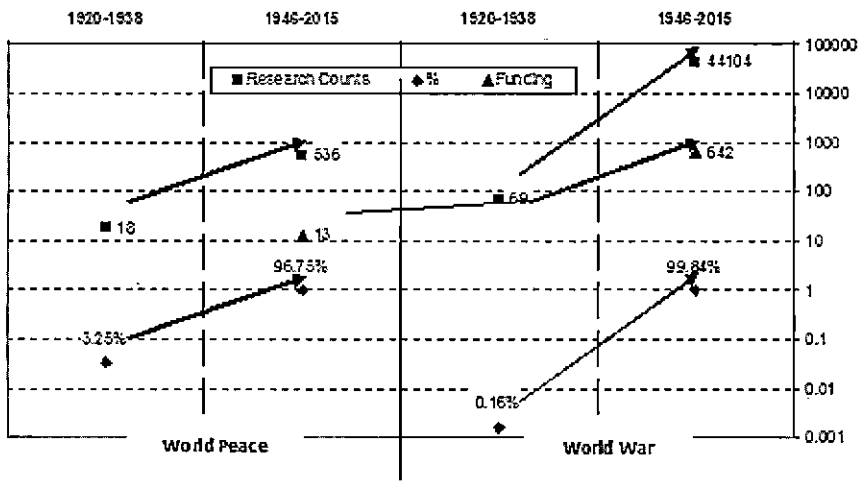


Figure I present the research quantum, percentage and funded research counts. Further, research records have been displayed on *'WP'* Bt1&2WW which is 3.35% (18) of (Af1&2WW) (536) and on *'WW'* Bt1&2WW are 0.15% (69) of Af1&2WW (44104). Relatively, the research records on *'WP'* Af1&2WW are 1.21% (536) of research records (44104) on *'WW'* for the same period. Overall, the research records on *'WP'* Bt1-2WW are 1.25% (554) of research records on *'WW'* for the same period (44173). Additionally, the ratio of records presented on *'WP'* Bt1&2WW and Af2WW which is 1:30 respectively and the ratio of records on *'WW'* for the same period is 1:64. Similarly, the ratio of records on *'WP' and 'WW'* Bt1&2WW is 1:4 respectively and the ratio Af1&2WW is 1:80 respectively. Furthermore, the output based on calculations by period slot, i.e., 19 and 70 years, shows ratio 0.20:1, (Table 1- formula-7) which further come down to 1:6 Af1&2WW respectively {(aggregate ratio, (Table 1- formula-8)}. The research quantum 44104 in 70 years expected to be published in next 111 years Af2WW. Interestingly, no funding was recorded Bf2WW, it was started only Af2WW and recorded ratio with a enormous variance as 1:49 on *'WP' and 'WW'* respectively.

Figure - II: Growth Trend of Research during the study period with ten years slot.

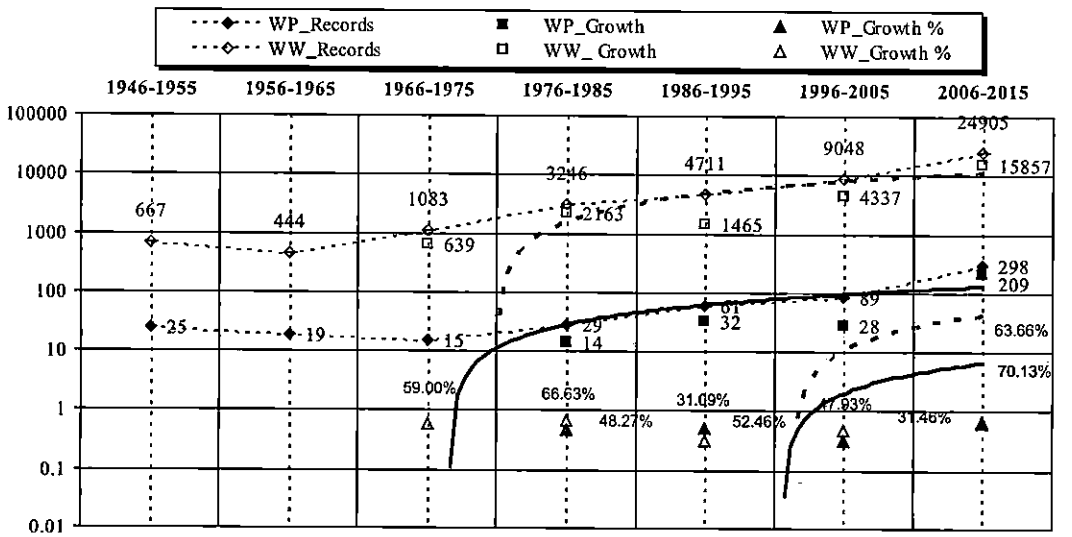


Figure II figured annual growth rates on *'WP'* and highlighted the decreasing trend from 1946 to 1975 but increasing from 1976 to 2015 during every ten years slot. The highest count of research (298) pertains to the period 2006 to 2015. Further, it depicts changing percentage of research output reported during 1956 to 2015 where research counts of *WP* are very less than *WW*. At the other side, the figure also presents annual growth rate on *'WW'* and highlighted the decreasing

trend by 50% from 1956 to 1965 but increasing from 1966 to 2015 during every ten years slot. Additionally, the annual average growth* have been recorded as 2.41% and 3.63% on *WP* and *WW* respectively. (*Refer Table-1, formula-4) Further, the highest research quantum recorded as 24905 which have been produced during ten years from 2006 to 2015.

Figure III: Geographical distribution of research quantum Af1&2WW

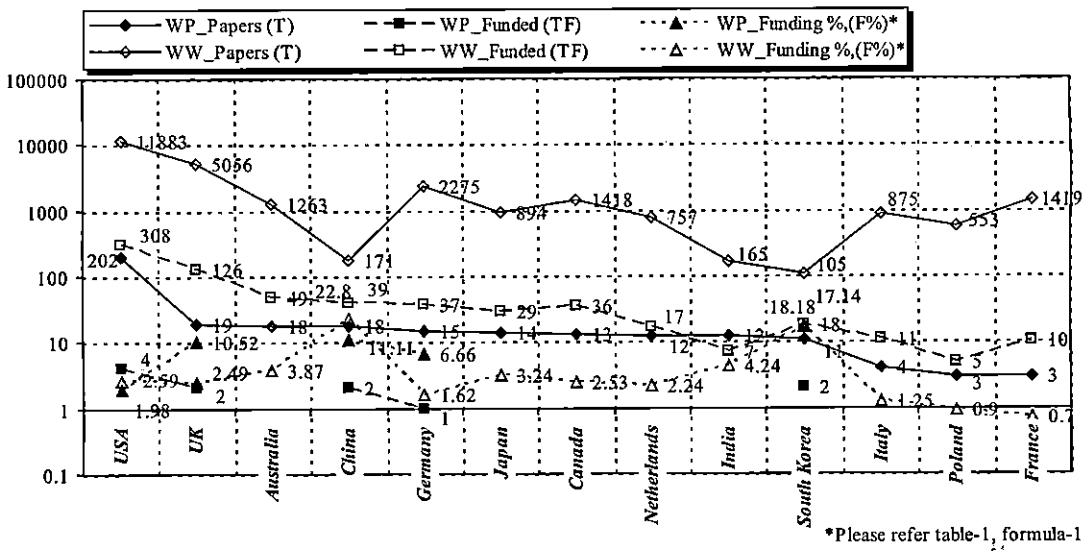


Figure III depicts the research quantum, funded research counts, percentage funding respectively by leading countries. It displayed research quantum on *'WP'* in decreasing order from USA to France. The USA has sustained top ranking for highest research output and funding research on both themes *'WP'* and *'WW'* followed by UK, Australia, China, etc. and on *'WW'*, again USA is the highest research producer followed by UK, Germany, France, etc. On *'WP'*, South Korea scored top ranking for funding highest percentile of research with 18.18% followed by China and United Kingdom. At the other side on *'WW'*, China scored top ranking for funding highest percentile of research with 22.80% followed by South Korea and India. Comparatively total research quantum recorded (11883 and 202), funding (308 and 4) and percentage funding (2.59 and 1.98) on *'WW' and 'WP'* respectively which shows a huge difference on both themes. The research infers that *'WW'* has a very large quantum than *'WP'* in all facets.

Table -II : Yearly distribution of funded research papers on WP

Period	T	CP	C	TF	F%*1	Cited Papers			Uncited Papers	
						FCP	C	CPP *2	FNC	NCP%*3
2015	33	4	4	8	24.24	1	3	3	7	87.5
2014	24	5	8	1	4.17	1	3	3	0	0
2013	33	6	10	2	6.06	1	7	3	1	50
2012	41	12	40	0	0	0	0	0	0	0
2011	34	10	35	0	0	0	0	0	0	0
2010	39	19	77	0	0	0	0	0	0	0
2009	31	14	112	0	0	0	0	0	0	0
2008	29	11	52	0	0	0	0	0	0	0
2007	18	11	37	0	0	0	0	0	0	0
	282	92	375	11	3.9	3	13	9	8	72.7
(Please refer table-1, formula-1 (*1), formula-2 (*2), formula-3 (*3),)										

Table II presents the cited papers, citations, funded counts with percentage and funded cited papers, citations with citation per page and also uncited papers from 2007-2015 on '*WP*'. It has displayed total records as 282 including 11 funded research counts and out of that 92 cited papers which got overall 375 citations with 3.9%. There are only 3 funded cited papers out of 11 that a very disappointing figure. On the other hand, there are 8 funded uncited papers with 72.7% ratio which reiterates funding unworthy.

Table -III : Yearly distribution of research quantum and funded counts on WW

Period	Papers T	Cited papers/ Citations	Funded Papers (TF)	% Funding (F%)*1	funded papers on WW					
					Cited Papers				Uncited Papers	
					Funded papers (FCP)	Citation (C)	% funded Cited papers (%FCP) *2	CPP *3	Funded papers (FNC)	% Uncited papers*4
2015	3037	391/858	266	8.76	135	448	50.75	3.32	131	49.25

2014	3139	777/2128	218	6.94	160	1164	73.39	7.28	58	26.61
2013	2749	948/3688	140	5.09	119	1137	85.00	9.55	21	15.00
2012	2902	1097/6301	5	0.17	5	41	100.00	8.20	0	0.00
2011	2759	1170/12211	3	0.11	1	4	33.33	4.00	2	66.67
2010	2698	1293/9905	2	0.07	2	16	100.00	8.00	0	0.00
2009	2263	1166/11663	3	0.13	3	15	100.00	5.00	0	0.00
2008	1891	1040/9982	1	0.05	1	7	100.00	7.00	0	0.00
2007	1788	1032/10258	1	0.06	0	0	0.00	0	1	100.00
Total	23226	8914/66994	639	2.75	426	2832	66.67	6.65	213	33.33
		38.38%*5 / 7.52 CPP*3	(Please refer table-1, formula-1 (*1), formula-5 (*2), formula-2 (*3), formula-3 (*4), formula-6 (*5)							

Table III displayed the data of cited papers and uncited papers on *'WW'* from 2007-2015. It presented the research quantum as 23226 including 639 funded research counts out of which 426 cited research counts with overall 2832 citations; 66.67% and an average of 6.65 citations per paper during nine years but at the other side, there are 213 funded uncited research counts comprising 33.33%. The percentage of funded research cited counts (66.67%) is very high than the percentage of funded research uncited counts (33.33). Further, it presented an interesting figure that the ratio of funded cited counts are double than the uncited counts which indicated that the fundings on *'WW'* is highly worthy. Such sort of inferences encourages researchers who focuses over micro-sociology; indicates impact on future research sociology and signifies the academic impact on citation analysis. Furthermore, it presented that funding ratio on *'WW'* appears not high but science funding has shown an effective role in promoting research on the subject.

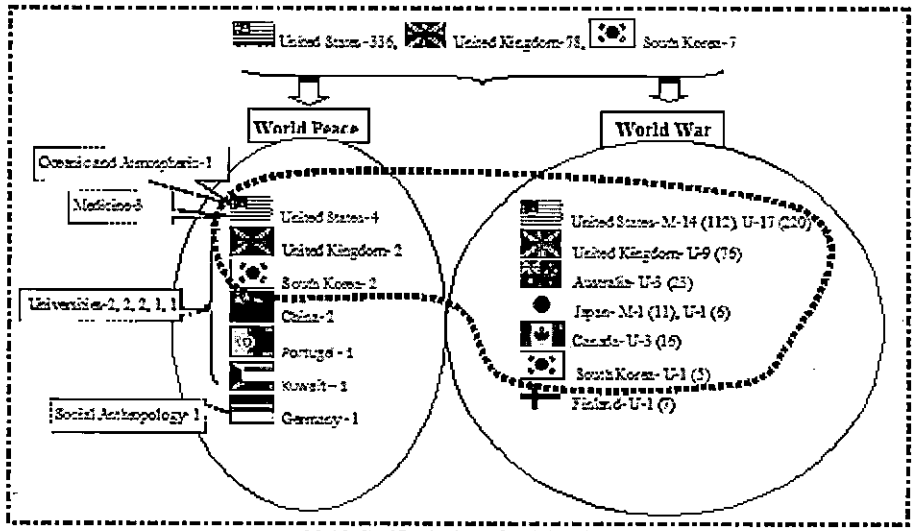
Table - IV : Top funding organisations

WP		WW		
Organizations	**Papers**	**Organizations**	**Papers**	**Rank**
The Catholic University of Korea - South Korea	1	VA Medical Center - USA	17	1
Duke University School of Medicine - USA	1	University College London - UK	12	2
ISCTE-IUL - Portugal	1	The University of Sydney - Australia	12	2
Jinan University - China	1	University of Oxford - UK	12	2

Lawrence Berkeley National Laboratory - USA	1	Johns Hopkins Bloomberg School of Public Health - USA	11	3
MPI for Social Anthropology - Germany	1	Shiga University of Medical Science - Japan	11	3
National Oceanic and Atmospheric Administration-USA	1	Duke University - USA	11	3
Seoul National University - South Korea	1	King's College London - UK	11	3
University of Kent - UK	1	Uni. of California, Davis - USA	11	3
University of Glasgow - UK	1	University of Cambridge - UK	11	3
University of Kuwait - Kuwait	1	National Institute of Allergy and Infectious Diseases - USA	10	4
University of North Carolina School of Medicine-USA	1	National Institutes of Health, Bethesda - USA	9	5
Zhejiang University - China	1	University of Pittsburgh Graduate School of Public Health - USA	8	6

Table IV presents the top funding organisations on *'WP'* and *'WW'* Af2WW. All organisations presented under *'WP'* have funded equal number of research therefore these have been listed in alphabetical order. At the other side on *'WW'*, the funding organisations have been listed in order; from highest to lowest funding organisations, i.e., VA Medical Center of USA stands at the top position and others are listed in decreasing order. The USA stands at top as highest funding country with three and six organisations on *'WP'* and *'WW'* respectively followed by UK. Overall, comparative figure shows that the organisational funding on *'WW'* is much higher than *'WP'*.

Figure – IV: **Top research funding organisations from strategic aligned nations focused on specific subject area (*Af2WW*)**



M- Medical Institutions; U- Universities

The figure IV presents an additional dimension on focused research subject area and organisations, i.e. medical institutions & universities of strategically aligned nations. Only selected organisations which has produced minimum five funded researches have been taken into considerations for analysis. The analysis depicts that there are three common countries, i.e., US, UK and South Korea which have funded on both themes *'WP'* and *'WW'*. It presents that 13 institutions from 7 countries have produced 13 research counts of different subject areas on *'WP'* out of which 3 research counts in Medicine which are the highest counts in a subject. Therefore, Medicine has been identified as the most favorite funded subject area. Similarly, Medicine again is the most favorite funded subject area with highest research fundings counts under *'WW"*. Further, it presents a quantum of 366 funded counts from top 50 institutions. Overall, universities have produced highest funded research counts, i.e., 253 followed by medical institution with 113 records. Here important to note that the universities have produced research in numerous subject areas which includes medicine also; therefore, medicine appears the most preferred subject area with highest researches. This inference raise supplementary issues as why medicine is the most preferred funding subject under the theme of *'WP' and 'WW'?* The US has emerged as a highest research producer state which has tied with diverse strategic alliances to strengthen its network with other leading research producers. The US has unique strategic association with UK *and Canada for being the NATO founding members. It has* a treaty of mutual cooperation and security with Japan since 1952; a strategic cooperation agreement with Israel since

1981 and a military alliance with South Korea and Australia. The UK and Australia have a multilateral defense relationships agreement under 'five power defense arrangements'. The inferences endorsed that aforementioned strategic aligned nations have produced the highest research quantum.

Figure – V: Subject dispersion of research quantum on WP and WW (Af1&2WW)

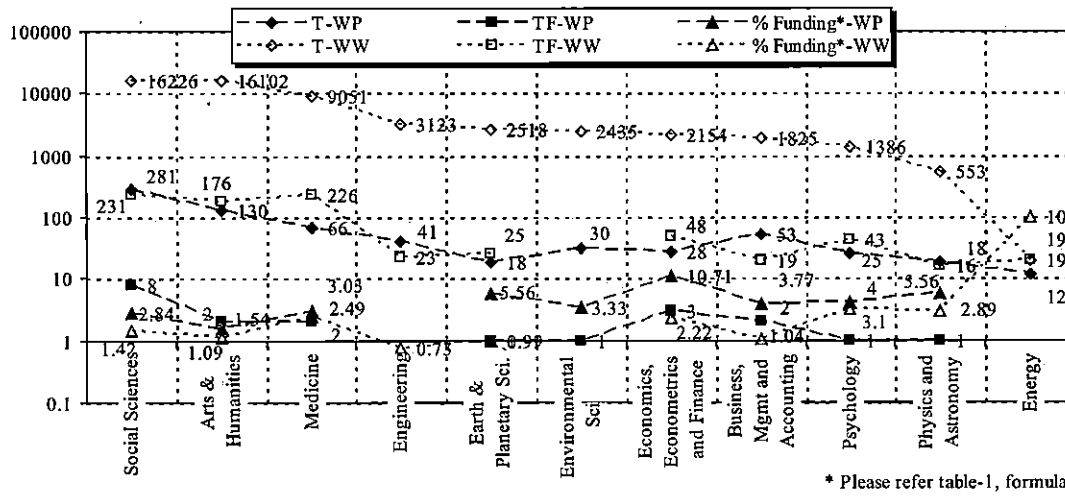


Figure V depicted the top subject areas in terms of research quantum, funded research counts and percentage funding. It displayed research counts in decreasing order from Social Sciences to Energy on *'WW'*. Overall, there are major four core subject categories in Scopus, i.e., Life Sciences which consist of more than 4,300 titles; Health Sciences having more than 6,800 titles including Medline, Physical Sciences includes 7,200 titles and Social Sciences and Humanities having more than 5,300 titles. The Scopus covers the distribution of publications spread out in 27 areas of research. On *'WP'*, The figure presented that Social Sciences is the most preferred area of research with 281 counts out of which 8 funded counts with 2.84% fundings; but Economics, Econometrics and Finance has been ranked first under percentage funding of research followed by Earth & Planetary Science and Physics & Astronomy. At the contrary side on *'WW'*, Social Sciences has been identified at top position for most preferred area of research having 16226 counts out of which 231 funded counts with 1.42 % fundings; but Energy has been ranked first with 100% funding under percentage funding of research followed by Psychology and Physics & Astronomy. Surprisingly observed that the Medicine has emerged the most preferred research funding discipline consisting 226 funded counts out of 9051 records but not surprisingly, as expected overall fundings on *'WW'* is much higher than *'WP'* in all subject disciplines.

4. CONCLUSION AND DISCUSSION

The research quantum on *'WP' and 'WW'* produced during two eras, i.e., post world wars have been analyzed. By understanding the requirements of basic strategies for sustainable peace, vivid dimensions of research have been gauged to compile a comprehensive collection of facts to support strategists on the theme. A continuous comparative growth of research quantum and funding counts have been examined to draw research trends and calculative indications for future perspectives. The study inferred that research quantum on *'WW'* is manifold higher than *'WP'* and an overall ratio is 1:80 but collapsed to 1:5.83 while calculated by 19 and 70 years Af1&2WW respectively. Further, an overall highest research quantum and funding research on *'WP'* and *'WW'* has been produced by the USA; followed by UK, Australia, and China on *'WP'* and similarly followed by UK, Germany and France on *'WW'*. Being Medicine the most preferred research funding discipline has raised many abundant queries and issues, i.e., how medical science is involved in peace and war? ; what is the multidisciplinary approach to medical research in peace and war? ; are anxious nations evolving biological weapons? ; are biological weapons supplementing and adding more destructive value or replacing traditional war weapons? Presently, an answers of these queries are still excavated but beyond doubt that medical science has a vital impact impending peace and war. While analysing funding of research by strategically aligned nations, apparently observed that US, UK, and South Korea have funded on both *'WP'* and *'WW'* themes. Overall, universities have produced the highest quantum of funded research consisting 263 counts followed by medical institution consisting 113 counts and speculations indicated that universities also produced much-funded research in medical sciences which might have enhanced the quantum of medical funded research. Furthermore, it is inferred that leading strategic aligned countries, i.e., USA, UK, Australia, Japan, Canada and South Korea are still the leader in producing the highest research and as well funding of research which reiterates their vital strategic impact on peace and war.

REFERENCES

1. Bornmann, L. (2013). What is societal impact of research and how can it be assessed? A literature survey. J Am Soc Inf Sci Tec, 64: 217–233.
2. *DeGraw, David. (2010).* The US War Addiction: Funding Enemies to Maintain Trillion Dollar Racket: Four ways to see the true drivers of current wars around the world. http://www.alternet.org/story/147217/the_u.s._

war_addiction%3A_funding_enemies_to_maintain_trillion_dollar_racket. Accessed 22 November 2016.

3. Dravec Braun, J. (2012). Effects of war on scientific production: mathematics in Croatia from 1968 to 2008. Scientometrics, 93(3): 931-936. doi:10.1007/s11192-012-0735-4. Accessed 5 June 2017
4. Fisher, Louis. (1974). Reprogramming of Funds by the Defense Department. The Journal of Politics, 36(1): 77-102.
5. Gilpin, Robert. (1981). War and Change in World Politics. New York: Cambridge University Press, 272.
6. Jeff McMahan. (1991). War and Peace, A Companion to Ethics. Oxford and New York: Peter Singer, Basil, Blackwell, 384-95. http://jeffersonmcmahan.com/wp-content/uploads/2012 /11/War-and-Peace.pdf. Accessed 01 September 2016
7. Kant, Immanuel. (1795/1991). Zum ewigen frieden [Perpetual peace]. In Nils Petter Gleditsch, Jonas Nordkvelle and Håvard Strand. 2014. Peace research – Just the study of war? Journal of Peace Research, 51(2): 145–158. doi:10.1177/002234331 3514074 / Accessed 10 March 2017
8. Mutz, R., Bornmann, L. and Daniel, H.-D. (2015). Testing for the fairness and predictive validity of research funding decisions: A multilevel multiple imputation for missing data approach using ex-ante and ex-post peer evaluation data from the Austrian science fund. J Assn Inf Sci Tec, 66: 2321–2339.
9. Nalimov, V. V., Z. M. Mulchenko. (1969). Naukometriya. Izuchenie Razvitiya Nauki kak Informatsionnogo Protsessa. [Scientometrics. Study of the Development of Science as an Information Process], Nauka, Moscow, (English translation: 1971). Washington, DC: Foreign Technology Division, US Air Force Systems Command, Wright-Patterson AFB, Ohio. (NTIS Report No.AD735-634).
10. Nils Petter Gleditsch, Jonas Nordkvelle and Strand, Havard, (2014). Peace research – Just the study of war? Anniversary Special Issue: Journal of Peace Research, 51(2): 145–158

11. Ohlson, Thomas. 2008). "Understanding Causes of War and Peace." European Journal of International Relations, 14(1): 133-160.
12. Richards, Pamela Spence. (1982). Information for the Allies: Office of War Information Libraries in Australia. New Zealand, and South Africa. The Library Quarterly, 52(4): 325-347.
13. Shapira, Philip and Wang, Jue. (2010). Follow the money. Nature, 468(7324): 627-628.
14. Singer, J David and Small, Melvin. (1972). The Wages of War 1816–1965: A Statistical Handbook. New York, Wiley. 419.
15. Stewart, Frances. (1998). The Root Causes of Conflict: Some Conclusions; Working Paper Number 16. Queen Elizabeth House, University of Oxford, 27.
16. Sun Tzu. (5th century BC). The Art of War: The oldest military treatise in the world. Translated from the Chinese By Lionel Giles, M.A. (1910), England. Allandale Online Publishing. https://sites.ualberta.ca/~enoch/Readings/The_Art_Of_War.pdf. Accessed 01 September 2016.
17. Teggart, Frederick J. (1941). War and Civilization in the Future. American Journal of Sociology. 46(4): 582–590.
18. Turner, Michael J. (2005). To Reduce Wars and Fighting to a Minimum: Thomas Perronet Thompson on War and Peace during the 1840s and 1850s. War in History, 12(2): 125-155.
19. Vardakas, Konstantinos Z., et al. (2015). An analysis of factors contributing to PubMed's growth. Journal of Informetrics, 9(3): 592-617.
20. William W. Hood, Concepción S. Wilson (2001). The literature of bibliometrics, scientometrics, and informetrics. Scientometrics, 52(2): 291–314. doi: 10.1023/A:1017919924342. Accessed 06 October 2016.
21. Wang, Jue and Shapira, Philip. (2011). Funding acknowledgement analysis: An enhanced tool to investigate research sponsorship impacts: the case of nanotechnology. Scientometrics, 87(3): 563-586, doi: 10.1007/s11192-011-0362-5. Accessed 12 July 2017

Special Library Research Ethics

Dr. Ranajan Kumar

Dept of lib & inf.sc central library
B.R.A. Bihar University Muzaffarpur.
Email. :- ranjanbrabu@gmail.com

Mr. Keshav Raj

Student :- M.LISc.(S.V.N. University), MP.
Secretary:- Dr. Ranganathan State Library
Samiti Muzaffarpur (Bihar)
Email:- Keshavraj1508@gmail.com

Mr. Roshan Kumar

Student:- M.LISc. (S.V.N. University)MP
Vice-President:- Dr. Ranganathan State Library Samiti
Muzafffarpur (Bihar)
Email:- Crazzyroshan@gmail.com

ABSTRACT: This article provides a critical overview of the most important issues pertaining to the ongoing debate on special library research ethics. It critically describes their problems of continuing concern:

The question of whether the distinction between therapeutic and non-therapeutic research should be upheld:

The question of whether the currently demanded best proven diagnostic and therapeutic method of treatment for all research subjects is feasible both in developed and in developing countries and whether it should be upheld;

The questions of who owns special library research ethics guidelines and regulatory frameworks and how decisions about changes to such special library research ethics guidelines can possibly be achieved given that it seems to be the case that genuine disagreement about issues of content is possible and likely.

1. Introduction:

Research work is generally a collaborative endeavor , requiring the co-ordination among different individuals of different institutions pertaining to a single or more than one disciplines. Implanting ethical sensitivity and reasoning into academic research readily implies the need to questions as (A) Right or Wrong behaviour and

action of participants in the research process; (B) positive and negative impacts of research out comes; (C) adherence to and complains with a code or norms of professional conducts prescribing research based responsibilities that help distinguish between socially acceptable and unacceptable behaviour. Although it may be argued the most adults acquire a sense of right/wrong, acceptable/ unacceptable, Fair/unfair during childhood and adolescence, through various social settings .Likewise family ,School, Religion etc. moral developments life-long, because it is conditioned by factors such as peer groups. Influences, compliance with regulatory mechanisms in force, willingness to honor relationships-based social contracts and ultimately, proactive principled behaviour inspired by a higher level spiritual consciousness.

2. Need for special Library Research Ethics:-

The contemporary need for academic research ethics arises because of a shifting paradigm of "Taken for granted" special Library staff honesty towards one of taken-for granted special Library staff dishonesty. In the past, teacher and researcher behavior's were presumed to be ethically positive. Additionally, presumed to be ethically positive. Additionally civil society lacked insight regarding moral inadequacies of Academic researcher's and demonstrated a high degree of tolerance regarding ethical wrong doing of researcher/guide because of their unquestioned moral authority. For theremore, the special community was universally acclaimed as having a strong moral identity and higher order moral maturity compared with the rest of society. In present times, the seamlessness and accessibility of web-based information in the post internet era has led to a reversal of circumstances causing increasing incidence of special Library staff dishonesty among researchers and students. What is more , acts of economic dishonesty are branded as illegal and immoral "White collar crime" in the teaching system.

Again the backdrop, this paper posits that manages in different institutions and at various level as member of civil society, must be equipped to deal with ethical issues and Dalian as that arise from positive of power because they are instrumental in shopping the ethical infrastructure of their organizations. By and large, researcher and literature dealing with responsible library management has down played the significance of propagating and guiding research and ethics among special researcher's as information research user's. Business ethics and research ethics address concepts and frame works for ethical decision making that can be fruitfully used by any type of library like wise public, private, institutional etc. manager's to promote responsible research conduct in higher educational institutions.

3. The following benefits are:

(1). Ethical norms /codes of conduct help to further the aims of research interns of knowledge , truth and avoidance of error.

(2).Research is often a collaborative endeavor, requiring the co-ordination among different people in the different disciplines and institutions.

(3). Ethical norms in place enforce accountability of researchers and public intellectuals using public funds.

(4).The presence of ethical norms and conducts in research creates public support for research emanating from trust in the quality and integrity of research.

(5).Enforcement of ethical norms in research indirectly promotes numerous moral in research and social values such as regulatory compliance.

(6).Possible ethical lapse in academic research vis-à-vis research stake holders.

(7). Research supervisor secrecy, rust and others are effected because dishonesty.

4. Principles of research Ethics research ethics firmly on the following universal principles:

1. Honesty
2. Objectivity
3. Integrity
4. Carefulness
5. Respect for Intellectual property
6. Confidentiality
7. Responsible publication
8. Responsible mentoring
9. Openness
10. Respect for colleagues
11. Social responsibility
12. Non-Discrimination
13. Competence

14. Legality

15. Animal care

16. Protection of rights of human subjects protection.

At last the emerging role of the 21th century librarian as an advocate of Research Ethics needs more documentation and recognition. It cannot be denied the librarians are crucial in supporting the furtherance of research and learning and therefore occupy a vantage positions in research ethics advocacy. Increasing emphasis and popularity of on line electronic sources to promote research ethics is a major first steps the librarians, Library managers, Information officers can consider for self –learner in research ethics.

Best practices in the Promotion of Reading Habits among school children.

Vijayalaxmi. A. S

Librarian
Apeejay School Kharghar, Navi Mumbai.Maharashtra
Pin- 410210
E-mail: vshivanigi@gmail.com
AND

P G TADASAD

Professor and Chairman
Department of Library and Information Science
Akkamahadevi Women's University, Vijayapura, Karnataka
E-mail: pgtadasad@gmail.com

Abstract: Developing a good reading habit among children has always been a concern for all stakeholders and parents in the education field. An attempt is made in this paper to sketch the experiments and best practices made at Apeejay School Kharghar, Navi Mumbai. Maharashtra, to enhance the reading habits of children. It can be observed that holistic suite of content services and programmes are been practiced to enhance reading and sustaining it as a good habit among children of different age groups. Cooperation and collaboration of all stakeholders is required to inculcate, enhance and promote reading habits in school environment.

Keywords: Reading habits; School children, India; Maharashtra; Navi Mumbai; Kharghar; Apeejay School;

1. Introduction;

Reading is one of the fundamental building blocks of learning in the early stages a child and is the very foundation on which the edifice of the child is to be built.It shapes the personality of an individual and helps them to develop the proper thinking methods and brings in creativity. It enhances the chances of success at school and beyond. Reading makes a person better informed andhave better understanding of others. It helps in creating independent learners, promoting literacy and attaining education.Reading is a skill that must be made to be practised and nurtured from the earliest stage of learning to the end. It is considered as the vital foundation on which other academic skills are built. It is one of the most important components of our language and an essential tool for lifelong learning.Makotsi (2005) emphasized that "reading is a very important issue which is not about employment but a necessity, the basic tool of education."

Poor reading habit has great consequences on the academic performances and thought process of every student. It holds the most significant place in education as a means of communication in a highly literate society. By reading a good book, one can not only earn knowledge but also gain experience in life, and realize the eternal truth.

Greene (2001) states that "reading habit is best formed at young impressionable age and school but once formed it can last long in one's life.This necessitates schools to provide conductive environment in the school premises and adopt proper strategies to imprint reading habits among schoolchildren. School library can play a vital role in enhancing the reading habits of children.Hence an effort is made in this paper to document the best practicesofApeejay School, Kharghar, Navi Mumbai.

2. Apeejay School, Kharghar, Navi Mumbai:

Apeejay School, Kharghar, Navi Mumbai, is a CBSE-affiliated school. The school was established in the year 2000. Today it is rated one among top schools in Navi Mumbai with approximately 2500 students and90 teachingstaff. The school is promoted by the Delhi-based Apeejay Education Society (AES). The school offers Pre-primary, Primary and Secondary courses from Montessori to class XII. The school ensures a life-enriching experience for students by facilitating them with the best faculty, infrastructure, opportunities and environment.

The school has a well-equipped library with a rich collection of latest books in different fields of study and of general nature. At present there are 11440 books in the library. More than 12periodicals and journals are subscribed in order to update the students with current affairs and also help them develop with a view to take on the competitive world of today. At present a professional librarian with one Class IV employee manage the routine library operations. However the class teachers assist the librarian during library periods. The library functions from 8.00 am to 4.00 pm on all working days.

The collection in the library includes dictionaries (monolingual and bilingual), encyclopaedias, biographies, yearbooks, text books, reference books, fiction, nonfiction, pictorial books, pop-up books, story books and short stories in English, Marathi and Hindi, rhymes and short poems, animal and nature stories etc. The collection of the library is built on the advice of the principal with recommendations from the teachers. The teachers recommend books based on their interaction with children and their parents.

3. Inducing Reading Habit: Experiences and experiments

A number of guidelines are laid down by CBSE in order to promote the reading habits among children. Schools can organize a number of activities like:

- Dramatization of the story
- Debating and defending the actions of characters in the story.
- Making an audio story out of a novel/ text to be read out to children.
- Interacting with the author
- Holding a literature fest where various characters interact with each other
- Symposiums and seminars for introducing a book of an author to the children
- Creating their own stories
- Critical evaluation of the characters, plot and the storyline
- Book reviews of the book of any genre chosen by a student that can be assessed by the teachers and even displayed on the notice board.
- Refresh the library books as often as is practical. Kids love to discover new things and the easiest things to discover are those closest to hand. Sometimes refresh can simply mean moving the books around.
- If possible, make sure children have a quiet place and a quiet time where they can always find a refuge for reading.
- Schools' participation in the literary fest and other such activities in and around the city.
- Intra-class and interclass reading competitions can be extended to inter school competitions too. Topics like Cultural Heritage of India, Lives of great philosophers and thinkers like Gandhiji, Ravindranath Tagore, Swami Vivekananda, Ramakrishna Mission etc., relevant to Indian culture and philosophy and traditions can be taken up
- Lecturers and symposiums with experts to motivate the students on 'reading habits'
- All prizes should be in the form of books of famous authors and writers.

- If the student/students pen down some book or story, the respective school should come forward to assist the young writer/author in publication, printing or even giving it a nice launch pad.
- Any other relevant activity as per the discretion of the school/institution.

A librarian working in a children's library according to Uaboma (2010), must line up various activities to be able to achieve this goal which include these: Story-telling, Craft making, Film shows, Puppetry, Talks, Book exhibition, book talks and Library weak. For a school librarian every hour is a challenge as he/she will come across children of different age groups belonging to different culture with different IQs and EQs. Children of the present day are rather technology savvy. They have very little or no interest in reading. It's been rightly pointed out by The Hindu (2004) that in an age where browsing the net, children playing with funky handsets and passing non-stop SMSs seem to be the order of the day, reading a book in a peaceful corner of a library has become an archaic idea for most of the children. While technology is taking a steady control over individual lives, the reading habit is fast vanishing into thin air.

Under the circumstances following experiments have been made in the library to inculcate and enhance the reading habits. These activities have been undertaken in collaboration and discussion with teachers, Principal, school authorities and parents. Though emphasis is given on curricular reading to satisfy the curricular needs of the children, co-curricular and extra-curricular reading is encouraged on the whole to expand the horizons of knowledge among children.

Library period: There isone library period per week for students from Class II to Class X, where their teacher accompanies them to the library. For classes XI and XII they are allowed to visit the library in their free periods.

Library tour: Interacting with pre-primary children is a great challenge as they are less than 5years and 10 months. Pre-primary sections comprise of LKG and UKG classes. Class teachers of Pre-Primary sections take the children on library tour to the library and introduce them to the concept of library. They seem to be happy with the interaction with their teacher and fascinated by the books containing colourful pictures.

Children are shown all the materials in the library and are introduced to the book world. After the library tour their smile makes the difference. The class teacher reads the story books as they do not have any library period and sometimes they are shown short films on fantasy stories which they can easily connect to their own little world of fantasy they've created in their minds. Picture books, pop-

up books, games, puzzles are also provided. The librarian acts as a facilitator by providing appropriate books to the class teacher.

4. British Council Reading Challenge Programme:

In order to overcome the barriers of technology and induce a reading habit among school children, British council had come up with a six weeks programme- "British Council Reading Challenge" for classes KG to VIII standard. The British Council(BC) brought their books to the school library. In these six weeks, the children were given as many books they wanted to read but the children had to take a membership. Children were also given a record book having sections which had to be filled up by the student with details like – Title, Author, Review, Character, about the book, opinion of the book and Sketch of the character they liked, etc. after they were done reading the book. KG & UKG students were accompanied by their teachers. They were taken to the racks from which they would select the books, children were too excited to select the books and show the review written by them and take the signature. They also recommended some of the books for their friends to read. BC also had sent their representatives to conduct workshops to the participants, the topic of the workshops were 1) How to write the book review, 2) Readathon, and the third 3) Workshop was on speech and drama.Children participated in these workshops actively. At the end of the six weeks programme children were given prizes such as medal, certificate, and prize for the highest books reader.



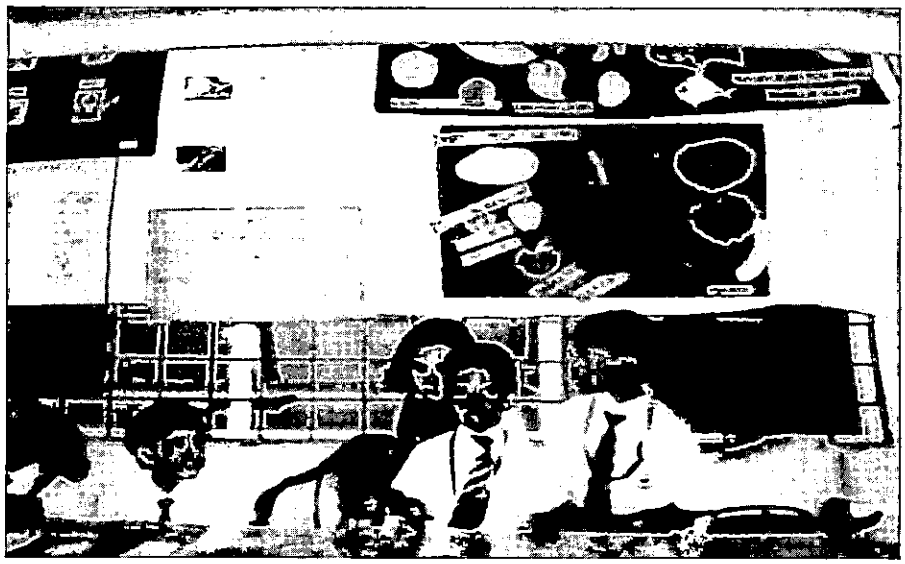
Activity conducted by British Council at the workshop of drama and speech.



Activityconducted at the workshop of Readathon.

Children of Class-I have their class library. Children of class II to class IV are asked to bring a story book or fantasy or popup book or short story book or any book which they want to share with fellow classmates from their home. They are instructed to write their names and other details on the book. And at the end of the year they are returned the books by the class teacher which they take them back home. A child who is responsible is made in charge of these books (monitor) and the child will take care of the class library. Whenever children want to read the story books from the class library monitor in charge gives the book and takes the book back at the end of the period. All the children are instructed that these books should not be taken home. Children really enjoy reading their friends books, sometimes they are made to read these books in front of everyone in the class. They enjoy reading and queue up to get their chance. It is fun to get involved with these children as they come up with lots of stories and activities with their own creations. This is one of the innovative activities taken up with the support of school authorities and teachers to develop the reading habits of children.

In free periods they are given these books to read otherwise their teacher reads the books for them. Sometimes they are also shown adventure, fantasy, short documentary films where they watch these films with lots of curiosity. They are too young to understand the words described in the books but are very curious to understand each and every line in the books. They are also introduced to picture reading. It is a fun doing this activity. They come up with lots of their own stories and experience through actions. They come up with lots of doubts and questions and ask single question more than 10 times. These children have to be answered with utter care and accuracy. By this way they try to read more books to understand universe of knowledge in a better way.



Group of primary class children explaining their activity to the class in the story book reading activity.

Children from class II to Class IV have a library period weekly once. They are accompanied by a teacher to the library. After getting introduced to them, they will be shown the library materials, and later instructions on how to use library materials will be given - such as how to hold the books, how to turn the pages, how to start reading and not to write anything in library books and how to behave in the library etc. Children in this age group are very curious and will become too enthusiastic after seeing the library books. They are given such books which have bold font and colourful pictures. They are told to bring a pad or a note book where they write difficult words, some interesting facts, etc. They are also given instruction to always keep a pocket dictionary with them, so that they can use the dictionary to see the meanings of the difficult words by themselves. They take it as an activity to find the word meaning and enjoy doing it. Occasionally story-telling, games, puzzle solving activities will be used to enhance the reading habits of children. Within 10 minutes books are exchanged among children and children come up with numerous questions which need to be answered carefully as they expect flawless answers to all their questions. They are too tender in age they share all their happiness and naughtiness with the librarian. It's a great uphill task while handling these children and making them to sit in one place and read. But it's a great challenge to the librarian and the accompanied teacher. Hindustan Times student edition is circulated among children of Class IV every-day.



Children form middle group using the school library in their library period.

Children were told to read about the authors, list them and write the works and the awards won by the authors. They are told to make a note book in which they can note down these activities. All the children goggled, or asked their parents to read for them. By which they were able to know about the authors and their works. It was also too exiting to get involved with them. Each and every student was given a chance to read about the author in front of the class, which also exited them too. In this way children are made to read different types of books which is of interest to them.

Secondary sections comprise of classes from class V to class XII, where children aged between 10 and 17 pursue their studies. These children have library period once a week and are given a library card. They can borrow a book for a week. Children of this age group are already introduced to reading as such they are always looking for the library period so that they can borrow new book. Fictions, nonfiction, novels, biographies, etc are heavily borrowed by these children. They have their mind set about the books they have to read. Sometimes children have been asked to write book reviews of whatever they have read in the library or from the borrowed book in every week. They will write book reviews of Indian as well as foreign author's books including classics and popular ones.



Children displaying their activity during Read a book week.

5. Read a book week

Children of class 4 to 8 th stds were told to read a book i.e Harry Potters week in this week children were told to read all sereies of Harry Potter books. There are 7 in sereies. Students were too exited to hear about the activity.They were told to write about the author of the book, to sketch, paint the cover page as they imagine while reading, they can write about their favorit character, perform skit with the groups, etc, the best were displayed on the notice board, they were also told to tell the review in the assembly. They were made to understand that all the seven sereies cannot be purchased by all, they were told that they can exchage the books with their friends if they had other sereies of Harry Potter. It was found that children did started exchanging books, specially children who were reserved for themselves came forward to exchange the books with their friends.

6. Authors Week

Children were given the names of the famous Indian authors in the first week, where they will write about the author , i.e their history, life, works and awards. They were also told to stick the pictures of the author and their works in the library note book. In the second week they were told to write about forigen authors and do the same. Children were so eager to know about the authors and their life, works and awards.

7. Visit to different libraries :

In the proxy class hours, the activities, functions and services of different libraries in India and the world were discussed by the librarian. They were told to visit libraries in Mumbai if possible voluntaraily with their paernts and they were also told to write all the information about these libraries whenever they visited. If they cannot visit they were told to google the information if needed. As the children are tech savy the very next day the students started visiting or googling the libraries and explaining about the libraires they had vivisted or googled.It was noticed that this activitywas very innovative and successful in creating awareness about libraries – a place that can promote the reading habits among school children.

Newspaper reading is made compulsory for this age group of children. The Times of India Student edition is circulated among children from Class 1V to class XII. These children are free to access library materials and go around to select the books of their choices. They read, discuss, interact with the librarian speak about the books, etc. They also interact with librarian about the books they have read and also suggest some good books to be read by children which are not available in the library.

For the classes V, VI and VII students, to make their reading interesting activities such as authors week were organized – where a student writes about the author, participates in competitions like pick and speak, makes a sketch of the author etc. These children would come to the library every week and they were given a topic and group of 10 members were made one group they were told to prepare a skit were each member of the group would participate.



Librarian helping the children in finding the references in the library.

Weekly one or two children are asked to show the cover page, contents pages and read out the book review in the assembly. Some other children are asked to critically analyse the book review that has been read by other child. This activity has been introduced on the advice of the Principal. Children use the library for informational and recreational reading. They also use the library to get informational support for their completion of projects which are included in their curriculum. Children of the school who go for various literary competitions in and out of Mumbai make use of the library as maximum as possible.

Reading competitions are also regularly organized on the campus and on occasion's lectures by experts will motivate the students on `reading habits'. Whenever prizes are to be distributed to the winners of various competitions, all prizes are preferred in the form of books of famous authors and writers. The write ups, poems, stories, and other writings penned down by the students are normally published in the school souvenir to be brought out every year on the occasion of annual day.

8. Conclusions:

Apeejay School, Kharghar, Navi Mumbai thus is making its sincere efforts in promoting and enhancing reading habits among the school children throughout the academic year. It can be noticed that a conscious attempt to encourage reading habits among school children had been taken up in the school. It is a challenge to convince students to pick up books and engage with the author, story, character and ideas presented in the reading passage or book. In order to promote independent/ reading skills specific initiatives have been introduced which are yielding fruitful results. The Library and librarian have been given prime importance in the process. The school authorities recognize library as heart of the institution and that library plays a vital role in all the academic activities of the school. Promotion of reading habit cannot be done in isolation as it is evident from the experiment that cooperation and collaboration from all stakeholders is required.

References:

1. Apeejay School, Prospectus, December 2016.
2. Busayo, IsaacOluwadare (2011), The School Library as a Foundational Step toChildren's' effective reading,**Library Philosophy and practice**http:// digitalcommons.unl.edu/libphilprac/665/

3. CBSE (2003), Circular no. 17 dated 16 July, 2003.
4. Decker , Alexander (2011), Role of the School and Public Libraries in Promoting Reading Culture in Nigeria,***International Journal of Research in Education***, 6 (1& 2): pp 259-269.
5. Edeole, Ilori Maria and Adejoke, AbdullahiMostura (2016), Promoting Reading Habit Among Secondary School Students in Logos State: The Role of Library & IC T, ***Asian Journal Of Education & e-Learning*** 4 (5), pp145 – 152.
6. Greene. B (2001),"Testing reading comprehension of theoretical discourse with close", ***Journal of Research in Reading***, 24(1),pp.32-98.
7. Haliru, RamatuAbdulrashed; Abdulkarim, Marjantu; Mohammed, AliyuDogara and Dangani,Babangidaumar(2015), Assessment of Reading Habit among Secondary School Students in Kadun Metropolis, ***IOSR – JHSS***,20 (10), pp 12-17.
8. Mokatsi.R (2005), Sharing Resources- how library network can help reach education goals. East African book development association.A research paper looking at libraries in the developing world.Comission by book Aid International.
9. Organising School library – 2006, Cbse.nic.in/LIBRARY-1-99, pdf
10. RaneethaRajaratnam(2013), For the Love of Reading ! New Strategies to engage the next generation of readers, ***IFLA,WLIC***, Singapore.
11. Uaboma, M.U, (2010) "The Nature; Principle and Concepts of Literature and Library Services for Children". In Modern Library and Information Science for Information Professionals in Africa (Madu, E.C and Ezeani, C.N ed) Ibadan: Titling, 79-92.
12. Whitherthe Reading Habit? The Hindu.2004, [Online] Available: http://www.hinduonnet.com/m/2004/07/12/,

Authors Profile



Mrs.Vijayalaxmi A S presently working as Lbrarian, Apeejay School Kharghar, NaviMumbai..Has contributed 15 articles in the LISc research field. Completed MLISc, MPhil, at Dept. of ResearchStudies, LISc . Gulbarga University, Gulbarga. Area of interest includes: Research methodology, User studies, Academic Libraries, Information retrival and services. Information Technology.



Prof. P. G. Tadasad, presently working as Professor and Chairman in the Department of Library and Information Science, Karnataka State Women's University, Vijayapura. He has published more than 180 research papers and edited eight books.10 students have successfully completed their Ph D under his guidance and 4 are presently working under his supervision. He has served the university in various capacities as University Librarian, Director, PME Board and Nodal Officer for the University under NMEICT project, NAAC and KSET. He is the Special officer to the Vice Chancellor, Karnataka State Women's University, Vijayapura. He is a recipient of AG Motiwale Award for Young Professionals 2002 for Best Paper at 48th All India Library Conference of ILA held at NIMHANS, Bangalore, 2003. His area of interest include: User Studies, Knowledge Organization Systems, Digital Divide and Academic Libraries.

Capacity Building Programm for Library Professional's of Gautam Buddha Central Library Babasaheb Bhimrao Ambedkar University, Lucknow: A Study

Nutan Gaud

(Research Scholar)
DLIS, BBAU, Lucknow, (gaudnutan@gmail.com)
and

Dr. M. P. Singh

(Associate Professor and Head)
DLIS, BBAU, Lucknow, (mpsinghdlis@gmail.com)

Abstract: Due to lack of new skills and technologies required for library, Library Professionals are under the serious threats and now the situation is that library professionals are needed some capacity building program for their skills development. The present study is focused on the library professionals of Gautam Buddha Central Library, BBA University, Lucknow. The study conduct to find out the requirement of capacity building program required for Library staff's also find out the required skills for our library Professionals.

Keywords: Capacity Building, Skills and Efficiency, Types of Skills, Level of Capacity Building.

1. INTRODUCTION

A Capacity Building Framework

"Specifically, capacity building encompasses the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environment potentials and limits and of needs perceived by the people of the country concerned".

Capacity Building - Agenda 21's definition (Chapter 37, UNCED, 1992.)

Broadly speaking capacity building has meant "increasing the ability of people and institutions to do what is required of them" It is the process of developing and strengthening the skills, instinct, abilities needed to survive , adapt and thrive in the fast changing world." Discussion on the skills and efficiencies for the modern library LIS staff has emerged as a significant topic in library literature in recent years. The issue of the new requirements and satisfaction of users has been raised within library sectors, such as knowledge about recent computer technologies, latest managerial or communicational

skills etc. professional need to grow and enhance their capacity for user's satisfaction.

2. Capacity building for whom?

Another question is that the need of capacity building for whom required. The primary goal of capacity building is to develop the capacity of each and every professional as per the requirement of changing environment.

There are four level of capacity building needs:

1. Structure System and roles
2. Staff and facilities
3. Skills and
4. Tools.

Emphasizing systems capacity building would improve the programs, projects and also effective use of resources.

There are three main reason for library professional need to increasing their skills.

- The transition from paper to paperless society as the dominant from of information storage retrieval and dissemination. Convergence of different media such as text, graphics and sound into multimedia resource has direct impact on his transition.
- Increasing attention on quality customer services, performance measurement bench marking and continuous improvement.
- New forms of work organization such as and user computing work teams downsizing re-engineering, outsourcing etc.

3. Types of skills required for LIS Professionals

In present day environment professionals owe much greater responsibility to be an effective information professional. Look at the existing skills of the professionals reveals that for facing the challenges of today and tomorrow, they not only need to acquire wider range of skills but also need to keep themselves up to date.

Basically, a summarized set of skills under the three broad categories of skills, i.e. generic, managerial and professional skills.

4. Generic Skills

A generic (Transferable) is one which is not specific to work in a particular occupation or industry, but is important for work, education and life generally. These are the some example of generic skills are as follows communicational skills, Analytical skills, Problem Solving , Decision Making, Presentation Skills, Stress Management, Time Management, Group Skills etc.

5. Management Skills

The ability to make business decisions and lead subordinates within a company. Three most Common Skill include: 1. Human Skill- the ability to interact and motivate 2. Technical Skill – the knowledge and proficiency in the trade and 3. Conceptual Skills- the ability to understand concepts, develop ideas and implement strategies. Competencies include communication ability, response behavior and negotiation tactics. These are the some example of managerial skills, planning and organizational skills, Local and global thinking, finance management skills, managing change, Team building, Leadership, Project Management Resource Management.

6. Professional Skills

Skills that graduates need to succeed in Professional Practice These range from highly specific ones related to the graduate's field(s) to more general, transferable ones such as communications and ethical practices. These are the some examples of Professional skills are as follows:- Informational Technology skills, Information Literacy, Technical Professional Skills, Knowledge Management, Traditional Skills etc.

7. OBJECTIVE OF THE STUDY

- To find out the requirement of Capacity building Program.
- To identify the required Skill for Library Professional.
- To suggest Improvement measures based on the inferences drawn from the study.

8. RESEARCH METHODOLOGY

This study has conducted based on the survey method of research. Data will be collected through questionnaire. There are seventeen library professionals in the Babasaheb Bhimrao Ambedkar University in which four are library attendant and they are not included in this study. The questionnaire has been distributed least 13 professionals and 12 questionnaire returned back.

9. ANALYSIS

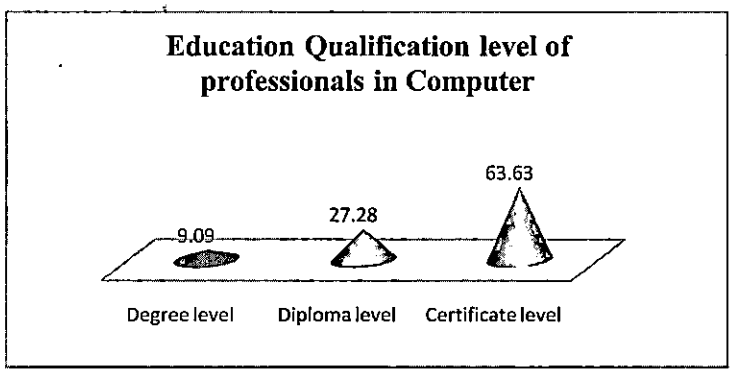
1. Knowledge of computer

Table no. 1 shows that all the professionals are aware with the computer knowledge. They are aware with computer and its applications.

Entity	No of professionals	Percentage
Yes	12	100
No	0	0

2. Qualification in Computer

- Graph no. 1 shows that 9.09 percent professionals have degree level qualification, 27.28 percent professionals have diploma and 63.63 percent professionals have certificate level qualification in computer and applications.



3. Use of Library Automation Software (KOHA) by Professionals in its all modules

All the professionals said that they are working on library management software KOHA. 72.72 percent professionals are familiar with all the modules of KOHA and rest of 27.28 percent professionals are not able to work on all the modules of KOHA.

Entity	No of professionals	Percentage
Yes	8	72.72
No	3	27.28

4. Awareness about Capacity building programme

Table no 3 shows that 83.33 percent professionals are aware about capacity building programme and rest 16.67 percent are not aware with capacity building programme.

Entity	No of professionals	Percentage
Yes	10	83.33
No	2	16.67

5. Participation in Capacity building Programme

Table no 4 shows that 66.67 percent professionals are participated in capacity building programme rest 33.33 percent professionals have not attend any capacity building programme.

Entity	No of professionals	Percentage
Yes	8	66.67
No	4	33.33

6. Awareness about different skills required for Library Professionals

Table no.5 shows that 100 percent professionals are aware about the different skills required for Library professionals.

Entity	No of professionals	Percentage
Yes	12	100
No	0	0

7. Table no. 6 shows that the answer for following question "If You Want to attend any workshop or seminar, would you get permission from your Institution?"

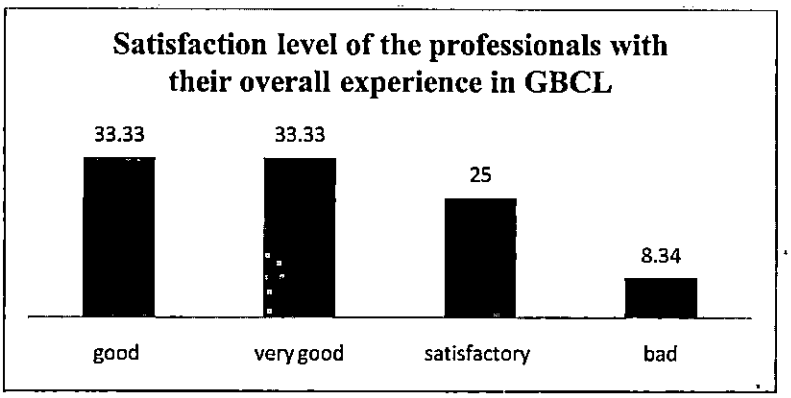
Entity	No of professionals	Percentage
Yes	9	75
No	0	0
Sometimes	3	25

8. Table no. 7 shows that answer of the question" When You started your job, were you given any training programme related to your job?"

Entity	No of professionals	Percentage
Yes	8	66.67
No	4	33.33

9. Table no. 8 shows that Level of satisfaction or Overall Experience of Professionals at GBCL.

Entity	No of professionals	Percentage
good	4	33.33
very good	4	33.33
satisfactory	3	25
bad	1	8.34



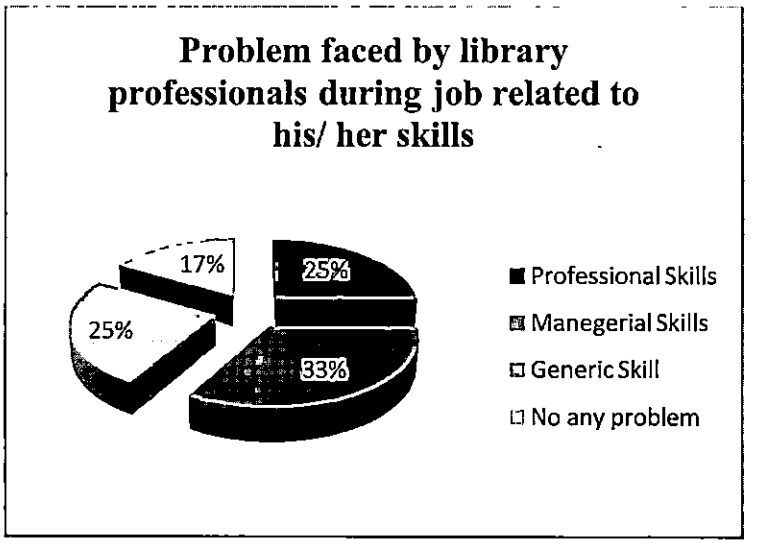
10. Table no. 9 shows that the Awareness about recent trends in Library.90.91 percent of the professional are aware about the recent trends of the library and rest 9.09 are not aware.

Entity	No of professionals	Percentage
Yes	10	90.91
No	1	9.09

11. Table no. 10 shows that Problem faced by Professionals related to Skills

Entity	No of professionals	Percentage
Professional Skills	3	25

Managerial Skills	4	33.33
Generic Skill	3	25
No any problem	2	16.67



FINDINGS

The Study arrived at the following finds based on the result from the analysis of data gathered. Number of respondent selected from the central library of BBAU, Lucknow is 13 out of 17 Professionals.

1. All Professional have computer knowledge and most of them have certificate level knowledge.

2. We find that most of the professionals are able to works on all the module of KOHA.

3. We find that in the present study most of the professionals are aware about capacity building program and most of them are attended the capacity building program.

4. Majority of the professionals are aware of the different skills required for library professionals.

5. Majority of the professionals get permission very easily from their concern university to attend workshop or seminar.

6. Most of the professionals get training programme at the time of their joining.

7. Majority of professionals are satisfied with their job.

8. Professionals are aware with recent Library Trends.
9. Professionals faced some problem in professional skills and also in generic skills.

10. CONCLUSION

In the technology driven Knowledge Society, academic Librarians or library Professionals has a very important role to play as they have to satisfy the critical multidimensional information needs of their users. So they have to use latest technological tools in which the user is comfortable. There is a need to equip them with emerging skills required for the electronic information environment.

However today, the changing perception of users and the technological advancement have forced the library professional to introduce new services based on user interest. Therefore, adequate information and knowledge of different skills and current trends in libraries with a positive attitude can make the real difference between the real and desired situation.

11. RECOMMENDATION AND SUGGESTIONS

1. Encourage Professional to participate in refresher courses, Seminars, Symposia and Workshops etc. Which will offers wide exposure and which in turn will enhance the technical competency and efficiency of the professionals.
2. Every University must allocate a separate fund adequately for the Library professionals to attend the training programs from time to time. In order to full utilize the talents of the staff and to explore their potentialities, it is necessary that the staff is provided facilities for development.
3. All the Professionals should be given responsibilities and recognition as well as a say in their work in order to motivate them.
4. A Sound policy of technical training and skill enhancement programs are to be framed to continuously induct the staff to the newly emerging technologies and methods.

REFERENCE

1. Honadle, B. W. (1981). A capacity-building framework: A search for concept and purpose. *Public administration review*, *41*(5), 575-580.

2. Lansang, M. A., & Dennis, R. (2004). Building capacity in health research in the developing world. *Bulletin of the World Health Organization*, *82*(10), 764-770.
3. Singh, S. P., & Pinki, H. (2009, October). New skills for LIS professionals in technology-intensive environment. In *International Conference of Academic Library organized by University of Delhi, Delhi (India)* (pp. 5-8).
4. ur Rehman, S. (2016). Developing new competencies among LIS professionals: Challenges for educators. *Pakistan Journal of Information Management & Libraries (PJIM&L)*, *9*(1).
5. Potter, C., & Brough, R. (2004). Systemic capacity building: a hierarchy of needs. *Health policy and planning*, *19*(5), 336-345.
6. Duarah, K. (2016). Need of Training for Continuing Professional Development of Professional Staff Working in University Libraries.
7. (n.d.). Retrieved September 27, 2017, from http://www.gdrc.org/uem/capacity-define.html

Competencies and Skills for Information Professionals An Outlook

Ajeemsha. s

Librarian, TKM College of Engineering, Kerala
Email: ajeemsha13@gmail.com

Abstract: The dynamic environment of the LIS sector dictates the need for library and information professionals to remain flexible and adaptable to change. Librarians are being swept along the currents of rapid changing technology. To adapt with these changes, the workforce needs to be flexible, adaptable and current. Organisation can succeed only if they have competent and capable human resource to serve the users. Library professionals should constantly appraise themselves before others evaluate them. Knowledge itself cannot help a professional to sustain in this digital era. It's all about the ability to perform. This paper deals about the two major components of performance: competence and skills.

Keywords: Competencies, General Competencies, Skills matrix, Core Competencies, Skills

1. INTRODUCTION

The work environment is constantly changing in libraries with the advent of ICT. The success of an organisation depends on the adaptability towards change in anticipation. Continuous training and Education help them to keep abreast with the recent development in these technologies. The exploration and adoption of new technologies offers librarians an opportunity to evolve their role.

2. COMPETENCIES

Competencies are a combination of skills, knowledge and behaviours important for organizational success, personal performance and career development. Professional Competencies relate to the special librarian's knowledge in the areas of information resources, information access, technology, management and research as well as the ability to use these areas of knowledge as a basis for providing library and information services. Personal Competencies represent a set of skills, attitudes and values that enable librarians to work efficiently, be good communicators (Competencies for the Special Librarians of 21st Century).

Stages in Competency

Weightman (Weightman, 1994) suggests that competence moves through four key stages:

Appreciation: Know what is meant by a term and what its purpose is

Knowledge: Understand in some detail the principles of the topic and how they are applied.

Experience: Have acquired knowledge and skills.

Ability: Be able to apply knowledge and skills with satisfactory results.

3. COMPETENCY MODELS

The conscious competency model is used to explain the process and stages of learning a new skill (behaviour, technique or ability). The stages are follows (Wood, 2007):

Stage 1 –*Unconscious incompetence*: People in this stage are unaware of the skills and knowledge essential to perform the task. The standards are bare minimum. The person is unable to perform the routine activities. The individual should be motivated to learn and make belief about the benefits to be achieved.

Stage 2 –*Conscious incompetence:* The individual is aware about his incompetency. They are aware of how much they should equip themselves for catering user needs. In simple they have the knowledge that they don't have knowledge.

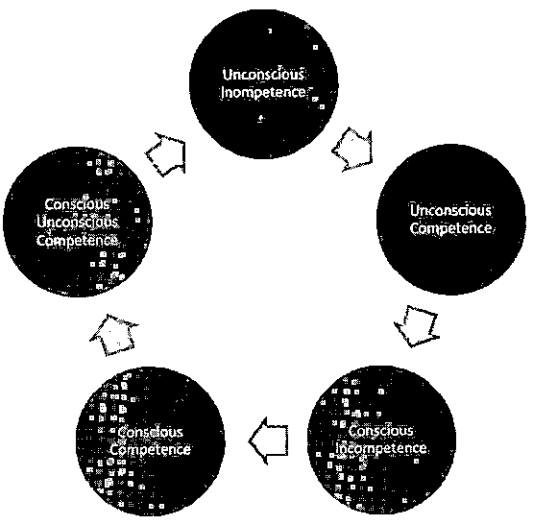


Figure 1: Conscious Competence Model

Stage 3-*Conscious competence:* In this stage the individual have adequate knowledge and experience, but continuous practise is required to gain mastery. Also the person can perform the skill without assistance. Here the person is able to demonstrate his skill but unable to instruct others.

Stage 4- *Unconscious competence:* The person might now be able to teach others in the skill concerned, although after some time of being unconsciously competent the person might actually have difficulty in explaining exactly how they do it – the skill has become largely instinctual. Here the professional have adequate mastery in his job, his theoretical knowledge has been transferred into practical knowledge.

Stage 5- *Conscious unconscious competence:* The ability to perform a job is at its pinnacle. The individual is able to complete not only the task by himself but also have the ability to get it done by other colleagues also.

Competencies are dynamic, that revolves around the axis of organisational needs. For any organisation to be sustainable, it must be able to deliver services not only to the current requirements, but also to the near future, in anticipation. To ensure that the workforce should stay fit for purpose and practise, an organisation must possess an effective and efficient HRD strategy that addresses any performance gaps or deficiencies.

4. COMPETENCIES FOR LIS PROFESSSIONALS IN THE 21ST CENTURY

Competencies have been defined as the interplay of knowledge, understanding skills and attitudes on the part of information professionals required to execute their job effectively from the view point of both the performer as well as the observer.

Special Libraries Association (SLA) is a US based organisation for innovation information professionals and their strategic partners. Its mission is to promote and strengthen the capabilities of the professionals through learning, advocacy and networking initiatives. In 1997 it published document entitled 'Competencies for LIS Professionals in the 21st century'. This document identifies four major areas of competencies in which the information professional must demonstrate professional skills; namely managing information organisations, managing information resources, managing information services and applying information tools and technologies.

The document isolates that personal and core competencies as being crucial to the success of any working in the profession. Personal Competencies represent

a set of attitudes, skills and values that enable practitioners to work effectively and contribute positively to their clients and profession. These competencies included being strong communicators, demonstrating the value of their contribution, remaining flexible and positive in an ever changing environment. Core competencies anchor the professional and personal competencies. SLA believes that these two competencies are essential for the success of information professional.

5. COMPETENCE –BASED/RELATED PAY

Honey (Honey, 2001) identifies that competencies have the potential to aid learning and development, but only if they are integrated into other key processes such as recruitment and selection, feedback and appraisal, coaching, mentoring and pay. Without this integration there is a real danger that competencies are related to meaningless lists of words with no real impact.

Roberts (Roberts, 1997) links competences to the initial stages of the recruitment and selection process. The approach include

- Definition of key competencies- personal attributes knowledge, experience, skills and values- to meet the organizations long term needs.
- Combining a range of selection techniques and methods to obtain reliable data on all core competencies.
- Feeding the information gained into the induction, appraisal and development of employees.

6. CORE AND GENERIC COMPETENCIES

Core competencies are those activities that set the library and information profession apart from other occupations. Core competencies are associated with particular types of proficiency which are special to the organisation and differentiate it from others. Strategically it is relevant for an organisation to identify its core competence and derive maximum yield.

Generic competencies apply to any group in any discipline and usually referred to as 'transferable skills'. These competencies include a range of attitudes, values and skills from flexibility, valuing diversity, and technological skills, to interpersonal skills, strategic planning and resource management.

7. SKILLS

Competency and skills are different entities. Skills are specific in its purpose and it is the knowledge of using technologies, such as: the knowledge about word processing, library software etc. Skill is proficiency, facility that is acquired or developed through training or experience.

In recent years technology has made tremendous impact on every profession including librarianship. Librarians should sharpen their traditional skills and acquire new skills to become analysts of information instead of being collectors of information, there by complementing their own skills. The information world of next generation is for those who excel in the collaborative skills. Librarians must develop new skills to support IT abled services. Because the traditional library services are currently technologically supported, added several new challenges to librarians.

The dynamic nature of library and information work has resulted in fundamental changes to the roles and responsibilities of librarians. This in turn leads to considerable discussion about the spectrum of skills and knowledge required by the new generation Information Professionals. Skills (Palmer, 1999) are the whole set of knowledge required for the effective performance. Often the skills are categorised into three groups.

a) People skills

- Personal attributes
- Interpersonal and people management skills

b) Business skills

- Organisation specific
- Transferable

c) Expertise skills

- Information related skills
- Information technology related skills

The major skills required to become information specialists are

- To identify action opportunities
- To develop information projects, policies, plans and programmes.
- To develop research projects

- To manage economic, human and physical resources.
- To select and evaluate information resources and serve according to the user needs.
- To identify, collect, evaluate, organise and disseminate information.
- To create and to manage information needs and systems through new technologies and applications.
- To contribute Knowledge Management in the organisation.

LIS educators propose a wide range of competencies, skills, knowledge areas, topics or modules for their courses. The identification and definition of the key skills and knowledge, which are specific to the newly emerging modern day library and information professional has become a critical issue.

8. SKILLS MATRIX

The purpose of the skills matrix (Abell & Skelton, 2001) is to provide a snapshot of the current skills with in the department. The matrix gives a clear picture on the competence level of the staffs in an organisation, qualitatively. The skills matrix provides an instant image in the distribution of skills in an organisation. From this the organisation can identify any shortfall in the individual's knowledge, skills and attitude, required to perform.

P

Name	Classification	Cataloguing	Referral	CAS
•A	•C	•C	•-	•T
•B	•C	•T	•C	•-
•C	•-	•-	•C	•C
•D	•T	•T	•C	•C
•E	•C	•-	•T	•-

- C=CCCC = Competent; T=Undergoing Training

9. CONCLUSION

In the era of dwindling budgets, libraries are inclined to extract the maximum output from LIS professionals. The library set up in the current ICT environment is vibrant, requiring staff in all areas to perform a variety of tasks. If library staffs has

to deliver a maximum contribution to the organisation and society they need to gain knowledge and develop new skills and to share their knowledge with others.

As there is no physical boundary exists in the digital world, it is quite challenging to be successful information professional. Competency can be developed through formal training, participation of seminars/symposia and conferences, attending training programmes and workshops, from informal groups and peers, online learning tools, refresher courses, short term courses and by self-learning.

REFERENCE

1. Abell, A., & Skelton, V. (2001). *Developing Skills for the Information Services Workforce in the Knowledge Economy: A Report on the Outcomes of Eight Scenario Planning Workshops.* London: TFPL.
2. *Competencies for the Special Librarians of 21st Century.* (n.d.). Retrieved December 28, 2006, from Special Libraries Association.
3. Honey, P. (2001). *Improve Your People Skills* (2 ed.). London: IPD.
4. Palmer, R. (1999). The Identification of Organisational and Individual Training and Development Needs in HRD. In J. P. Wilson, *Human Resource Development* (p. 127). London: Kogan Page.
5. Roberts, G. (1997). *Recruitment and Selection : A Competency Approach.* London: IPD.
6. Weightman, J. (1994). *Competencies in Action.* London: CIPD.
7. Wood, A. (2007). *A Comprehensive Library Staff Training Programme in the Information Age.* Oxford: Chandos.

Authors Profile



Dr. Ajeemsha.S is working as College Librarian at TKM College of Engineering, in Kollam, Kerala. Prior that he worked as Librarian in JNTBGRI, Trivandrum. He worked as Guest Lecturer in North East Hill University, Shillong as well as in Kannur University, Kannur. He was awarded Ph.D. from University of Delhi in 2015. He holds M.L.I.Sc. Degree from University of Kerala. He cleared UGC- NET with JRF. He has already 7 papers in his credit.

E-mail: ajeemsha13@gmail.com

Consumption of Library as a Quintessential Resource in Teaching- Learning Process of English Language in India.

Vibha Tripathi

Department of Applied Science and Humanities,
Universal college of engineerimg , Mumbai..
Email id: vibhatripathi95@gmail.com

Abstract: Library has always been a profound and galvanizing tool in teaching - learning process of English language. In India where memorization and conditioning teaching and learning is invigorated at elevation and promotional level, students dearth an edge over the practical and implicative understanding of English language. The major objective of this paper is to emphasis on the rich and polishresources concealed in our Indian libraries which can furnish the cognitive domain of a student in English language, and linguistics. The paper also gives scope to English teachers to understand to dominate library as a gauging and intense tool in English learning. In India, as English has become a professional and academic language, its mandatory and high time for English educators to update and make Indian students to work on every minute details of English language. With use of extensive library , students will take a recovering sprite over competitive world .

Keywords: English Teaching, Library, Education, Creativity, Digital Libraries, Journals, Reading.

1. Introduction

"Reading maketh man perfect"

The ancient India has keenly seen the profound interest in gaining knowledge by rishis, pundits, and, many language scholars. During those days practicality and application of individual's knowledge had taken a center stage. People use to wander in jungles, get trained under their gurus in gurukuls .AncientIndia was the rich era of Upanishads and ayurvedas. With this historical background ,India is showered and blessed by rich resources in teaching –learning. Then time changed , and came the dominance of british rule which introduced English as a major language and invention of English journals, magazines and newspapers and with these inventions came the existence of libraries . The dominance of English language was demanding the English learning resources in India. And britishers has brought into account several libraries Library in India has been an epitome of knowledge,guidance , and a right place for a research scholars and English is

an need of an hour. With increasing amount of digitalization , mobile phone and internet , the value of library teaching has been diminishing . Thereading culture has become weak over years and time. India is the country of multilingual where people speak varied languages. English language has ruled with dominance the Indian education system. In India , people imbibe English language on peak. English language has become a major bread earner in India. If a candidate lacks the knowledge of reading , speaking and writing of English, it becomes a huge challenge for an individual to really mark his positive image . India has imbibed English language gracefully in which library learning and reading has played a quintessential role. The best writers and novelist like tagore ,sarojininaidu, aurobindughosh and subashchandrabose and Nehru were just not great leaders but also they were master of their words because they were rigorous readers . And this has to be made realize to every student and teacher who want to grip English language learning that library plays a vital role towardsimprovisation of English language teaching learning process.

In this paper, shown the use of library in English teaching learning process. With increasing competition in professional world, English language learning and knowledge has become a mandate. The paper concentrates on the intense use of library in enhancing the skills of English language learner and It throws light on the English teaching methods with use of different types of library.

2. Library teaching –learning

English is known to be a library language as it requires extensive reading to understand the terms , concepts , prose poetry, literature , linguistics or grammar. An English teacher and student will have to refer varied English books to update in English language. Here a teacher have to take a gauge into the needs of individual student in English. In india , English is a second language. So English tutors need to play an important role in educating students appropriately so that students can face the barriers of English language confidently.

3. Role of a teacher in creating value towards library learning.

Teacher can brief students about the story hour and other complimentary programs which she will be conducting during library hours. This will increase the level of interest among students towards learning english.

A teacher should train students to understand and ask about the English Sections they need in library for English studies.

For students who are beginners in learning English, teacher can arrange books

in library which are easy read. Eg: short stories,basic grammar books, board books, comics books, English magazines etc. (Great for English learners. Don't feel ashamed. Check them out!).

Teachers can encourage group learning which can help students to discuss and clear doubts. This group studies can help students clear their doubts and will foster them to be habitual.

Teachers need to train students about seeking help of library in tracing the English study materials and question banks .Students many times areclueless about the study of Dictionaries.

Teacher can keep data of students who are regularly attending the library session. Also most of the students are unaware in India to access the list of books available in their library. A teacher can brief students to understand and find the catalogue for the books they need to read. This exercise will make their work easy and make English reading as fun.

In use of library for English learning, a librarian has a very vital role to play. Librarian should seek knowledge of all the new publications, journals , novels, comics and subject related material . Students should be briefed with every visit of library about the new editions of books.

A English teacher can use flash cards to make students understand better about English . a good librarian need to keep resources related to English subject such as various kind of dictionaries, flash cards, videos, audios, etc.

A good library can also include language club. Indian students ideally complain that they lack fluency in English speaking. Here the question arises that how much effort a student puts in readimg books or number of dedicated hours given to English reading. Here a teacher need to prepare a module which students can follow and keep a knack of their reading. Teachers can play library games with students give English projects which requires use of library.

4. Library Online and offline Dictionaries:

Teachers should encourage the use of digital library .English is a word language. it requires access to various kind of dictionaries. With the help of dictoniaries, any student can gain the good proficiency over this foreign language. With use of dictionary a student will understand the contemporary usage and forms of words, spellings and new words. Learning Dictionaries like Oxford English Dictionary, Webster, bharadwaj, mcmillain should be available in every Indian library where students can refer to dictionary resources.

5. A Expanded Approach

English language learning will be able to benefit greatly from the library system, regardless of location or cultural background. As the resources available to most urban libraries are easy to exchange, the following would be readily available:

- Audio books
- Multilingual books (IE, English/Spanish)
- Language reference books (bilingual dictionaries, etc.)
- Resources to educational workshops
- Multimedia (DVDs, CDs, Internet)

6. Linguistic Analysis

Language development tends to shoot at the age of 3 in many cultures, and peters out by the age of 18. Students that hope to learn a second language beyond this tend to struggle for the most part.

Audio books, for example, will give English language learners the opportunity to not only hear the language, but will also gain revelation to a diverse culture. Spoken and formal modes of speech are sometimes more complicated to learn, whereas proper grammar can be easier to learn. The furthermostadvantage and assistance of utilizing audio books in one's journey to speak another language is that they will be exposed to common idioms, phrases and slang that may not be taught in a formal language course. Moreover, this particular method would sit well with those who learn best by listening to lectures or hearing instructions (Auditory Intelligence/Musical Intelligence).

In library,the stage of multilingual books also offer individuals an opportunity to read the language of choice, which enables the reader to sound out the language internally. Other conception that could be utilized are the group reading methods, which would require small groups.

Public libraries have resources and contact information for student and adult education courses. Through various departments, individuals can take ESL/ELL courses as well as sign up for second language courses. Such courses are typically taught by language educators from area schools or professors .with this technique would work well with those who are Interpersonal in intelligence, as such individuals learn through conversation and the exchange of ideas and thoughts.

General multimedia has a galvanizing effect on teaching learning process of

English through use of library. Multimedia collection of foreign films and musical selections are an asset for those who looking to understand English language through films and documnentaries and internet. With world of internet, teachers and students are capable to find out and access online materials.

7. Conclusion

library plays a big role in English teaching learning process. If a student really want to gain proficiency in englishlanguage, reading of books matters on large scale. As English is not a native language, it is imbibed from foreign country, teachers also need to be updated and profoundly briefed with new volumes of good Englishbooks which can help students enhance their fluency in English.

Embedded Librarianship: Present and Future of Academic Libraries

Prof. Hemant Sharma

Professor
SOS Library and Information Science,
Jiwaji University Gwalior
and

Somesh Vishwakarma

Assistant Librarian
Jawaharlal Nehru University
New Delhi

"Initiatives are made by the librarians to let the libraries always to create new modes of librarianship in various dimensions. As Head of a library it is required to work as a relationship binder with knowledge and requirements of patrons and objective must grow and leads in turn as not only a information provider with greater alertness to the information and knowledge needs of the group. Embedded librarian essentially means partnerships. Instead of working and giving support from outside as a facilitator to provide books, documents and information to the researcher, student, faculty members, it should be more than that. Now a days it is a strict need of librarians that they must be experts and capable in handling and dealing with physical and digital information. Without skills librarian cannot develop to successful librarian into the future. Libraries and librarians are required to find ways to make changes that will allow them to continue to provide relevant, tailored information through library resources to their user groups. In higher education environments, librarians can be embed in different ways depending on the needs of their user groups. Some librarians embed in traditional classroom environments, supplementing class trips to the library with librarian visits to the classroom. Their engagement can be over two or more class sessions, even co-teaching the class in some cases. This model provides in-depth knowledge of student research projects during the research and revision process."

1. INTRODUCTION

A librarian is a person who is working for the management and services of the Libraries. Since decades, library professionals are identified as a caretaker of the

library and its books. Common people cannot differentiate between other library workers and librarian or between library professionals and those performing technical processing work. With the change of era and introduction of digital information system people do not use to come to the libraries very frequently to use the library resources. All the resources and information is available online and can be accessed being at home, office, hostel, hostel mess or at cafeteria. They can fetch the information anytime or anywhere by just login into with authorised ID and password. Users can use their desktops, laptops, smartphones or tablets and Moreover, they can access any type of information may be academic, professional, personal or statistical information by this medium.

Some users those who are coming to a library because they find it as a quiet and comfortable place to sit and study and to attend any orientation programs organised by the library or for a book discussion or to use Free WiFi or public computers. They mostly do not go and seek help from available library staff and resulting that the traditional reference activities are shredding day by day. Some smart library leaders recognized the trend of users and In fact, they have realized that the new environment in which abundance of digital information is offering the users to seek the information anytime anywhere and this is leading to a challenges to the librarians and giving them an opportunity to rethink, transform and reframe the traditional librarianship and services to their users and to do delivery the information services in such a way which can be setting up a new trend with more challenges so that they may be more reward giving and more added value to the user communities.

Every time initiatives were made by librarians to let their libraries to create and setup new models of librarianship in various forms and to meet the new challenges. Librarians moves in the stacks to look for the users or students who might be interested in seeking help in the collection of their research material or they set up small libraries or branch libraries in student schools/centres or at hostels to offer library services in their term-papers and other assignments given to them by their instructors in the class. Libraries extend the Wifi and laptops facilities in attract the students to make use of the libraries and library material instead of using the online material got after doing google search. The google hits may not be always academically useful and here the librarians work starts in packaging the information for the use of its user groups. Some academic institutions designate librarians in school centres to help out faculty members and students with the less walking distance, librarian being in the same building they get the information or material quickly. Also some librarians are appointed who help students with the information, they are just a kind of academic advisors to give advice on academic

courses and programs. Some Librarians are becoming content and index writers to authors to advocate them in getting research material and some are being consulted on demand to meet the expert information needs.

2. DEFINITION

The phrase "embedded librarian" has been coined by the Barbara Dewey in 2004. Later, number of definitions have emerged in the support of the phrase. "The definition and idea from David Shumaker and Mary Tally fits most instances of embedded projects of today and had been defined embedded librarian as a librarian focused on the needs of one or more specific groups, building relationships with these groups, developing a deep understanding of their work, and providing information services that are highly customized and targeted to their greatest needs". "(Shumaker & Tally 2009). The skills in this definition are highly valued in today's libraries. In January of this year, ALA President-elect Maureen Sullivan noted that more and more librarians work in collaboration with others, outside of their own work units. Embedding is one way to work outside of traditional boundaries and to engage with students and patrons in an authentic way while gaining understanding of their day to day information needs".

Jezmynne Dene has defined the term embedded librarian by describing her professional experiences by the initiatives of embedded librarianship at the Claremont Colleges, Dene noted that "we chose to define an embedded librarian as 'an integral part to the whole,' based on the geological definition of an embedded element". "Brief definition which captures the essence of the concept of embedded librarianship is a distinctive innovation that moves the librarians out of libraries to create a new model of library and information work. It emphasizes the importance of forming a strong working relationship between the librarian and a group or team of users/students who need the librarian's information expertise".

As librarian of library it is required to work as a relationship binder of knowledge with users and with the understanding of group of work and its objectives to grow, and lead in turn to greater alertness to the information and knowledge needs of the users.

In traditional librarianship while providing reference service, it is a service provided whether at a reference desk or virtually, by phone, email, chat or text messaging. Librarians typically provide library users with an answer, advice, or instructional tips and guidance to locate the research material and the librarians' responsibility ends there. However, according to the philosophy of embedded librarianship it is need to understand the library user's topic, title of research and

its objective in detail and in fact, to prepare the bibliographical list of the available documents in the library and supplying it to treat the information seeker's intent or desire of information. "Whether it's the learning outcomes of an academic course or the commercial objectives of a market research study, embedded librarians need a full understanding of the nature of the task and the goals of the effort. The embedded librarian functions as a team member and shares the responsibility of team and organizational outcomes with all the other members of the team. While it means many things to many people, the key element of embedded librarianship is to move librarians out of the traditional library setting, whether physically or virtually, and into a new framework for providing library services". Embedded librarian essentially means partnerships.

3. Idea of embedding a Librarian

Embedding a librarian in course group or a Brightspace is a best way to provide a consistent and a personalized assistance for user community or a researchers group. An embedded librarian may be especially useful for online classes, distance learning classes that involve a research component. It can also extend students' access to research material with the help of orientation session and session with instructions to use online databases and other databases to access information. Librarians can actively participate in the courses during sessions with the faculty member. Few examples where and how librarians can interact with students include:

- setting up "virtual office hours" (where ask the librarian, a discussion board or other methods may be used to deliver the information services)
- blogging or Twitter
- alert services to students about the latest books or articles which are pertaining to the relevancy to their topics of interest and research (via email or the Brightspace Announcements)
- framing a bibliographical Research Guide related to their course's and research assignments
- designing questionnaire or feedback forms for pre- and post-tests to assess the students' performance in their research and to test their skills.

Instead of working in outer ring as a facilitator to provide books, documents and information to the researcher, student, faculty members. Embedded librarianship

means to have a partnership with and being a part of the research outcomes. "There is also a physical location element and it is already mentioned that the breaking down of these restriction of working within the Library walls. Integral is the key word, and this is significantly used where this role differs and diversifies from the traditional reference work of a librarian".

"Schumaker compares the roles decidedly eloquently when he outlines the differences between traditional and embedded librarianship".

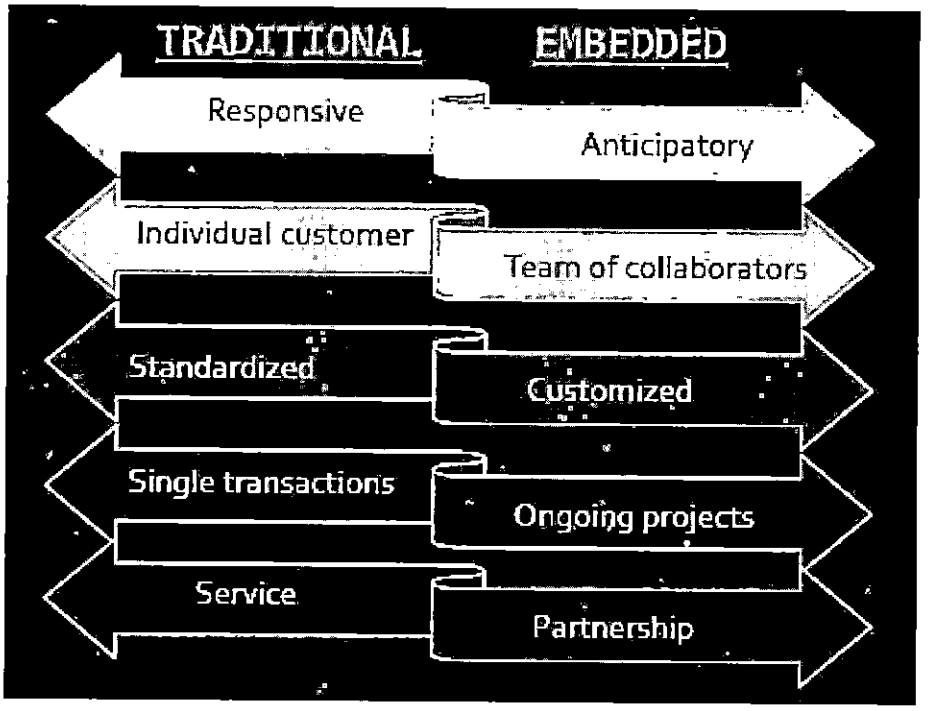


Figure : Difference Between Traditional and Embedded Librarianship

Traditionally, as a matter of fact that librarians are highly responsive and they are known for our responsiveness whereas embedded librarians have to go a step further than responsiveness to anticipate. A senior Professor says that embedded librarian can suggest the research ideas. A corporate manager says Librarian suggested ways of accomplishing tasks where they can save the team time money and effort. Embedded librarians are not required to be asked they are closely associated with the research team and they are having close working relationships with the team to identify needs and find solutions.

The library services based on traditional model has a part of personalised service where giving help and guidance to its users help one at a time. In academic setup instructors are assigning team projects or group projects and embedded

librarian is to help students in the preparation of collaborative work to help in research and development of the team project. The embedded librarian to work as a team member of a department, a research group, a student project team to make it as a more effective because when they will work as whole team the outcome will be good.

Traditionally, the library services, use to ensure the equal treatment to all is based on a standardized model and also bit bureaucratic since there were certain rules, policies, guidelines and standards. In some way or the other this practice was good. However, different group of users have different needs and a document one group needs might not be of any use to another and therefore, the flexibility becomes essential. The job of an embedded librarian requires the strong working relationship formed through involvement as a team member to understand the information requirement of team and needs and address them in a customized way.

Traditionally, circulation of books and documents to its users are the key service of reference work. However, now the emphasis shifts from the transaction to the project and the embedded librarian's services are valued by the supply of value added material, to grow the impact of student learning outcomes, or by team success, and not so much by the number of transactions completed. The documents are requested, instructional sessions are added as a value added services of the traditional library.

Finally, the tradition of librarianship holds the services as one of our highest values. The concept of effective library service lead many innovations in the profession of librarianship has a strong service ethic. Being service oriented, treating users well and caring about to helping them effectively, whereas, embedded librarians are responsible for more than that.

4. Advantages

What may replace the traditional Librarianship model and may be trying different approaches, with job titles such as virtual librarian, roving librarian, personal librarian, subject librarian, consulting librarian, and embedded librarian. The virtual librarian is available online 24/7 remotely via all kinds of communication media such as phone, email, instant messaging, text messaging, and virtual world's connection. The virtual librarian schedule shifting and collaborative arrangements among librarians in different time zones and even different institutions to ensure their availability, however, the virtual librarian working in passive mode, who use to wait for the users to come up to the virtual desk in cyberspace and ask a

librarian. Embedded Librarianship is to go into the user group to offer the help and services. The advantages from the aim and objective of embedded librarianship is to maintain a partnership and which is more than service. It is to drive the ideas behind and is more effective to make the use of information by academicians and by research group.

The popularity of online classes is rising day by day. The reasons for conducting online class (MOOCS) may vary from academic group to other group. The main aim was to solve the travelling problem for the students visiting from distinctive places and cannot attend the classes physically and cannot visit the libraries physically and so they do not have the same exposure to the services of the library. For purpose, the library is subscribing the increased the number of electronic resources rather than print books, journals and so that can be accessed remotely. Many students face difficulties and require help when they are not able to access resources remotely. Embedded librarian will be extending help and support for these students in their virtual space. Embedded librarians can be helpful in followings:-

- help in micro topics and ideas with added value for their research
- identify the exact keywords and frame search terms for their topics
- help students to find credible sources of information and available peer reviewed articles
- help in giving the information about available library databases, e-books and services
- provide information about citations sources
- brief introduction about library or research

5. Skill and Techniques of Librarian

Now a days it is a strict need of librarians that they must be experts and capable in handling and dealing with physical and digital information. Following are five skills which every librarian must possess or develop, in order to succeed now and to travel as a librarian into the future.

6. Information curation

Since the primary role of any type of library is to do the information curation and it is a need that every librarian must have the skill to perform curation of

information. Librarian must have skill to do a content creation and information curation becomes a more critical skill. Librarians role are becoming day by day vital in the process of evaluating and editing and in categorizing and classifying of the material for easy retrieval and use.

7. In-Depth, high value research

In today's era of digital information environment the main task is to find the information yourself and it that has threatened the existence of librarians. Therefore, self-finding and self-searching of information may lead the academicians sometimes in to the world of grey knowledge. Most people lack in good research skills and they do not get exactly what they want. So the requirement of the librarians with the skill of having good searching capabilities and having the skill of dealing with a velocity and volume of information. The librarians must be aware about the online databases in-depth so that they can retrieve the information in short time period.

8. Digital Preservation

In the past time libraries have traditional resources such as books, magazines, maps, etc. Whereas, now a days those assets are getting digitized and the original source of content is born digital. Therefore, the librarians must possess the skill to preserve, manage and access digital documents.

9. Mobile Environment

Now a days information is being store in the cloud, and searched for and consumed using mobile devices, librarians must be familiar with and knowledgeable about the mobile environment. Librarians skilled in the use of mobile devices like tablets and smartphones can help ensure that their limitations and their strengths are being considered and built-in to the library's information systems and portals. Librarians should understand the pros and cons of cloud computing, to serve as advisers and consultants to those decisions as they apply to information curation and digital preservation.

10. Collaboration coaching and facilitation

Librarians today should become more vital in facilitating with the information and material. They should be more a coach, orienteer or a trainer for any advice

groups about procuring outside data and making the best use of it. They can position themselves as valuable resources by collaborating more actively with management and leadership within the organizations they work.

Librarians who adopt these skills will revitalize their careers, increase the visibility and viability of their profession, and become valued as the important information management professionals they are.

11. Where and how are librarians embedding?

The librarians can be embedded in the institutional content management system (CMS). The librarian can be a member in faculty discussion boards along with embedded or supplemental material (i.e. podcasts, slide shows, videos, worksheets) for their various research projects. Embedding librarian in content management systems to seek the help in conducting online courses and the growth of this model has accompanied the huge growth of online learning in higher education.

Librarians can be embedded in school/centres/departments as a liaison and to extend the efforts to go beyond the duties of a bibliographer and he can be given a office in the department itself or can work from the library but should be closely affiliated with the department and might be paid out of departmental funds.

Librarians can learn the ways and needs of their patrons and they often work to procure organise, arrange and retrieve the information for their student group.

12. New opportunities for embedding

The need of uploading online lecture video with bibliographical content and facilitating with free webcasting tools to capture class lectures and creation of many more learning objects.

Reference questions can be answered instantly

Librarians can continually create and share instructional videos and can be involved in podcasts.

Usability of social networks for distributing course instructors as a way to create online learning communities.

Librarians have successfully embedded in environments like Twitter, Facebook, class wikis, and more.

Librarians are using social media tools to provide real time interactive sessions with students as part of a larger embedded project.

Librarians can create Virtual office in all environments to remain available 24/7.

13. Toward a True Partnership to academics and academicians

Traditional models of library services like reference service which is losing its importance in most of the academic institutions because of the availability of online resources. The requirement is arising of help desk in a libraries who must be an expert librarian in subject area and in IT to guide or help the students in navigating and downloading the information. Libraries and librarians are required to find ways to make changes that will allow them to continue to provide relevant, tailored information available through library resources to their user groups. In recent years, librarians have been moving away from the concept of the library as a space and towards the idea of library as a service. The goal of embedded librarianship is to take this one step further from a service to a true partnership by putting the efforts to get involve in the research work of the users. Being an embedded librarian he should take time, but it is time well spent and, regardless of how many librarians an organization embeds or where they reside, an important relationship is always created. It is this relationship a new kind of partnership that will demonstrate the library's dedication to finding innovative ways to continue to add value and align with the continuously shifting needs of our organizations.

14. Embedding a librarian in Innovative Spaces

Embedding of a librarians can be done in a specific innovative spaces. Librarians can play vital role in helping and assisting the students groups by facilitating the specified book or documents. Librarians can also suggest the time saving ideas to complete the task in lesser time. The utility of end note tools and medley tools to arrange the bibliographical references as per the standards within a fraction of seconds. They can also help in guiding the use of multiple use of data by using commercial software's or open source available software. The content page creation the creation of digital archives can be done by the librarian who is in the study group of the students. Even librarian can play a vital role and become valuable collaborators, trusted instructors, and partners in shaping the curriculum and broad institutional goals beyond the boundaries of the library.

15. Summarising the embedded librarianship

As to move on the path to put forward a step ahead for embedded projects

with librarian in any academic institution, it is important to remember that the planning process may be cyclical. Librarians must be included in the course or content creation discussion boards as members. The ideas related to the essence of information services and IT can be taken from the librarians. Each phase of the project gives some outcomes and requirement for the further changes or revision in flowchart may be required for the best future results. As the project grows, the analysis of the assessment measures to continually improve. A successful project might be as simple as embedding in a single on-campus class to learn more about a student group, or as large as partnering with a whole college/university. Librarians also understand the need of the time and must be ready as always to accept the challenge of embedded librarianship and work as a team member of any user group in their institution. The growth of online learning and the ease of creating learning objects make this a great time to experiment with embedded librarianship at academic institution.

References

1. Shumaker, D., and M. Talley. 2009. Models of embedded librarianship: Final report. Alexandria, V A: Special Libraries Association.
2. Mastel, K. 2011. Extending our reach: Embedding library resources and services within extension. In Embedded librarians: Moving beyond one-shot instruction, eds. C. Kvenild and K. Calkins, 211–218. Chicago, IL: Association of College and Research Libraries.
3. Dewey, B. I. (2005). The Embedded Librarian -- Strategic campus collaborations. *Resource Sharing & Information Networks, 17*(1), 5-17.
4. Haycock, L. & Howe, A. (2011). Collaborating with Library Course Pages and Facebook: Exploring new opportunities. *Collaborative Librarianship,* 3(3), 157-162.
5. Kvenild, C. & Calkins, K. (2011). *Embedded Librarians: Moving beyond one-shot instruction.* Chicago: ACRL.
6. Shumaker, D. (2009). Who Let the Librarians Out? Embedded librarianship and the library manager. *Reference & User Services Quarterly, 48*(3), 239-242,257.
7. https://www.aallnet.org/mm/Publications/products/aall-ilta-white-paper/embedded.pdf

8. https://pgcc.libguides.com/c.php?g=60064&p=386011
9. https://libsource.com/top-five-skills-required-for-librarians-today-to-morrow/
10. https://scarlettlibrarian.wordpress.com/2012/11/06/what-does-em-bedded-librarian-mean/
11. http://researchguides.library.vanderbilt.edu/embeddedlibrarians

Library Services in the age of ICT: A survey of Private Medical Colleges of Uttar Pradesh.

Satish Kumar

Research Scholar
Dept. of Library and Information Science
Shri Venkateshwara University Gajraula Uttar Pradesh

Abstract: The Paper studies the use of library services in the age of ICT (Information and communication Technology) their increased use has changed the library scenario from physical to virtual. Users' preferences are more for e-resources .It is necessary to connect the library services through the Internet and other sources of access information services to the ability to characterize and categories users The electronic resources have become a very usually used format of choice for medical library.

Professionals providing Quality Information for Improved Health. For more than a century, the Medical Library Association (MLA), through its members and programs, has served society by providing quality information for better health care, the education of health professionals, the conduct of research, and the public's understanding of health references

Presents results of an investigation to study the contemporary use of library services in the age of information and communication technology(ICT) based resources and services in the private medical College's library of Uttar Pradesh.

The study was performed via a questionnaire survey of the library and confined only to the 15 private medical colleges.

Keywords: Library Services, ICT, Electronic Resources, Medical Information.

1. INTRODUCTION

The library that grows fast both in terms of size and services may have to go for the computerization of various house-keeping operations (i.e. acquisition, circulation, cataloguing etc.) .In order to take care of the growing collection, the document should be digitized or microfilmed, the new procurement should be made in the form of e-journals e-books etc. To cope with increased readership, the library should go for the video terminal and ultimately to the digital or virtual library. Previously the libraries grew with the collection, but nowadays the digital libraries or virtual libraries or e-library does not show the characteristics of the growing of a library by volume. The growth is in the use of sophisticated technologies.

The advent of Information and Communication Technologies and Impact of Information explosion have brought many changes in diverse field of knowledge, especially in medical sciences which had profound impact on medical professionals, practitioners, students in pursuing their research and patient care. The medical professionals require pinpointed, accurate and speedy information for updating their knowledge. Due to the elasticity of budgets and increases in journal and book prices every year, keeping in view of user needs, libraries are forced to join a consortium. Medical education aims at developing medical manpower suitable to the needs of the country. The medical college libraries have a crucial role to play directly in the promotion of medical education and health care information and indirectly in various health welfare programmes. The E-resources like e-books, e-journals, e-magazines, e-thesis, www, e-newspapers, e-mail, e-research Reports, e-bibliographic databases, e-databases-IEEE, Emerald, Web of science, science direct, nature, ACM health science library system, Wikipedia, Springer link, UGC infonet etc. are very helpful to the medical library users. Mostly libraries are used so many services like Inter-Library loan, Reference services, Referral services, Abstracting services, indexing services, Current awareness services, SDI Services for students but in the age of ICT its very helpful to approach to exact use of information as per their requirements.

Advances in computer applications during the past few decades have brought radical changes in the way information is gathered, store, organized, accessed, retrieved and consumed. The application of computers in information processing has brought several products and services to the scene. The Internet and the Web are constantly influencing the development of new modes of scholarly communication; their potential for delivering goods is quite vast, as they overcome successfully the geographical limitations associated with the print media. Further, the distribution time between product publication and its delivery has been drastically reduced. The Internet can be used for efficient retrieval and meeting information needs. This is very important for university libraries since most of them call for more and more research work. This important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by dial- up access to commonly available electronic resources, mainly CD-ROM, OPACs and Internet, which are replacing the print media. Libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structure. Over the last several years, a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials.

Medical library is designed to assist physicians, health professionals, students, patients, consumers and medical researchers in finding health and scientific information to improve, update, assess or evaluate health care. Medical libraries are typically found in hospitals, medical schools, and private industry and in medical or health associations. A typical health or medical library has access to MEDILINE, a range of electronic resources, print and digital journal collections and print reference books. The influence of open access (OA) and free searching via Google and PubMed has a major impact on the way medical libraries operate.

Every Medical college of medicine, nursing, dentistry, pharmacy, medicine or public health is required to have a health or medical library appropriate to the needs of the faculty, students and scholars.

The United States National Library of Medicine (NLM) is the largest biomedical library in the world, and collects and provides access to some of the best health information in the world (due to its linkage to the National Institutes of Health). The NLM maintains numerous medical and genomic databases, searchable Medical databases MEDLINE (PubMed) and OMIM (a genetic traits database).

In support of open access to the journal literature, the U.S. NLM established an online library of digital journal articles, PubMed Central (PMC), which will soon be supplemented by a UK version. NLM works with the National Network of Libraries of Medicine (NN/LM) to provide regional medical library support in the United States, while its consumer health information service MEDILINEplus offers free access to health information, images and interactive tutorials. Many countries like Australia, Canada and the United Kingdom have well-developed medical libraries, though nothing quite as evolved as the U.S. NLM.

The largest medical library in Europe is the German National Library of Medicine (ZB MED), which also has collections in the fields of nutrition, agriculture, and environmental science. ZB MED operates as the official European supplier of full texts in response to searches conducted in the NLM's bibliographic databases such as PubMed, and also operates its own search portals.

2. External links

Canadian Health Library Association, Health Libraries Group,CILIP (UK), Medical Library Association(US), Academy of Health Information Professionals (US), Association of Medical Librarianship (AGMB) e.V.(Germany), German National Library of Medicine(Germany), Liaison Committee of Medical Education (LCME), National Library of Medicine(US), National Network of Libraries of

Medicine(NNLM) (US), PubMed Central, MeSH: Libraries, Medical, HLWIKI International- A Knowledge-Base for Health Librarians.

Brief Description of private medical Colleges of Uttar Pradesh

Sl. No.	Name of Medical Colleges	City	Year of Estt.
1	Career Instt. Of Medical Sciences & Hospital	Lucknow	2011
2	Era Lucknow Medical College	Lucknow	1997
3	Hind Institute of Medical Sciences	Barabanki	2009
4	Major S D Singh Medical College and Hospital	Farukhabad	2011
5	Mayo Institute of Medical Sciences	Faizabad	2012
6	Muzaffarnagar Medical College	Muzaffarnagar	2006
7	Rama Medical College and Hospital	Kanpur	2008
8	Rama Medical College Hospital and Research Centre	Hapur	2011
9	Rohilkhand Medical College & Hospital	Bareilly	2006
10	Santosh Medical College, Ghaziabad	Ghaziabad	1996
11	Saraswati Institute of Medical Sciences	Hapur	2008
12	School of Medical Sciences & Research	Greater Noida	2009
13	Shri Ram Murti Smarak Institute of Medical Sciences	Bareilly	2005
14	Subharti Medical College	Meerut	1996
15	Teerthankar Mahaveer Medical College	Moradabad	2008

3. COLLECTION AND SERVICES:

Literature Searches

Library Services offers access to many specialized databases, including Medline, perform literature searches to find articles and information on a wide variety of topics.

Literature searches are useful for:

- Finding research on any aspect of a specific disease or condition.
- Finding the most up-to-date evidence-based information.
- Finding information on current trends in health care, health policy, and health management.

- Finding statistics collected by local, national and worldwide health agencies.

4. Journal Articles

Library Services has access to thousands of journal titles. We have access to many journals dating back to the early 1990s, and even a small number of journals dating back to the 1980s. There is no limit to the number of articles can search.

Books

The book collection covers a wide range of medical, nursing, and health care topics. Although most of the materials are directed to the health professional. Medica l libraries includes text books, reference books, Medical Dictionaries, Encyclopedias etc.

5. Current Awareness Services

Electronic table-of-contents service allows online access to the contents of any journals of choice. The table-of-contents journal pages are tailored to specific needs and interests. E-mail updates when new journal issues are released. Simply select articles of interest and forward choices to library services. The articles are then sent directly to the user. There is no limit to the number of articles can request.

6. Selective Dissemination of Information (SDI)

This service is also tailored to the needs of each individual patron. A unique search will be created by the Librarian to meet the specified needs of the client. The search is then executed at a pre-determined interval (usually weekly or monthly) and the resulting list of citations is sent to the requestor. The requestor then simply selects any articles of interest and forwards these selections to the Librarian. In this way, users are able to keep up-to-date in any area of interest, without wasting precious time can search.

The service requirements for the library include:

- Collection Development (access to print and electronic collections)
- Circulation, including books requested from other locations
- Course reserve material

- Scanning capabilities
- Web site presence and maintenance
- Reference (mostly virtual, i.e. email, chat) but also in person during office hours
- Instruction including formal classroom and "teaching moments"
- Mediated searching and training in online tools including citation/bibliographic management
- Access to and help with data analysis tools; statistical software tools (in collaboration with the Life Science Data Services Librarian, the Scholarly Commons and other partners in the Library and on campus)

Library Staff, Collection & Budget of Private Medical Colleges of Uttar Pradesh

Name of Medical College	Library Staff	Print Collection		Automation/ Electronic Collection	Aprox. Budget
		Books	Journals		
Career Instt. Of Medical Sciences & Hospital,	5	7177	100	Library not automated and E-collection is 0	10lac
Era Lucknow Medical College	10	25000	209	1600	2Crore
Hind Institute of Medical Sciences	10	15000	120	135	45 Lac
Major S D Singh Medical College and Hospital,	12	7100	108	Library not automated and E-collection is 0	10Lac
Mayo Institute of Medical Sciences	6	12000	70	1200	Not available
Muzaffarnagar Medical College	12	10000	103	2000	Not Available

Rama Medical College and Hospital Hapur	3	7000	70	Library not automated and E-collection is 0	Not available
Rama Medical College Hospital and Research Centre Kanpur	5	14270	142	10345	4.5Lac
Rohilkhand Medical College & Hospital	8	13852	240	1400	1Crore
Santosh Medical College, Ghaziabad	5	12500	105	1550	25 lac
Saraswati Institute of Medical Sciences	7	10000	100	20	25 Lac
School of Medical Sciences & Research	8	12000	120	3300	10 lac
Shri Ram Murti Smarak Institute of Medical Sciences	10	12148	151	750	58 lac
Subharti Medical College	15	19525	198	1600	1.5 crore
Teerthankar Mahaveer Medical College	10	9265	213	615	1 Crore

7. Conclusion and Findings:

According to the proposed objective of my study topic following are the important findings that has been summarized as follows:

1. Among surveyed 15 private medical college libraries covered shows that only 12 libraries (80%)have started automation. Therefore these 12 college libraries may opt for ICT services.

2. Among 15 private medical college libraries having sufficient print material for users and they are committed to shift in the ICT Age.

3. Among 12(80%) private medical college libraries having budget for improving their libraries to fulfill the academic responsibility in the society. Among these 9 (60%)private medical college libraries having sufficient budget to fulfill their current requirement for medical users for research, update knowledge ,students studies and for faculty etc.

4. Among 8(53.33%) Private medical college libraries having sufficient electronic resources because they have sufficient funds it seems libraries is shifting towards in the ICT age.

5. Infrastructure and use of ICT of e- resources in Private Medical College libraries are in developing stage of Uttar Pradesh.

6. Implementation of ICT in the medical libraries is going to change the whole environment of the libraries and their users.

7. Skillful human resource support from administration for finance etc. needs to develop of ICT based libraries.

References:

1. http://nopr.niscair.res.in/handle/123456789/27761
2. http://www.webpages.uidaho.edu/~mbolin/srinivasulu-reddy.htm
3. http://cat.inist.fr/?aModele=afficheN&cpsidt=18774160
4. http://files.eric.ed.gov/fulltext/EJ1083497.pdf
5. http://www.webpages.uidaho.edu/~mbolin/egberongbe.htm
6. http://southernlibrarianship.icaap.org/content/v10n01/sharma_c01.html
7. http://www.webpages.uidaho.edu/~mbolin/obuh-alex.htm
8. Adam Murray "Electronic resource management 2.0: using web 2.0 technologies as cost effective alternatives to an electronic resource management system" *Journal of Electronic Resources Librarianship* 20.3 (2008): 156-68. Web.
9. Allen Stephanie, and Bucknell Terry "E-books: How to Make Them Work: a Seminar Organised by the Multimedia Information and Technology Group (North West) on 10 November 2004 at Liverpool John Moores University" *Interlending & Document Supply* 33.1 (2005): 59-60. Web.
10. Ashcroft Linda "Electronic Journals: Managing and Educating for a Changing Culture in Academic Libraries" *Online Information Review* 25.6 (2003): 378-88. Web.

11. Bennett, Linda, and Landoni, Monica. "E-books in Academic Libraries" *The Electronic Library* 23.1 (2005): 9-16. Web.

12. Bhardwaj, Rajesh Kr., and Shukla, R.K. "Re-Engineering of Library and Information Services through Web Modeling at Delhi College of Engineering" *The Electronic Library* (2007). Web.

13. Cohen Laura B., and Calsada Matthew M "Web Accessible Databases for Electronic Resource Collections: a Case Study and Its Implications" *The Electronic Library* 21.3 (2003): 31-38. Web.

14. Gulati Anjali "Use of Information and Communication Technology in Libraries and Information Centres: an Indian Scenario" *The Electronic Library* 22.4 (2004): 335-50. Web.

15. Haridasan Sudharma, and Khan Majid "Impact and Use of E-resources by social scientists in NationalSocial Science Documentation Centre (NASSDOC),India" *The Electronic Library* 27.1 (2009): 117-33. Web.

16. Joteen Singh, R. K., Devi, Th. Madhuri, and Raychaudhury, Arup "Use of Internet Based E-resources at Manipur University: a Survey" *Annals of Library & Information Studies* 56.1 (2009): 6. Web.

Authors Profile



I am research Scholar from Shri Venkateshwara University Gajraula Uttar Pradesh in the field of Library and Information Science and have done M.A. Sociology, MLISc. 15 Years of experience in the Library field and I am working as an Assistant Librarian in Amity University Haryana Gurgaon.

Publishing: Ethics and Dilemma

Dr. Aarti Sharma,

Assistant Librarian , M.S.R.Library ,Punjab Agricultural University.
Ludhiana.Lib-Reference 12 @pau.edu.

Mr.SanjeevVermani,

Deputy Librarian, M.S.R.Library, Punjab Agricultural University.
Lib-periodical @pau.edu.

Abstract: Publishing scholarly articles in newly launched journals is a responsible task and requires conscientiousness from authors, reviewers, editors and publishers. In the recent past number of predatory journals have emerged in all the disciplines. These journals provide ample opportunities to the academicians to publish their research. These predatory journals pose a threat to the authenticity and legitimacy of scientific literature. This paper discusses ethical issues posed by predatory journals and works published thereof .The issues related to the publications in predatory journals needs to be looked in as such journals are increasing at an alarming rate. Therefore, the precautionary measures to be taken by academicians,.institutions and publishers are also discussed to check the publications in the predatory journals.

Keywords: Predatory, publication, ethics, library.

1. Introduction

Academic publishing dates back to 17th century, at that time the research conducted and the recommendations were the achievements of the author and work was published for their satisfaction. Reason of publishing in earlier days was primarily to share new findings with larger peer group, improve and encourage formal discussions and ultimately to increase the stock of knowledge. Through publications the findings of the research were preserved for the future generations to gain knowledge. Though the publication opportunities were limited still it facilitated the preservation of the scientific wisdom.

Academic journals/publishers on the basis of the ownership can be classified into two main types i.e. journals owned by non-profit professional societies and secondly, owned by commercial publishers. In order to cover publishing costs, the mode of publication in a journal is broadly categorized into two models: 'reader's pays model' and 'author-side pays model'. The publishers obtain their revenue from subscription fees charged to libraries and individuals in reader's pays model

of publication where as in author-side pays model, the publishers obtain their revenues through articles processing charges from the authors, who pay to make their articles OA to everybody (19).

Open access publishing has lowered the publishing cost and has expanded worldwide access to the latest research. Unfortunately, modern developments in research through 'open access publishing' in spite of being a productive motive towards fast and authentic scientific publication has also infiltrated the purity of publication ethics. Under the gold open access model, each article published means more revenue for the publishers (1). There is no page budget, abandoned articles selectivity, as the aim is merely to earn revenue from the author as fee for articles accepted and published.

The reason of publication has changed over the years. Now a day, scholarly articles are required for career advancement and international recognitions. The academicians are in the race of getting the articles published without any scientific purpose. Pressure to publish more leads to unethical publishing. In such an environment numerous "Predatory" journals have emerged providing ample opportunities for publishing article for a fee without any review or indexing by any prestigious bibliographical database. As a result numbers of scholarly published journals have exploded.

2. Literature Reviewed

Patil (2016) found that India is publishing the highest number of predatory Journals and within India; Madhya Pradesh contributed to the largest number of predatory journals. The study revealed that majority of these journals are published after the year 2010. Lakhotia (2015) has identified two major issues related to rapid growth of the predatory journals in India. It involves the API score system initiated by UGC and commercialization of research publications.Xia & others (2014) analyzed that those who publish in predatory journals are young and inexperienced researchers from developing countries. Raju (2013) mentioned the critics of bell's methodology and further opined that open-access associations such as DOAJ (Directory of Open Access Journals) and the OASPA (Open Access Scholarly Publisher Association) should adopt more responsibility for policing publishers .Foster & Chopra (2012) suggested that scientific community should delegitimize predatory journals. Inexpensive plagiarism detectors should be used by professors.

3. Objective

1. To know the reasons of publishing by the academicians.
2. To make scientific community aware of the predatory Journals.

4. Significance

The predatory journal poses a serious threat to scientific literature. Scientists can no longer trust a scientific journal. There is a problem of retrieving relevant authentic information in a sea of information contaminated with false data. The dependency on open access predatory journals may lead to unrealistic misleading information. By making the researchers aware of the predatory journals the wastage of human efforts and funds can be checked by avoiding the publication of serious research findings in predatory journals.

5. Predatory Journal

Predatory journals are the by-products of open access movement began in 1990's. These journals are known to publish sub-standard articles jeopardizing the scientific growth and knowledge (16). These journals publish the articles immediately after submission. They make use of fake impact factors to attract researchers, publish articles full of plagiarism. Moreover, they lack transparency regarding the ownership and location of head quarter of the publisher. Fake, scam, unscholarly and deceptive journals that compromise the peer review procedure and ask authors to 'pay-to-publish 'the articles as a publication fee (18).These journals are not at all concerned with the digital preservation. The main aim is to earn maximum profit out of publication fee charged from the authors.

Jeffrey Beall coined the term predatory publishers to describe publishers in the scholarly publishing business who collect article processing charges and provide rapid publishing without a proper peer-review process. Another term 'pseudo-journals' was also suggested (19).

Jeffrey Beall in 2015 published the criteria for determining predatory open access publisher or journal that was available through http:/scholarlyoa.com. Jeffery Beall enlisted potentially or probably predatory publisher and journals to avoid "academic pollution "and to point out the threat the predatory journals provide to the scientific literature. He appealed researchers and academicians not to publish or cite from the journals enlisted in Beall's list.

There were few points of critics of the Beall's list. Jeffery Beall relied totally on publisher website rather than detailed discussion with the publisher and that may result into incorrect conclusion (6). There was no direct communication with the journals which were classified as predatory journals. Ultimately, he risks throwing undue suspicion on start up publishers. In January 2017 Beall took a professional decision and take down his list of predatory publisher or journals (17).

6. Prey of Predatory Journals

Young researchers and doctoral students from developing countries are the major contributors to predatory journals. The problem is catalyzed by an increasing pressure on them to "publish or perish". Academicians are anxious to expand their publication list and become recognized by academic community and are therefore, easily attracted by the quick and easy publishing model that these Open Access journals offer (21). Predatory Journals setup websites that closely resemble those of legitimate on-line publishers, and publish journals of questionable and downright low quality (2). The websites are littered with grammatical errors. They list bogus contact details (2). They trick the authors into thinking that they are legitimate. Ultimately the inexperienced but over ambitious scholars and researcher get trapped by these publishers or journals.

7. Ethical Issues

Selectivity of articles was the strength of the Journals , especially before internet. Editors use to select only the best articles among the papers submitted to appear in each issue of journal. Journals attracted top manuscripts and gained reputation as quality publishing outlet (1). Online journals in the internet age facilitated illegitimate publishers and journals, to make financial gain at the expenses of the quality and validity for the publications. Predatory Journals poses a number of ethical issues:

Misrepresentation: Predatory journals do not tell the truth about their identity, publication charges, services they offer, websites of journals, lack an editorial office address of even contact information. They lack information about academic appointments and locations of the editors and editorial boards. Thus, they misrepresent their identity and services.

Lacking standards: - Predatory journals lack the standards and best practices established by the scholarly publishing community, which evaluate the research and improve the quality of published work. Papers are published without peer

review and no quality control practices are adopted that leads to the publications of numerous papers that are unscientific and should never be published (1).

Academic deceptions: - Over ambitious scientists may knowingly publish in predatory journals and add those publications to their credit for promotions and occupying high positions in their institutes. The country like India where academic promotion is based on 'publish or perish' and critical evaluation of published article is not done. Unethical scientists are playing with such system and are earning tenure and promotion at the expenses of honest scientists.

Wastage of Funds and Efforts: - Legitimacy of the research will be questioned once it is published in the predatory journal though the author, researcher was caught unaware or was trapped by predatory publisher. Such an outcome wastes research, funding, and the involvement of human study participants.

Lack Digital Preservation: - Predatory Journals are not concerned with the digital preservation and they do not archive their content in third party sites as CLOCKSS (Controlled Lots of Copies Keep Stuff Safe) . When profits decline these journals cease publication. If authors have not pursued republishing in a legitimate journal, their research will disappear (7).

8. Precautions

Research community is under serious threat by the predatory publishers and journals. Authors, editors, institutes, reviewers, funding agencies need to join hand to overcome the problem of the predatory journals.

Institutions: Institutions can play an important role in preventing predatory publications by educating their authors. Research managers of academic institutes should educate their researchers about publishing ethics, journal evaluation and advise them to choose appropriate target journals by checking their credentials, indexing status, open access and archiving options, affiliations to scientific societies, the reputation of the publishers and the Beall's list so that the research is published in legitimate and globally recognized journals.

Authors and Editors: Authors need to resist the temptations to publish quickly and easily as the journals offering fast track publishing may actually be predatory. Moreover, they should use scholarly network to identify and share the information on publishers (6). Scientists themselves should be honest and avoid unethical publication of plagiarized or self-plagiarized work by paying for the publication (2). They should delegitimize the predatory journals (10). Editors of the journals should use plagiarism detectors to check the duplicacy of the research.

Reviewers: Reviewer play significant role in checking the fictious authors from unethical publishing. Reviewer comments are essential for improving the quality and readability of publications. The reviewers' irresponsible behavior can facilitate fictitious author and leads to unethical publishing. It is responsibility of the reviewer to give fair comments to avoid unethical publishing.

Publisher: Publishers should not ignore the importance of quality checks, as by doing so they take the risk of accepting plagiarized papers and infringing the exclusive publishing rights. The scientific journals sometimes publish the papers with plagiarized contents. Reputed publishers themselves can effectively tackle the emerging predatory practices by decreasing their rejection rates and offering more space for publishable and thoroughly edited items (12).

Librarians: Libraries are the customer of open-access publishers. Libraries' must remove predatory publishers from their online catalogues (2).

9. Conclusion

Journals are the essence of scholarly communication. They not only aim to disseminate information but also to preserve the information for the future generation. Predatory Journals or publishers have become a big industry luring authors from developing countries. To prevent such practice UGC has released a list of approved journals which includes the journals from ICI, which enlist many predatory journals .As a result, predatory journals also become part of UGC approved list. The problem of predatory publication or journals cannot be resolved at an individual level. The problem can be overpowered only by the joint efforts of academicians, publishers and funding agencies and policy makers.

Reference

1. Beall, J. (2016). Best practices for scholarly authors in the age of predatory journals. *Annals of Royal College of Surgeons of England,* 98(2), 77-79. Doi. org/10.1308/rcsann.2016.0056.
2. Beall, J. (2012).Predatory publishers are corrupting open access. *Nature,* 489, 179.
3. Beall, J. (2015). Criteria for determining predatory open-access publishers. Available at http:/scholarlyoa.com.

4. Bornemann, E. (2013). Exposing predatory publishers. *Information Today*,30(6),13.
5. Butler, D. (2013). The Dark side of publishing. *Nature*, 495, 433
6. Dewan, P. and Shah, D. (2016). A Writer's dilemma: Where to publish and where not to. *Indian Pediatrics*, 53, 141-145.
7. Ferris, L. E. and Winker, M. A. (2017). Ethical issues in publishing in predatory journals. *Biochemica Medica*, 27(2), 279-284. Doi:org/10.11613/BM.2017.030
8. Ferris, L. E. and Winker, Margaret A. (2017) Ethical issues in publishing in predatory journals, Biochemica Medica (http://doi.org/10.11613/BM.2017.030XXXXXX
9. Raju, N.V. (2013). How does UGC identify predatory journals. *Current Science*,104(11) , 1461-62.
10. Foster, K.R. and Chopra, K.L.(2012). Journal of plagiarism. *Current Science* ,103(11) , 1258-59.
11. Gad-el-Haq,M.(2004). Publish or Perish --- An ailing enterprise. *Physics Today* ,57 (3),61-62. Doi : 10.1063/1.1712503.
12. Gasparyan, A.Y.and others. (2015). Publishing ethics and predatory practices: A delemma for all stakeholders of science communication. *Journal of Korean Medical Science*, 30(8),1010-1016.
13. Gasparyan, A.Y.and others (2016). The Pressure to publish more and the scope of predatory publishing activities. *Journal of Korean Medical Science*, 31(12),1874-1878.
14. Habibzadeh, F.and Simundic, Ana-Maria. (2017). Predatory journals and their effect on scientific research community. *Biochemica Medica*, 27(2),270-272.
15. Lakhotia, S.C. (2015). Predatory journals and academic pollution. *Current Science*, 108(8),1407-1408.
16. Patil, S.B. (2016). Predatory open-access journals in India: A study. *PEARL – A Journal of Library and Information Science*, 10(2), 94-97.

17. Patwardhan, B. (2017). Indian science and predatory journals. *Journal of Ayurveda and Integrative Medicine,* 8(1), 1-2.

18. Raghvan, R.and others. (2015). Curbing academic predators : JoTT's policy regarding citation of publications from predatory journals. *Journal of Threatened Texa,* 7(10), 7609-7611.

19. Seethapathy, G.S., Santosh Kumar, J.U., and Hareesha, A.S. (2016) . India's Scientific publications in predatory journal: need for regulating quality of Indian Science and Education. *Current Science,* 111(11), 1759-64.

20. Tandon, A., Kanchan, T. and Krishan, K. (2016). Predatory publishing: send the alarms ringing. *Current Science,* 111 (7), 1133.

21. Xia, J. and others. (2014). Who publishes in the "Predatory" journals? *Journal Of The Association For Information Science and Technology,*66(7),1406-1417.

Role of Librarians in Information and Technology Dominated 21St Century

Mr. Omkar Pandey

[Senior Librarian]
Jaypee Educational Institute, Anoopshahr
E-mail – ompandey34@gmail.com

Abstract: Time wheel moves and invites great changes which affect almost all aspects of human civilization. Within these changes, change in human intelligence and knowledg-esectors has played a vital role in human development. It is true that from early Stone Age to the present century, education sectors and its supporting institutions have played a role of nucleolus and entire changes move around it. No doubt, these institutions have also upgraded their formats and working process accordingly to fulfill the requirements of their users. Within these education sectors, Library and Information centers are one of the important sectors, which came into existence when human civilization had initiated knowledge creation and dissemination. However, its role is limited and works as a store-house only. However, after a long journey, now it has emerged as an ultra-developed infor-mation centers, and known with new identifications as digital libraries, virtual libraries, cyber libraries or cloud libraries. Therefore, caretakers of these new emerged libraries have also transformed with their roles and skills. The paper highlights the role and skills essential for a new age librarians.

Keywords: Role of Librarian, Essential Skills, and Knowledge Dissemination Tools and Services.

1. Introduction

In present information and technology dominated society all institutions which are dealing with human progress and development has either rejuvenated their formats in a new framework or lost their identities because they are totally unable to fulfill the requirements of new generation users. Library and Information centers, which have always regarded as pillars of information society have also reframed their service, resources, preservation techniques and resource dissemination mechanisms. At the same time, library service facilitators have also come up in a new role as an Information & technology skilled professionals. Librarians, those where dealing with rare study materials, manuscripts and multi-volume reference books and other printed materials, now dealing with digital resources, e-books, e-journals, multimedia contents and web-based online materials. Now Information is playing a leading role in place of traditional library resources. Therefore, this situation has bothered all library professional to come forward and

accept the challenge of the new century and equipped themselves with entire new emerged ICT skills and library related equipment.

2. Role of 21st Century Librarians

Connecting people to knowledge artifact and channelizing right information to the right person at the right time has remained as one of the prime objectives of library service. However, the service condition, demand of new generation users and advent of digital documents has changed the working process of library professionals. Their role will be increasingly towards offering consultancy to the users in their efforts in navigating through the web of documents that span the global library.

No doubt, new age librarians are playing different characters at the same time. Some most important characters played by the librarians are as follows:-

1. Information Navigator:-

In the age of information explosion navigating a right piece of information within a limited time is really a challenging job. So, identifying both print and electronic media, retrieve, organize, repackage and provide electronic access to digital information sources is primarily service for a librarian

2. Administrator:-

Constructing policies regarding library building, Infrastructure, collection development, recruitment of staff, installation of newly emerged equipment, and all other library-related management decisions.In modern era library and information science sector has enlarged their area so, the librarian has to perform multidimensional administrative jobs starting from construction of library building to dissemination of information.

3. Technology Expert:-

The Advent of new technologies and its impact on society has motivated and bothered new age librarians to get mastery over technical equipment and services. To ensure smooth functioning of ultra-developed automated and web-based libraries, institution imparting library & information Science education has also introduced technology related contents in its syllabus.

4. Facilitator:-

However, the most important role of a librarian is a resource provider either with the help of resources available in the library or to intimate the exact location

where the required piece of information will be available. Make access easier, e.g providing network access; purchase software & e-journals licenses.

5. **Educator:-**

In the beginning of each session, the librarian should inform the users about the rules of the library, how to use the library materials, system related to library circulation, Internet use: tools, search engines, online databases and catalogs, electronic journals, use of web-based instruction and online tutorials.

6. Innovator/ Website Designer :-

Design the library's webpage, search, and evaluate information resources to be linked to the site creates an awareness of library service on the web. In some instance, manage the organizational website.

7. Database Manager:-

The advent of a computer has almost wiped out the use of register and it emerged in a new format known as a database. So, printed bibliographies, accession register, issue and return register and all other printed materials have transformed as a database. That is why librarians are also playing a role of database managers.

8. Collaborator:-

For an academic librarian, establishing proper coordination with teachers, students and management are required for the proper functioning of the library. At the same time collaboration, with fellow librarians, IT people and community are also required.

9. Policy Maker:-

Constructing policies for the proper functioning oflibraries is the most important part for the librarian. Only through a good policy best result should be given. Develop an information policy for an organization ensuring total or selective access to all information resources.

10) Business Manager:-

Market rate of information resources vary from publication to publication, in such condition negotiate with publishers and aggregators for the most advantages license agreements for e-journals, databases and printed reading materials is the most important act for a librarian.

11) Councilor:-

Fast growing career opportunities and new emerged technical as well as management courses have increased the role of councilors. So, as an information manager librarian can guide the clients about the suitable courses and career opportunities available in different sectors.

3. Essential Skills Required for A Modern Librarian:-

Some most demanding skills required for a new century librarians are:-

I. Information Curator:-

Since the primary role of any type of library is information curation, the need for that skill set will never go away. However, it will evolve as volume and verity of information expands. As content creation becomes available to all, information Curation becomes more critical. Librarians are becoming increasingly vital in the process of evaluating and editing what is most valuable, as well as categorizing and classifying it for easy retrieval and use.

The existing digital data is estimated to cross by 40 trillion gigabytes' by 2020 [DVD stacked from Earth halfway to Mars] (Gants and Reinsel, 2012). Needless to say that the libraries will not only have to deal with such huge chunks of data but also to make sense of eventually think of preserving them for long-term reuse. Digital curation for library science thus would be a holistic set of actions that would engage, establish systems and services to manage digital content.

Online Dictionary for Library and Information Science has defined digital curation as the "Active management, enhancement, and preservation of trustworthy digital research data for the duration of its lifecycle." This involves verification of digital data, selection of authoritative digital data, the creation of digital objects and associated metadata, conversion of digital objects into the digital data repositories for preservation and storage and access to the authorized users. [Joan M. Reitz, 2016]. According to the Digital Center of the University of Edinburg, U.K. "Digital Curation involves maintaining, preserving and adding value to digital research data throughout its lifecycle." DDC, 2016.

II. Data Evaluation:-

Data evaluation is the most demanding skill for the modern librarians. Because every bit of time enormous amount of data's coming into existence and selecting accurate, reliable, authentic and up-to-date data are from these datasets is really a challenging job for library professionals. With the advent, new technologies data

creation department has achieved new heights so entire society has emerged as authors. However, there is no mechanism developed until today for the monitoring of such data's. Therefore, huge amounts of unwanted data sets are present in this digital environment. Selecting needed data from this huge chunk of data sets librarian has to adopt data evaluation techniques through which most demanded data has been selected.

III. Skill to Stop Plagiarism:-

Mostly new age users are not aware of the plagiarism and they frequently using web-based materials or other data's without proper citation or referencing. Moreover, they are unknowingly committing the crime. Therefore, it is the duty to library professionals to educate the users about the proper use of data's.

IV. Research Skill:-

As it is true, that library has always considered as a hub of research-oriented scholars. Librarians facilitate not only research related study materials but also guide them about the techniques and formats of research. In such condition depth, knowledge of research methodology is essential for the library professionals.

V. Digital Preservation:-

Modern libraries are transforming with its role, study materials and services from its traditional framework to digital framework. Almost entire new study materials are preserved in a digital format such as e-books, e-journal, e-newspapers, online newsletters and other digital and web-based study materials. Therefore, the transition for librarians is to known how to preserve and manage digital assets and to be familiar with the systems and tools that are used in the process.

VI. Mobile Environment:-

As more information is being stored in the cloud and searched for and consumed using mobile devices, librarians must be familiar with and knowledgeable about the mobile environment. Librarians skilled in the use of mobile devices like tablets and smartphones can help ensure that their limitations and their strengths are being considered and built into the libraries information system and portals.

VII. Collaboration, Coaching, and Facilitation:-

Librarians who prefer dealing with information to people will need to push out of their comfort zones. They must become a more vital resource in facilitating strategic decisions around information procurement and information budgets. They must assume more of a coaching/ facilitation/ training role as they advise groups about procuring outside data and making the best use of it. They can

position themselves as valuable resources by collaborating more actively with management and leadership within the organizations they work.

VIII. Communication Skill:-

The skill through which we used to translate our ideas, thoughts, feeling, emotions, and knowledge to another person with better perspective is called communication skill. The ability to communicate effectively with superior, colleagues, staff and patrons is essential. It includes printing, writing, listening, presenting, and speaking.

IX. Data Analysis Skill:-

Data analysis is a process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions and supporting decision-making.

X. Flexibility:-

Willing to change, lifelong learner, adaptability and accept new things. It helps the professionals to learn new skills and perform positively.

XI. Marketing skill:-

To protect the resources of libraries towards the users in an inviting format is a kind of marketing of library materials. It is an instrument through information transmitted to the users.

XII. Project Management:-

Project management is the discipline of initiating, planning, executing, controlling, and closing the work of a team to achieve specific goals and meet specific success criteria.

XIII. Technology Expertise:-

In the era of technology, dominated society get mastery on all required technical skill is an essential skill for any kind of professional.

XIV. Decision Making:-

Taking right decision at right time from all available possible solutions is a great skill. In psychology, decision-making is regarded as a cognitive process resulting in the selection of a belief or a course of action among several alternative possibilities.

XV. Problem Solving:-

Problem-solving attitude is an essential skill for the professional working in the service sectors. In libraries, users always visit the library with the hunger of

information and knowledge, so listening users need and provide the required piece of information is important.

XVI. Team Building:-

In present century library sector is growing very fast with their resources and service. So performing entire library work is impossible for a single person. A team of professionals required to facilitate all library works. In such condition, the librarian should be able to build a team.

XVII. Creativity:-

Creativity is probably the most important and most lacking skill, not only for librarian but also in education in general.

XVIII. Data Mining:-

Data mining is the practice of automatically searching large stores of data to discover patterns and trends that go beyond simple analysis. Data mining uses sophisticated mathematical algorithms to segment the data and evaluate the probability of future events. Data mining is also known as Knowledge Discovery in Data (KDD).

XIX. Data Harvesting:-

It is a process of collection of data from online sources.

XX. Creating Meta Data:-

"Data that provides information about other data." Three Distinct types of metadata exist descriptive structural and administrative metadata.

XXI. Skill to Save Intellectual Property Right:-

Intellectual property refers to creations of the intellect for which a monopoly has assigned to designated owners by law. Intellectual property rights (IPRs) are the rights granted to the creators of IP and include trademarks, copyright, patents, industrial design rights, and in some jurisdictions trade secrets. Artistic works including music and literature, as well as discoveries, inventions, words, phrases, symbols, and designs, can protect as intellectual property.

XXII. Skill to save Copyright Act:-

Copyright is a form of protection provided by the laws of the United States. [Title 17, U. S. code]. To the authors of "original works of authorship," including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works.

XXIII. Content Management Skill:-

It is a computer application that supports the creation and modification of digital content. It often used to support multiple users working in a collaborative environment. Content Management System features vary widely. Most CMSs include Web-based publishing, format management, history editing and version control, indexing, search and retrieval. Web content management system [WCM or WCMS] is a CMS designed to support the management of the content of web pages. Most popular CMS are also WCMSs. Web content includes text and embedded graphics, photos, video, audio; maps and program code that displays content or interact with the users.

XXIV. Knowledge Management Skill:-

Knowledge management (KM) is the process of creating, sharing, using and managing the knowledge and information of an organization. It refers to a multidisciplinary approach to achieving organizational objectives by making the best use of knowledge.

Librarians, who adopt these skills will revitalize their career, increase the visibility of their profession and become valued as the important information management professionals they are.

4. Some Apparatus and Amenities about which modern Librarians Must be aware:-

[I] the equipment and facilities available in the library are illuminating in the following headings:-

1) Computer:-

Computer-based technologies have become the dominant force to shape and reshape the products and services the academic library has to offer. The Success of the IT-enabled services in the library was based on the efficiency of the equipment provided in the library. I.e. most modern technology, based on a number of equipment.

2) Library Software: -

Library Software is a set of instruction based computer programs, which facilitates smooth functioning of library works. A lot of library software is available; the librarian can purchase any software according to their requirements.

3) OPAC:-

An Online Public Access Catalogue [OPAC] is an online database of materials held by a library or group of libraries. Users search a library catalog principally to locate books and other material physically located at a library.

4) Union Catalogue:-

A union catalog is a combined library catalog describing the collections of a number of libraries. Union catalog has been created in a range of media, including book format, microform, cards and more recently networked electronic databases. Union catalogs are useful to librarians, as they assist in locating and requesting materials from other libraries through interlibrary loan service.

5) CD- ROM:-

Presents a state-of-the-art review of the applications of CD-ROMs in academic libraries, embracing all aspects of library involvement and staffing implications. Concluding that CD-ROM is having a huge impact on the way academic libraries function and the services they offer to their users.

6) Scanner:-

In computing, an image scanner often abbreviated to the just scanner is a device that optically scans images, printed text, handwriting, or an object and converts it to a digital image. Mechanically driven scanners that move the document are typically used for large format documents, where a flatbed design would be impractical. Some example of scanner, which is used in the scanning of library materials, are –

Betterlight Super 8K- HS Scanning Back.

Epson Expression 10000XL.

Fujitsu 5900 Sheet-feed Scanner [fi- 5900C]

Internet Archive Scribe Book Scanner.

Zeutschel 12000C Overhead Color Scanner [OS12000]

7) RFID:-

Radio frequency identification is a term used for technological utilizing radio waves for identifying individual items automatically. The most common way is storing a serial number identifying a product and related information on a microchip attached to an antenna. RFID has used very similarly to the barcode.

8) Tele text:-

Tele text is a television information retrieval service developed in the United Kingdom in the early 1970s. It offers a range of text-based information, typically including national, international and sporting news, weather and TV schedules. Tele text information broadcast in the vertical blanking interval between image frames in a broadcast television signal.

9) Facsimile:-

A facsimile is a copy or reproduction of an old book, manuscript, map, art or another item of historical value that is as true to the original source as possible. It differs from other forms of reproduction by attempting to replicate the source as accurately as possible in terms of scale, color, condition and other material qualities. For books and manuscripts, this also entails a complete copy of all pages; hence, an incomplete copy is a "partial facsimile."

10) Photocopy:-

A photocopier is a machine that makes paper copies of documents and other virtual images quickly and cheaply. Most current photocopiers use a technology called xerography, a dry process using heat. Photocopying is widely used in the library.

11) Printing technology:-

In computing, a printer is a peripheral which produces a text and graphics of documents stored in electronic form, usually on physical print media such as a paper or transparencies.

12) Barcode:-

A barcode reader (or barcode scanner) is an electronic device for reading printed barcodes. Like a flatbed scanner, it consists of a light source, a lens and a light sensor translating optical impulses into electrical ones. Additionally, nearly all barcode readers contain decoder circuitry analyzing the barcode's image data provided by the sensor and sending the barcode's content to the scanner has output port.

5. Customer Service

Some most reliable library services about which modern librarian must be aware are:-

1) Document Delivery Service:-

The Document Delivery Service [DDS] delivers copies of journal articles and book chapters from participating Libraries. Fees apply for most Document Delivery Services. To fulfill the information needs of the end user through information/ documents supply is a document delivery service. This service is provided on no profit – no loss basis and expected to be prompt.

2) Interlibrary Loan:-

Interlibrary loan means a cooperative arrangement among libraries by which one library may borrow material from another library. In other words, a loan of library materials by one library to another library.

3) Indexing and abstracting:-

A method, which was used to retrieve information from a table in memory or a file on a direct access store or the art of compiling an index. The preparation of abstracts, usually in a limited field, by an individual, an industrial organization offer restricted use or a commercial organization: the abstracts being published and supplied regularly to subscribers. Also, the organization producing the abstracts. Such services may be either comprehensive or selective.

4) Chat Service:-

Online chat may refer to any kind of communication over the Internet that offers an instantaneous transmission of text-based messages from sender to receiver; hence, the delay for visual access to the sent message shall not hamper the flow of communications in any of the directions. Online chat may address as well point-to-point communications as well as multicast communications from one sender to many receivers.

5) CAS:-

The purpose of a current- awareness service is to inform the users about the new acquisition in their libraries. Public libraries, in particular, have used display boards and shelves to draw attention to recent additions, and many libraries produce complete or selective lists for circulation to patrons. Some libraries have adopted a practice of selective dissemination of Information.

6) SDI:-

Selective dissemination of Information [SDI] was originally a phrase related to library and information science. SDI refers to tools and resources used to keep a user informed of new resources on the specified topic. Selective Dissemination

of Information was a concept first described by Hans Peter Luhn of IBM in the 1950's.

7) Scanned Copies:-

A scanning service for material not available electronically, which is held by the library. This includes articles from journals and chapters from books. Users of the service should be aware that we operate within the restrictions of the Copyright Act.

8) Electronic services and e-resources:-

The important fact is convincing many libraries to move towards digital e-resources, which are found to be less expensive and more useful for easy access. This is especially helpful to distant learners who have limited time to access the libraries from outside by internet access to commonly available electronic resources, mainly CD-ROM, OPEC's, E-journals, e-books, ETD and Internet, which are replacing the print media.

6. Conclusion:-

In present century when information has emerged as an indispensable commodity for human survival like air and water, the professionals related to information related sectors like librarians have incarnated in a new role. The image of traditional librarians, dealing with multi-volume reference books and other traditional study materials has totally transformed with good technology equipped smart professionals.

They are engaged in information harvesting, information Curation, data mining, database creation, dealing with big data and web-based data, preservation of all these data's either in digital form in libraries or space available in cloud, and after all dissemination of required piece of information to the right user, at right time in right format. It is worthwhile to mention here that present age librarians are responsible and smart enough to fulfill the entire information related thirst of new generation users

References:-

1. Online Encyclopedia of Library and Information Science.
2. www.Wikipedia.

3. The University of Illinois' Graduate School of Library and Information Science. Joan M. Reitz. (2016). Digital Curation. Online Dictionary for Library and Information Science. URL: HTTP; // www.abc-clio.com/ODLIS/odlis_d.aspx,
4. Digital Curation Centre of the University of Edinburgh, U.K. (2016) What is Digital Curation. URL: http://www.dcc.ac.uk/digital- curation /what-digital-curation.
5. Digital Curation Centre, U.K. (2016). DCC Charter and statement of principles. URL: http://www.dcc.ac.uk/about-us/dcc-charter/dcc-charter-and-statement-principal.
6. www.techopedia.com
7. Townley, C. T. (2001). Knowledge Management and Academic Libraries. College and Research Libraries, 62(1), 44–55.
8. Kidwell, J. J. Linde, K. M. V. & Johnson, S. L. (2000), Applying corporate knowledge management practices in higher education, Educause Quarterly, (4), 28-33.
9. Sudhir S. Patil ; Knowledge Management in Libraries ;International Journal of Digital Libraries and Knowledge Management. Volume 3, Number 2 (2013), pp. 71-74 http://www.ripublication.com

Authors Profile



Mr. OmkarPandey is working as a Senior Librarian at Jaypee Educational Institute, Anoopshahr, Bulandshahr [Uttar Pradesh]. He holds MLIS and NET in Library And Information Science. He has participated and contributed research papers in several National And International Level library Conferences. He is a Life Time member of Indian Library Association and Madhya Pradesh Library Association.

Email: - ompandey34@gmail.com.

Role of Library Science Professionals in Digital Environment

M. Ram

Assistant Librarian
Bodhisattva Dr. Bhim Rao Ambedkar Library
Gautam Buddha University, Greater Noida
Gautam Budh Nagar, 201312
mange.lib@gmail.com, m.ram@gbu.ac.in
and

Dr. Sonu Kumar

Deputy Librarian, Amity University Rajasthan
Jaipur, Rajsthan, India
sonupanwarmit@gmail.com

Abstract: This paper discusses the role of library science professionals in digital environment. Library professional have to talk about the several problems and strategies concern the role, skills and training development of professional in digital era and establish latest roles and relationships by continually updating their skills through proper training and continuing academic programmes. Library science professionals this act will establish and give credence to the role of information centers and library professionals in significantly pay back to the society in the field of academic, social, economic growth. Library science professionals must be well qualified, training and having complete leadership quality to manage the electronic information in digital environment. The professionals need to develop professional competencies to adopt changing in technologies to deliver information timely, value added quality services to the library users. The professionals should be trained thorough training and skills programs organised by academic institutions and organisations time to time. We will discuss how, where and whom to train the library science professionals for latest technology? How best to increase the use of library?

Keyword: Library, Science, Professional, Digital, Environment, Technology.

1. Introduction

The libraries are not consider as store house of knowledge now libraries act as information centers, resources centers and providing information to their user community using latest technology. This is not happen without quality training and skills to library and information science professionals in information and communication technology and digital age; it can be developed only when everyone can get training, skills, workshops, seminars and experience in research centers as well information centers under simulated conditions or in real life

conditions. The training and skills must be regularly basis and should be quality and from reputed organisations. It's a continuous professional development and professional can faces the coming informational and technological atmosphere in a very systemic manner and ensure that, the library and information science professionals are always one step ahead of the library users to serve them. The library and information science professionals are an essential chain of providing a successful electronic and communication information age.

I am being a library science professional identifying the needs of training and skills to enhancing their education, efficiency, effectiveness at work by improving confidence and up grading their knowledge, developing skills and motivation pertinent to their work and enlightening appropriate attitudes and behavior towards the work. The training and skills should be well organized, quality of content either to improve the existing potentials or for preparing a professional for still higher responsibilities which may call for new knowledge and skills. I have attended so many conferences, workshops, training and skill development programs, networking courses, education to stand himself in electronic environment. I must say here that these things are giving back lot to us and there is no library professional can serve without the training as well stand in this profession to serve the society. The real training and skills begin from whenever education ends. The Universities running library science courses are offering training and skills and internet based programs to work in digital environment comfortably in India and abroad.

2. Library Science Professionals

Library science profession is rank one of the important profession in digital environment and teaching various career prospective courses, where the students are learning about development of quality collection, organisation, storing and dissemination of information. The application development of information and communication technologies in digital environment, the information centers situation has changed from the traditional library to hybrid library, then computerised library, then digital or electronic library and virtual library and at present it is beyond the boundaries. Hence such changes, the nature and structure of resource centers and in parallel the library science professions have also changed in a dynamically and systemically method. The present condition the library science professionals are performing all round multitasking roles to fulfill the different requirements of the library users their information needs. Library science has always been concerned with the collection, organisation, preservation and retrieval of reading materials and digital information, in order to respond to users'

queries. It has also often been noted that latest technologies for the generation, distribution, processing and storage of information have brought changes in the nature, volume and format of that information. The digital library is only the most recent of these to establish and evaluate approaches to the education; training and skills of library professionals for include digital libraries. additional exactly, to spot generally terms, instead of specifically the vital competencies needed by data professionals in making and managing digital libraries and in facilitating their use.and to assess however these competencies area unit treated in library and information science education and coaching, so however the capacities of the knowledge professions area unit being developed.

3. Information and Communication Technology Skills for Library Science Professionals

It emerged that librarians who contributed within the workshops, course works and seminars are exposed to training and skills in such areas as finding using completely different search engines, use of social media, information of relevant websites, and information of designing for electronic libraries. The participants point of view are that the workshops, course works and seminars of such type may be organized a minimum the year to upgrade library professionals skills to face the challenge in electronic era and provide the services in more effectively in India. Library and information science associations in India should take the initiative to develop the curriculum to compete the other countries and also become the partner with developing countries library professionals to inter exchange organize workshops and seminars jointly with the developing countries. These training and skills may be very greatly helpful and equip librarians with the mandatory skills to provide e-library services effectively and also teach the library users to use library resources more effectively. The information communication and technology, skills and training for the library professionals are showing to through the seminars and workshop to provide the value added services in electronic library. Implementation of electrical resources training and skills programs are helpful to provide the services in the Library more effectively as well users of the library benefit to use electronic resources by the trained library and information science professionals.

4. Examine the Role of the Library Science Professionals

The role of the library science professionals examine in terms of however the practices and procedures in library and knowledge science education meet the

requirements of the particular operating atmosphere. The specialist as associate info treated is emphasised. Users square measure probing for data through the supply of data. The tutorial for library and information science professionals are additionally provides best info services to researchers in alternative fields in electronic era in present scenario. This remains a core price of ancient educational office such values incorporate info skill and data management. The way of learning educational library and information science professionals diagnose users info desires, reply to these desires by looking out and locating info, and educate users the way to realize, evaluate, and apply info. The moral principles of data seeking, gathering, organizing, and spreading square measure emphasised. The idea of life-long learning is embraced as a thought of the data literate library and information science professionals. The info explosion, development and applications of information and communication technology`s ever dynamic changing of data users and evolving trends in library and knowledge services have promoted the discussion of continuous education in resource center and knowledge science domain. The information and communication technology`s square measure more and more ever developing the landscape of resources centers and difficult the normal prevailing roles of library and knowledge sciences professionals. They realize it arduous to stay in context during this technological age. The library and information science professionals need the new set of skills, training, ethics, atmosphere and data to deal with the challenges and problems with their career.

5. Library Science Professionals Training and Skills

The skills and training of library science professional has become essential in the new technological change era to survive in this technologically atmosphere. The Library professionals face various major changes, specifically the transition from paper to electronic and transmission resources; increasing demand for accountability; and to address the case, it's become imperative for the library and information science professionals to induce continuous exposure to the new technologies, regular skilled and training change and larger organisational over the data resources. The skills and training for library and information science professionals Library and information handling skills, Service orientation, information and communication technology skills, knowledge skills, communication and training skills, marketing and presentation skills solves this major issue and prepared to face coming back challenges during this field. Library is termed as storage of information and data. Attributable to impact of web and information and communication technology libraries are exploit completely different approaches to supply the most effective services. Hence, differing kinds of libraries have born in society, such as. Amendment

is one reality with that people, teams and organisations should perpetually cope so as to survive. The requirement for development changes in people's attitudes and behaviors all are essential for international acceptance. With all the library and information science professionals, a amendment is usually connected with trendy info technologies and management problems. Over the past few decades, the temperament of library atmosphere and mode of service has modified drastically.

Technology has changed the conventional academic library beyond recognition. These dramatic changes have impacted significantly on the knowledge and skills requirements for Library and Information Science professionals practicing in this environment. While there have been studies in other parts of the world which have investigated the knowledge and skills requirements for the digital era academic library environment, to date no comprehensive study has drilled down into this area in the South African context. This paper reports on a preliminary study which is part of a wider study aimed at developing a comprehensive skills statement which would provide an objective framework against which professional Library and information Science practitioners in the modern academic library environment in India may both measure their existing competencies and also identify the need for further skills acquisition.

6. The Library Science Professionals Identify Users Requirement

Library science professionals analyse the users' digital information desires, reply to these requirements by looking the position and educate users a way to reach, evaluate, and apply information moral principles of knowledge seeking, gathering, organising, and diffusive square measure emphasised. The conception of life-long learning is embraced as an inspiration of the information literate library professional. Information explosion, development and applications of information and communication technology`s changing dynamics of information users and evolving trends in library and information services have promoted the discussion of continuing education in Library and Information Science domain. information and communication technology`s are increasingly changing the landscape of libraries and challenging the traditional prevailing roles of library and information sciences professionals. They find it hard to remain in context in this technological era. They need the new set of skills and data to deal with the challenges and problems with their career.

7. Library Science Professionals and Digital Environment

Library science professionals playing very vital role to manage and retrieve the information as resource centers shifting their emphasis from traditional to modern in digital environment. The professional skills required for the organisation of digital information to serve the society in very effectively. Information centers and documentation centers have gradually more used the latest technologies of digital environment, internet, intranets and portals for particular methods of document management.

It is becoming very problematic to locate required information without wastage of precious time whenever Dr. S. R. Ranganathan fifth law of library science approached that save the time of user, so digital form of document and digital environment help to provide the information to the right user at right time anywhere and anytime. In these situations, library science professionals are trying to obtain information and education of various systems and software to organise the sea of knowledge. The process of developing competent library science professionals is directly related to the quality of library professional education imparted to these professionals. The library professional should ensure regular training and skills development courses of all the professional sponsorship for any training and skills program. The training and skills should be based on good performance, quality content, latest technology curriculum of the library professionals.

The training and skills development programs are an essential part of an overall program of library science professional and library development to continuing education enhancement for library and information science professionals at every levels of library in digital environment. It is a process in which personnel in an organisation are purposely offered, so as to enable them to take up some new perspectives to manage with the rising trends and techniques. The library science professionals training process may take place at a number of levels within a team or group or individuals. Even though in automation or digital age, human resources are indispensable as they are mandatory to run any system. The library professionals are to be trained for high quality specialized talents and to revitalize the library services. Human resource planning and development address the issues of formal training, skill acquisition, constant up-gradation of the skills with the change digital environments. The technological changes warrant updating skills on the job apart from attending the continuing education programs to acquire new qualifications to stand in digital environment.

8. Changing Role of Library Science Professionals

The library professionals should promote their junior library professionals to participate in continuing, increasing education, training, skills and ethical programmes to serve in digital environment. Recently digital environmental pressures are forcing resources centers to point out on accelerating technology, innovation, technical complexities, social and legal issues, cost, risk, competence, skills of staff and technology itself. Therefore, the library professionals have to act in a proactive manner to support the twenty-first century educational change and trained to work in digital environment. In the field of library science drastic changes noticed day by day which creates great possibilities to the library science professionals in this field to learn and work. The library science professionals must be sponsored for trainings, conferences, seminars and workshops to learn the latest electronic technology. They should be encouraged to participate actively by presenting papers at these gatherings. The growth of electronic resources and access of latest technologies has created advance roles for library and in information professionals in introducing the mixed desires of information users and providing selected and relevant information to the needy.

9. Challenges for Library Science Professionals in Digital Environment

The major role and biggest challenges of library and information science professionals are preparing professionals to use technology effectively and systemically. The library and information science professionals have been consistently involved with the information storage and retrieval, collection development, systematic organisation of reading materials and digital information, so as to reply to user`s queries in an effective manner. It's additionally usually been noted that new information and communication technologies for the generation, process, distribution, and information storage have brought changes within the nature, volume and format of that information in digital environment. The library is one of the main parts deeply concerned by information and communication technology, which is the backbone of digital age. This is due to the fact that the information center being the major stay of information and knowledge has been made virtual such that library and information services extend beyond walls and physical buildings. It is also very important that library professionals possess particular personal qualities rather than specific technical expertise.

10. Conclusion

The role of library science professionals to provide correct information at the correct time for the appropriate users except their instructional practices needed completely different styles of skills and competence. The training, seminar, workshop and skills for library and information science professional with the abilities required to figure within the electronic library setting in digital environment. This paper examines the role of the library science professionals in terms of how the practices and procedures in library and information science education meet the needs of the actual working environment. The specialist as an information intermediator is emphasized. Users are looking for knowledge through the provision of information. The academic librarian also provides optimal information services to researchers in other fields. This remains a core value of traditional academic librarianship. Such values incorporate information literacy and knowledge management as ways of learning. The library science professionals mentioned deed training and skills in areas like information and communication technology looking out, using completely different search engines, skills in utilization social media and data of relevant websites. To beat such challenges library and information science professionals in tertiary establishments face in managing the event and delivering of electronic library services, library and information science professional in developing countries should be able to take up new roles with the abilities needed to stay relevant. The formation of catalogues including electronic resources can ensure access, authenticity, reliability and validity of networked resources. The increasing amount day by day of information available for the library users and the ways which can be accessed has in theory made it easier for library users to get the information according to their requirement.

References

11. Al-Qallaf, C. (2006), "Librarians and technology in academic and research libraries in Kuwait: perceptions and effects", Libri, Vol. 56 No. 3, pp. 168-179, available at: www.librijournal. org/pdf/2006-3pp168-179.pdf (accessed April 14, 2012).
12. Alakpodia, O.N. (2010), "Assessment of information literacy skills among librarians in Delta State University, Abraka", The Information Technologist, Vol. 7 No. 1, pp. 55-63.

13. Armstrong, C. (2001), "A study of the use of electronic information systems by higher education students in the UK", program: Electronic Library and Information Systems, Vol. 35 No. 3, pp. 241-262.
14. Ashcroft, L. (2004), "ICT skills for information professionals in developing countries: perspective from a study of the electronic information environment in Nigeria", available at: www.ifla.org/V/iflaji/IFLA-Journal-1-2005.pdf (accessed July 13, 2012).
15. Atta-Obeng, H. (2010), "Library profile: Kwame Nkrumah University of Science and Technology", Link: ACU Libraries and Information Network,p.6. OCLC 29, 2114.
16. Baro, E.E. (2010), "A survey of digital library education in library schools in Africa", OCLC Systems and Services, Vol. 26 No. 3, pp. 214-223.
17. Baro, E.E. (2011), "A survey of information literacy education in library schools in Africa", Library Review, Vol. 60 No. 3, pp. 202-217.
18. Baro, E.E. and Zoukemefa, T. (2011), "Information literacy programmes in Nigeria: a survey of 36 university libraries", New Library World, Vol. 112 Nos 11/12, pp. 549-565.
19. Bawden, D., Vilar, P. and Zabukovec, V. (2005), "Education and training for digital librarians: a Slovenia/UK comparison", Aslib Proceedings: New Information Perspectives, Vol. 57 No. 1, pp. 85-98.
20. Buarki, H., Hepmorth, M. and Murray, I. (2011), "ICT skills and employability needs at the LIS programme Kuwait: a literature review", New Library World, Vol. 112 Nos 11/12,pp. 499-512.
21. Fabunmi, B.A. (2009), "Challenges and prospects of virtual libraries in universities in Nigeria", European Journal of Scientific Research, Vol. 33 No. 1, pp. 202-208.
22. Idiodi, E.A. (2005), "Approaches to information literacy acquisition in Nigeria", Library Review, Vol. 54 No. 4, pp. 223-230.
23. Igun, E.S. (2006), "Human capital for Nigerian libraries in the 21st century", Library Philosophy and Practice, Vol. 8 No. 2.

24. Jain, P. (1999), "On the job training: a key to human resources development", Library Management, Vol. 20 No. 5, pp. 283-294.

25. Kavulya, J.M. (2003), "Challenges facing information literacy efforts in Kenya: a case study of selected university libraries in Kenya", Library Management, Vol. 24 Nos 4/5, pp. 216-222.

26. Kavulya, J.M. (2007), "Training of library and information science (LIS) professionals I Kenya: a needs assessment", Library Review, Vol. 56 No. 3, pp. 208-223.

27. Lwehabura, M.J.F. and Stilwell, C. (2008), "Information literacy in Tanzanian universities: challenges and potential opportunities", Journal of Librarianship and Information Science, Vol. 40 No. 3, pp. 179-191.

28. Abdulsalami, R. (2012), "Requirements for the acquisition of e-resources", paper presented at the Librarians' Registration Council of Nigeria (LRCN) in collaboration with the United States Mission National Workshop on E-library for Librarians, Kogi State Polytechnic, Lokoja, April 17-19.

29. Nwagwu, W.E. (2007), "Creating science and technology information databases for developing and sustaining sub-Saharan Africa's indigenous knowledge", Journal of Information Science, Vol. 33 No. 6, pp. 737-751.

30. Ojiambo, J.B. (1992), "Developing human resources capacity for information services in Africa", African Journal of Library, Archives and Information Science, Vol. 2 No. 2, pp. 83-92.

Sustainable Development of Library and Information Science Profession

Dr. Ranjan Kumar

Dept. of lib. & inf.sc., Central Library
B. R. A. Bihar University, Muzaffarpur (Bihar)

Dr. Kaushal Kishor Chaudhary

Deputy Librarian, Central Library
B.R.A. Bihar University, Muzaffarpur (Bihar)

Dr. Sumangla Jha Lect. (Selection Grade)

Library And Information Science
Govt. Women Polytechnic College
Muzaffarpur (Bihar)

ABSTACT: The world faces immense challenges which range from people living in poverty and denied dignity, rising inequalities, unemployment, global health threats, natural disasters, spiraling conflicts, violent extremism, terrorism and related humanitarian crises leading to force displacement of people, the depletion of natural resources and environmental degradation and the resultant climate change problem, just to name these. Fortunately there are recognized human rights in the context of the United Nations (UN) Universal Declaration of Human Right in Article 19 and the Africa Chatter. These problems have thus challenged the world's organizations to think and reflect on the way forward and some of these ways are development plans which include the UN Post 2015 Sustainable Development Agenda, the African Union (AU) 2063 Development Agenda with 17 aspirations, the International Federation of Library Association and Institutions (IFLA) Strategy Plan and key initiative and the Cameroon Development Vision 2035 emergence programme. These agendas require a number of stakeholders to intervene if these challenges must be reduced for the benefit of humanity. One of such stakeholders is the Library and Information Science (LIS) Profession.

The question that comes up with respect to the Cameroon context is, "Is the LIS Profession in Cameroon able to meet its information role?"In line with this, three research questions were coined to guide data collection for this paper.

1. Introduction:-

A Librarian conserves the cultural and intellectual heritage of mankind and acts as an agent of communication from information generation to the point of use. His services are indispensable in information transfer chain .This opinion was shared

by many social and information scientists like Melvil Dewey, Butler, Greenwood, Schaffer et al. and they tried to prove that Librarianship is a profession as it has many attributes of a profession. Robert D Leigh wrote that librarians have accepted professional status as a goal on the following factors:

1). "They are identified with knowledge, which is prime service of occupational prestige in our society.

2).They are service oriented rather than self-interested at least certain senses.

3). Library and Information profession belong to professional association (state and national).

4).They are trained in professional school associated with universities.

5). "They have code of ethics."

Education for Librarianship at middle and higher levels is imparted at Post-Graduate for two years. Teaching different theoretical aspects and intensive training of skills support the view that it is a profession.

Dr. S.R. Ranganathan contributed to the development of library profession in India developing standard terminology, theoretical principles LIS education from certificate to research level and introducing specialization and standard education practices. Library profession In India owes a lot to his contributions. A Librarian derives his joy by seeing the dawn of joy in the face of readers who were helped in their search or the right information at the right time.

2. LIS Profession:-

Librarianship is a distinct and distinguished profession in modern society. It is engaged in public service and plays an important role in national development. Librarianship today is termed as "Library and Information Profession" since the concept of Librarianship has changed in view of the changing information needs of the society.

3. LIS is not a Profession:-

For a long time there was dilemma whether librarianship is a profession or not. One of the views is that it is not a profession; it is believed to exist between a profession and a vocation. The medical and legal professions are ancient and hence accepted as professions from time unknown but it is not so in librarianship.

Different opinions have been expressed by social scientists about librarianship being a profession. There are those who do not agree with the professionalism of library services. Lancour (1962) does not consider librarianship as a profession on the following grounds.

1).It doesn't have the community sanction.

2).Librarians' services are not indispensible in the same way as that of doctors. Most of the library employees, both professionals and non-professionals, hide behind the shelves when looked upon for service. They are not able to serve the society confidently to earn their reputation.

4. Evolution of the LIS Profession:-

M.A. Gopinath opined that there are three distinct stages in the evolution of the LIS Profession.

1). Scholarly Period

2). Vocational Period

3). Professional Period:-

a).Librarianship as an Occupation

b). Librarianship as a Vocation

c). Librarianship as a Profession

4).Custodian

5).Librarian

6). Documentation Officer

7). Transformation of the LIS Profession

5. Categories of LIS Professionals:-

LIS professionals are generally involved in the process of acquisition, procession organizing and maintaining documents in a library and providing various types of information services based on these documents and their experience. In certain cases say in a small library, all these activities are performed by an individual. In certain cases an individual may be involved only in a single activities say cataloguing. Generally these personnel are trained through certain institutions

like universities and associations and are paid for the jobs they perform.

1). Library Administrator

2). Information Officer/Scientist

3). Digital Librarian

4). Indexer

5). Reference Librarian

6). Classifier

7). Cataloguer

8). Classificationist

9). Bibliometrician

10). Content Developer

6. Recommendations and Conclusion:-

IFLA (2014) supports the notion that, "Access to information is a fundamental human right that can break the cycle of poverty and support sustainable development". It is important to note that IFLA is the "Global Voice" for libraries and thus the LIS profession. It has proven beyond doubts, through its activities and partnership activities with funding bodies like the United Nations Organizations, that the LIS profession has an indispensable role to play in enhancing the development of the human society. It is based on these that the following recommendations have been proffered:-

- The Cameroon government should place the LIS profession on its agenda and use it as a support tool for its development agenda, Vision 2035 because the library is the only place in many communities where people can access information that will help them improve their education, develop new skills, find jobs, build businesses, make informed decision that will improve the lives of its citizens (IFLA).
- As the United Nations (UN) moves to establish a post -2015 frame work to guide development worldwide and as Cameroon moves on with its Vision 2035 development agenda, IFLA calls upon all development stakeholders to recognize that libraries in every part of the world can be reliable mech-

anisms for underpinning that delivery of sustainable development programmes. This thus goes to affirm that:

1). Libraries empower people for their own development by underpinning a society where people from any background can learn, create and innovative.

2).Libraries support a culture of literacy and foster critical thinking and inquiry.

3).Though the library, people can harness the power of technology and the internet to improve their lives and communities.

4).Libraries protects the right of users to access to information in a safe environment.

5). Libraries are socially and culturally inclusive.

6). Libraries can act as gateways to civic participation and new e-government services.

7).Libraries offer access to the world's knowledge.

8). Libraries are an essential part of a critical infrastructure that supports education, jobs and community growth.

References:-

7. IFLA (2012) Libraries: The Amazing gateway to knowledge and power. Retrieved November, 2015, from http://conference.ifla.org/past-wlic/2012/libraries-the-amazing-gateway-to-knowledge-andpower.htm
8. IFLA (2013) Future libraries infinite possibilities. Retrieved November, 2015, from http://library.ifla.org/view/conferences/2013//1
9. IFLA (2015) Post-development agenda. Retrieved November, 2015, from http://www.ifla.org/free-tags/post2015
10. IGNOU BOOKS

A functional Approach to Digital Library in India

Dr Shashi Bala Mishra

Librarian
Department English
Lucknow University Lucknow

Dr Purnima Pandey

Assistant Professor
Head Department Library & Information Science
Prof. H.n.mishra College Of Education Kanpur

Umesh Kumar Gaur

Chief Librarian
T.S.M. Medical College And Hospitals Amausi Lucknow

Abstract: The rapid advancement in Information Technologies has revolution the sole of libraries. Information Technology has its own niche in every aspect of life in the society. Changes in society & technology made variation in the life style of Indian people and their views & attitude towards the libraries. Today digital world is concerned, with creating, sharing & using information in digital form. Information Technology has almost converted the world into a global village. The rise of digital libraries has brought phenomenal change in the progress of collection, storage, preservation of rare documents, retrieval & dissemination of information. Now –a-days the ICT is considered as an important commodity and is playing an important sole for development in all fields such as education, research etc. The present study focuses on the functional aspect of the digital library. In the present society, digital libraries are playing a key role in disseminating information by providing different types of relevant & recent information to the users with a short span of time. The digital library can provide enhanced access to the electronic information sources and the users can access the digital content irrespective of time & space boundaries. This study also discusses the core elements and functional components of the digital library.

Keywords:- Information Technology, Information and communication Technology, Digital library.

1. Introduction

Rapid advances in information technologies have revolutionized the role of libraries. Information technology is causing changes in the people in their way of

communicating, retrieving & using information libraries are redesigning services and information products to add value to their services and to satisfy the changing information needs of the user community. Information technology has its own niche in every aspect of life in the society. Changes in society and technology made variations in the life style of Indian people and their views & attitude to wards the libraries. Today digital world is concerned with creating, sharing & using information in digital form. The right information to the right person at the right time is the main aim of any modern library. Information technology has almost converted the world into a global village. The revolution in the it sector is influencing the information industry also. The rise of digital libraries has also brought phenomenal changes in the progress of collection, storage, preservation of rare documents, retrieval & dissemination of information. Now-a-days the information & communication technology (ICT) is considered as an important commodity and is playing an important role for development in all fields such as education, research etc. So, information & ICT are recognized as the world's most crucial resources and the driving force for library, social development & modern economic system (unesco, 1999 ; Bilton at al, 2002).

2. Concept of Digital library:

with the impact of information technology the concept of digital library has come into scene a digital library is much more than the collection of material in its depositories. It providers a variety of services to all of its users. Digital libraries are often labeled "libraries without walls" because they rely on their connection to other libraries, information centers & source of data that are not physicals available in he library. The basis of the digital library is the information objects that provide the content in the from of digital resource.

According to candela at al. (2007) "since 2006 the term ha been generally used to refer to systems that are heterogeneous in scope and provides diverse types of functionality. These system in clued reference linking systems archives content administration systems and complex systems that integrate advanced digital library services."

Vanitha at al (2006) say "A digital library is a library consisting of digital materials and services. Digital materials and items are stored processed and transferred via digital (library) devices and networks. Digital services are services that are delivered digitally over computer networks."

Lesk (2005) defines digital library as a collection of information that is tooth digitized an organized and which offers capalrilities beyond those of the traditional

library. Smith (2001) defined digital library as an organized and focused collection of digital objects, including text, images, video & audio, with the methods of access and retrieval and for the selection, creation, organization, maintenance and sharing of collection.

Thus, viewing the above definitions, digital library is a library in which collections are stored in digital formats and accessible via computers. The digital content may be stored locally or accessed remotely via computers networks. They are the digital face of traditional libraries that include tooth digital and traditional collections.

3. Scope of the study:-

The present study focuses on the functional aspect of the digital library. In the present society digital libraries are playing a key role in disseminating information by providing different types of relevant & recent information to the users with a short span of time. Digital library can provide enhanced access to the electronic information sources and the users can access the digital content irrespective of time & space boundaries. This study also discusses the core elements and functional components of the digital library.

4. Objective of the study:-

Due to information explosion, many techniques & technologies have emerged for handling the information more readily, speedily & effectively. The main objective of the study are –

- To emphasize on the functional aspect of digital library.
- To discuss the functional components of digital library.
- To highlight the core elements of digital library.

5. Review of related litesatuse :

1- Ananthnag, k. & Suvarha, M.(2014) in their study discussed the role, functions, requirements advantages & disadvantage of digital library. They also focused on the process of digitization & challenges of digital library.

2- Hashim & Mokhtar (2012) discussed in their study that the advancement of ICT has brought a lot of change not only on the library & information services but also on the sole & expectations of the library & information professionals.

3- Chowdhury, G. (2009) discissed the commonalities of research in digital libraries and digital preservation with regard to the issues of users & context of information. He discussed some current research in digital preservation that aims to handle the users & context information for building future digital preservation systems. He also highlighted some major challengers in the areas of capturing, storing and making use of information related to users & context.

4- Sreenivasulu (2000) in his study stressed that the multimedia nature of the next generation of digital libraries requires the digital libraries who have to manage & organize the digital library digital reference service, electronic reference service search co-ordiination and manage the archive and its access.

6. Methodology:

The conceptual & textual information related to the present study was collected from primary & secondary sources of information such as looks, national & international journals research papers.

7. Discussions-

Features of digital library- Digital library is the one which really helps the user to get access to the digital resources directly on the screen of their computer it self. Digital library is reforming the dissemination of the information with respect to the availability of speed & access. The main features of the digital library are-

- All resources are in digital from.
- Accessibility from anywhere & anytime.
- Availability for long time.
- Network accessibility.
- User friendly interface to access the information.
- Providing access to very large collections including access to primary and secondary sources of information.
- Provide clint –server architecture.
- Advanced search & retrieval of information.

- Dynamic & ephemeral.
- Supporting multimedia content and fractal objects.
- Free as well as fee-based.
- Greater opporturity for publishing.

8. Core elements of digital library:

There are three broad classes of library elements-

A. Data – Data are library materials. Ex- a book in a library may be thought of data of the library.

B. Metadata:- Metadata popularly known as data about data refers to the information about the library and its materials.

- Ex - an index a card catalog may be thought of the library metadata.

C. Processes :- processes are active functions performed over library elements.

- Ex- The act of a librarian helping a patron find a look by suggesting the use of the card catalog may be thought of as process.

9. Functional components of digital library:

Most digital library share common functional components. They are-

A. Selection & acquisition:- This components includes the selection of documents to be added the subscription of data base and the digitization or conversion of documents to an appropriate digital from.

B. Organization:- This component includes the assignment of the meta data (lribliographic information) to each document being added to the collection.

C. Indexing & storage :- This component carries out the indexing and storage of documents and meta data for efficient search and retrieval.

D. Search & retrival:- This is the digital library interface used by the end users to browse, search, retrieve and view the contents at the digital library. It is typing presented to the users as hyper Text-mark-up languages (HTML) page.

10. Functions of digital library:

The Digital library is an information service in which all the information resources are available in complete processable from and the functions of acquisition storage preservation retrieval access and display are carried out through the use of digital technology. The resources in digital library can be divided into those that are originally created in a digital format such as electronic journals and data sets those originally non-digital resource such as manuscripts and print that are subsequently digitized. A digital library can disseminate its information across a network and users can retrieval information in the same way. Digital library preserves and provides access to the increasing number of publications that are being produced only electronically such as web sites & e-journals. Digital library offers the potential to bring these distriluted collections together into a single virtual collection. Both storage & access are fully electronic in way that users can access whatever they need from their desktop. In digital library all information objects are available directly or indirectly via electronic means which makes enhanced retrieval functionalities possible. Digital libraries provide efficient and qualitative services by collecting organizing strong disseminating retrieving and preserving the information. The important functions of digital library are –

- Digital library supports preservation besides making information retrieval and delivery more comfortable.
- Digital library provides on-line access to historical &cultural documents whose existence is endangered due to physical decay.
- It supports advanced search and retrieval for betters access to information.
- Digital library access to large amounts of information to users whenever and wherever they need it.
- Digital library access to national & international journals which are being published only in machine readable from.
- It provides network accessibility on intranet & internet.
- It supports multimedia content along with text.
- Digital library provides need-based and retrospective search services to the users.
- Digital library provides resource discovery mechanisms that allow users to identify relevant or required resource & their locations.

- It enables one to perform searches that is not possible manually.
- It provides user-friendly interface.
- Digital library provides facility for networking and resource sharing.
- Digital library makes available various types of knowledge resource.
- It provides means to enrich the teaching learning environment.
- Digital library manages contents from multiple locations.
- It supports all sort of library operations and functions.

11. Conclusion

The present study revealed that automation in the libraries has become a new phenomenon. The digital technological development offered more efficient & new ways in information processing and management. To this context digital library systems came into existence which are for long-term preservation of large documents collection. Users want letter & effective information as library materials scientific database in education and research. Therefore, digital libraries play a vital role to satisfy the needs of users. Now one can access high speed network and retrieval device due to availability of computers processing power on affordable price which became possible due to advancement in information technology. In turn this capability provides us control to accumulate & relocate big volume of information in digital format at low cast. Besides electronic publishing & resource sharing activities have become easy & convenient.

Digital library has provided wider opportunities in archiving and accessing knowledge in the digitized from besides conservation & preservation of the traditional knowledge. Digital library will provide enhanced access to the electronic information source and the users can access the digital content beyond time and space boundaries. Digital libraries provide an effective means to distribute learning resource to students & other users (Adams, Jansen & Smith, 1999). They present opportunities and challengers for the library & information communities and all stakeholders. The digital library has to triumph over the hang-up and took to the lead for the betterment of information services to he user society by adopting the digital technology. It is suggestible that library should collaborate with each other so that more and information could be made available to the users. The digital library can offer the reasonable & appropriate access to a large amount of assorted information sources through consortium.

References

1. Ali, Amjad (2007), digital library and information networks New Delhi: ESS ESS publications.pp.170-207.
2. Arms, William y.(2000). Digital library Cambridge: MA: MIT Press.
3. Arora, Jagdish(2001). Building digital library: an overview. DESIDOC Bulletin of information technology. 21(6) pp. 3-24.
4. Banerji, s.& chakrabarty, B.(1999). Digital libraries: some issues & perspective, ILA Bullentin, 34(3-4) pp. 60-63.
5. Bearman, D.(2007) Digital libraries. Annual Review of information science & Technology. 41, pp.223-72.
6. Chowdhury, G. & Chowdhury, S.(2003). Introduction to digital libraries. London facet publishing.
7. Bass, R.W.(1984). Library managers Guide to automation. Iind ed. New York; knowledge industry.
8. DESIDOC(1997). Bullentin of information technology. 17(6) (special issues on digital libraries)
9. Gopal, K.(2009). Digital libraries in electronic information era. New Delhi: Author press.
10. Green stein, D.I. & Thorin, S.E.(2002). The digital library: A biography. Digital library Federation.
11. Kawatra, P.S. (2000). Text book of information science. New Delhi: APH publishing corporation.
12. Kumar, PSG(1987). Computerization of Indian libraries, New Delhi: B.R. publishing
13. Lagoze carl dean at al (2005). "what is a digital library anymore, anyway" d-lib magazine. 11(11).
14. Mahesh, G.& Mittal, R.(2008). Digital libraries in india: a review libri, vol.58, pp.15-24

Availability of Information Communication Technology Infrastructure in the Central Libraries of old Indian Institutes of Technology (IITs): A Study

Anjali Verma

Research Scholar (PhD)
Department of Library and Information Science
Babasaheb Bhimrao Ambedkar University Lucknow
Mob. No. 9580618206 Email Id.-anjaliv.7376@gmail.com
and

Dr. Sharad Kumar Sonkar

Assistant Professor/Supervisor
Department of Library and Information Science
Babasaheb Bhimrao Ambedkar University Lucknow
Mob. No. 09838616581 Email Id.- sksonker@yahoo.co.in

Abstract: The current paper discusses about the use of ICT infrastructure in the Central Libraries ofold Indian Institutes of Technology in India. The study explores theuse of library management software, security system, library network, browser, network system software, internet connectivity and antivirus.5 central libraries of old IITs are using Libsys software. All the IITs are using DSpace institutional repository software for archiving their intellectual work. Most of the IITs are using CCTV Security System and majority of central libraries of IITshaveLocal Area Network. All the IITs are using Google Chrome and Most (71.43%) of the IIT libraries are using LINUX operating system. 71.43% centrallibraries of IITs are using Wi-Fiand broad band for the internet.

Keywords: ICT (Information Communication Technology), Infrastructure, Indian Institutes of Technology (IITs), Library Network.

1. Introduction

The libraries are changing their shape and size due to information technology. Information Communication Technology has transformed the traditional libraries as well as print materials in to electronic form.The information needs of the users have diversified due to information literacy. To cope of the information need of the users, library and information centres are modernising their infrastructure and services. Information technology is used as tools for the library professional for collection, organisation, process and dissemination of the knowledge. For the creation of new services and update existing services, one has to developproper ICT based infrastructure in the libraries and information centres. Electronic

information resources have ample of opportunities in the collection development, creation of new services and up-gradation of existing information services. For optimum utilisation of electronic resources and modern library and information services to the potential users, libraries should develop adequate ICT infrastructure.

2. Review of Literature

Bassey (2016) studied on Adoption of Software Packages in University Libraries in Nigeria and found that KOHA is the most widely adopted and used software package.He also perceived that the level of automation of university libraries in Nigeria is very low.

Verma, Choudhary and Mamta Rani (2015) studied on Use of Integrated Library Software in the Engineering College Libraries of Lucknow: A Survey. They found that the majority of libraries are using local software or customize software. They also revealed that majority of installations and used software is Libsys among libraries.

Kumar (2015) studied on Information and Communication Technology Facilities and Services among Engineering College Libraries in Rayalaseema Region of Andhra Pradesh. He found that 87.65% libraries provide windows XP and VSAT is mostly used communication service. About 60% libraries are partially automated and barcode technique is most frequently opted for circulation.

Seena and SudhierPllai (2014) did a study on ICT skills among library professionals in the Kerala University Library System and explored that Libsys software was mostly used by the libraries. All the professionals expressed positive attitude towards the application of ICT in libraries.

Satish Kumar and Singh (2014) did survey on Application and Use of Library Software in Central University Libraries: A Comparative Study and found thatUtilization of software as well as services provided through software by both the libraries, most of the problems were faced during automation by Aligarh Muslim University library. It is observed that both libraries were having IT infrastructure and other accessories.

Satish Kumar and Singh (2014) surveyed on Application and Use of Library Software: A Survey of Selected Central University Libraries of North India and concluded that all the selected university libraries are using automation software but JamiaMilliaIslamiais suing efficiently followed by Delhi University, three universities out of five are using Libsys.

Sivakumaren, Geetha and Jeyaprakash (2011) studied on ICT Facilities in University Libraries: A Study and revealed 90% of the libraries have implemented library automation and digital library software. Technologies such as barcode, smart card, RFID, videoconferencing and Internet technonology were identified.

Dhanavandan, Esmail and Nagarajan (2011)analysed the ICT infrastructure facilities with reference to self-financing engineering college libraries in Tamilnadu. The study traced out the status of electronic resources in terms of topology of library network, electronic access points, electronic database, e-journals and electronic resources in the libraries. The study reveals that most of the engineering colleges in Tamil Nadu use the library application software in their libraries.

Walmiki and Ramkrishnagowde(2009) surveyed on ICT Infrastructure in six selected University Libraries of Karnataka and got results that the most of the libraries are lacking with the sufficient hardware and software facility, these libraries don't have adequate internet and bandwidth. Study also reveals that the libraries are vary one to another in ICT Infrastructure and campus LANs are not fully extended to exploit the benefit of digital environment.

LanAnh Tran and Gorman (1999) studied on the Implementation of Information Technology in Vietnamese Libraries and they discuss about the progress in the implementation of IT in the library and information sector. They found that many Vietnamese libraries have basic IT hardware and software and the telecommunications infrastructure has improved to the point that most libraries have reliable telephone links.

3. Objectives of the Study

1. To explore the ICT infrastructure facilities available in the central libraries.
2. To know the use of Library Management Software in the library.
3. To investigate the use of Security System and Library Network.
4. To find out the use of Browser, Network System Software and Antivirus in the Library.

4. Scope of the Study

Indian Institutes of Technology are the most reputed institutions of higher education and research. There is twenty three Indian Institutes of Technology which are located in the different parts of country but in this, only seven IITs

have been taken for the study which has been established from 1951 to 2001. IITs established between 1951 to 2001 (IIT Kharagpur, IIT Bombay, IIT Kanpur, IIT Madras, IIT Delhi, IIT Guwahati, IIT Roorkee) are old IITs.

5. Research Methodology

The present study focuses on ICT Infrastructure in the Central Libraries of old Indian Institutes of Technology in India. The survey research method has been adopted for the collection of data. Questionnaire was usedas a tool of data collection. 7 Questionnaires were distributed to the librarians of 7Indian Institutes of Technology by E-mail as well as personal visit. All the 7 questionnaires were received from the Institutes. After receiving questionnaire, simply data has been analysed and findings and conclusion has been written.

6. Data Analysis and Interpretation

6.1 Distribution of Questionnaire

Table- 1 Distribution of Questionnaire

S. No.	IITs	QuestionnaireDistributed	QuestionnaireReceived	(%)
1	IITKGP	1	1	100.00
2	IITB	1	1	100.00
3	IITM	1	1	100.00
4	IITK	1	1	100.00
5	IITD	1	1	100.00
6	IITG	1	1	100.00
7	IITR	1	1	100.00
Total		7	7	100.00

Aforesaid table shows that the distribution of questionnaireto the librarian of central libraries ofold Indian Institutes of Technology. 7 Questionnaires were distributed to librarian of the 7 Indian Institutes of Technology. All the 7 questionnaires were received from the Institutes. It means that 100% responses were given by the respondents.

6.2 Availability of Equipment in the Library

Table- 2 Library Equipments

S. No.				
IITs		Storage devices	UPSBack-upFacility	Digital Camera
1	IITKGP	-	√	√
2	IITB	√	√	-
3	IITM	√	√	-
4	IITK	-	√	√
5	IITD	√	√	√
6	IITG	√	√	√
7	IITR	-	√	√
Total		4	7	5
Percentage		57.14%	100.00%	71.43%

*** Multiple answers were permitted**

It is observed from the table no. 2, 7 (100%) libraries have UPSBack-upfacility. The study also reveals that 5 (71.43%) central libraries that are IIT Kharagpur, IIT Kanpur, IIT Delhi IIT Guwahati and IIT Roorkee have facility ofdigital camera while 4 (57.14%) libraries that are IIT Bombay, IIT Madras, IIT Delhi and IIT Guwahati have facility of storage devices.

6.3 Use of Library Management Software

Table- 3Library Management Software

S. No.					
IITs		Koha	Libsys	VTLS	Other
1	IITKGP	-	√	-	-
2	IITB	√	-	-	Libsuit
3	IITM	-	-	√	-
4	IITK	-	√	-	-
5	IITD	-	√	-	-
6	IITG	-	√	-	-
7	IITR	-	√	-	-
Total		1	5	1	1
Percentage		14.28%	71.43%	14.28%	14.28%

*** Multiple answers were permitted**

Table 4 shows that software facilities available in the library in which 5 (71.43%) central libraries (IIT Kharagpur, IIT Kanpur, IIT Delhi, IIT Guwahati and IIT Rorkee)are using Libsys while IIT Bombay is using Koha and Libsuit library management software and IIT Madras is using VTLS software.

6.4 Use of digital/institutional repository software

Table- 4Digital/institutional repository software

S. No.	IITs	D-Space	Greenstone	E-Print Archive
1	IITKGP	√	-	-
2	IITB	√	-	-
3	IITM	√	-	√
4	IITK	√	-	-
5	IITD	√	-	-
6	IITG	√	-	-
7	IITR	√	-	-
Total		7	-	1
Percentage		100.00%	-	14.28%

*** Multiple answers were permitted**

It has been found from the table number 4 that all (100%) libraries are using digital/institutional repository software and no library is usingGreenstone software and E-Print Archive. Result clearly explore that the Indian Institutes of Technology libraries are using DSpaceinstitutional repository software for archiving their intellectual work (Journals, Theses, Dissertations etc.).

6.5 Use of Security System in the Library

Table-5 Use of Security System in the Library

S. No.	IITs	CCTV	Smart card	RFID	Biometrics	Other
1	IITKGP	√	-	-	-	-
2	IITB	√	-	-	-	3M System
3	IITM	√	√	√	√	-
4	IITK	-	-	-	-	-
5	IITD	√	√	√	√	-
6	IITG	√	√	√	-	-
7	IITR	√	-	√	-	-

Total	6	3	4	2	1
Percentage	85.71%	42.86%	57.43%	28.57%	14.28%

*** Multiple answers were permitted**

It is depicted from the table 5 that the use of security system in the library where 6 (85.71%) libraries are using CCTV followed by4 (57.43%) central libraries are using RFID, 3 (42.86%) are using smart cards protect the library. It means that majority of central library of Indian Institutes of Technology are using CCTV cameras to guard the documents of library. IIT Madras and IIT Delhi are also using Biometric and IIT Bombay is also using 3M System security.

6.6 Use of antivirus in the Library

Table-6 Use of antivirus in the Library

S. No.	IITs	McAfee	Quick Heel	Kespersky	Other
1	IITKGP	-	-	-	eTrust
2	IITB	-	-	-	-
3	IITM	-	-	√	-
4	IITK	-	-	-	Manag by CC
5	IITD	-	-	-	Inhouse
6	IITG	-	-	-	MS Essential
7	IITR	-	-	-	-
Total		2	3	1	4
Percentage		28.57%	42.86%	14.28%	57.43%

*** Multiple answers were permitted**

Aforesaid table investigates that the use of antivirus in the central library of Indian Institutes of Technology where 3 (42.86%) libraries are using the Quick Heel antivirus software to protect the computers while 2 (28.57%) libraries are using McAfee. Majority 4 (57.43%) of central libraries of libraries are using other than these antivirus software like eTrust by IIT Kharagpur, MS Essential by IIT Guwahati. In IIT Kanpur, it is managed by computer centre and in IIT Delhi there is in-house antivirus software. IIT Madras is using Kespersky antivirus software to protect their computer systems.

6.7 Use of Browser in the Library

Table-7 Use of Browser in the Library

S. No.	IITs	Google Chrome	Mozilla Firefox	Internet Explorer
1	IITKGP	√	√	√
2	IITB	√	√	-
3	IITM	√	√	√
4	IITK	√	√	√
5	IITD	√	√	√
6	IITG	√	√	-
7	IITR	√	-	-
Total		7	6	4
Percentage		100.00%	85.71%	57.43%

*** Multiple answers were permitted**

It is perceived from the table number 7 which show that the use of browser in thecentral libraries of Indian Institutes of Technology where all (100%) the libraries are using Google Chrome while 6 (85.71%) libraries are using Mozilla Firefox and 4 (57.43%) libraries are using Internet Explorer. It means that the Google Chrome is dominating on the Mozilla Firefox and Internet Explorer in the central libraries of Indian Institute of Technology.

6.8 Use of Network System Software in the Library

Table-8 Use of Network System Software in the Library

S. No.	IITs	UNIX	LINUX	Windows NT
1	IITKGP	-	√	-
2	IITB	-	√	-
3	IITM	-	√	-
4	IITK	-	-	-
5	IITD	-	√	-
6	IITG	-	√	-
7	IITR	-	-	√
Total		-	5	1
Percentage		-	71.43%	14.28%

*** Multiple answers were permitted**

Table number 8 depicts the Network System Software in the Library where 5 (71.43%) libraries are using Linux while 1 (14.28%) libraries are using Windows NT and no one library is using UNIX. It implies that Linux is dominating over the Windows NT and UNIX in the central libraries of Indian Institutes of Technology.

6.9 Use of Library Network

Table-9 Type of Library Network

S. No.	IITs	LAN	MAN	WAN
1	IITKGP	√	-	-
2	IITB	√	-	-
3	IITM	√	-	-
4	IITK	√	-	√
5	IITD	√	√	√
6	IITG	√	-	-
7	IITR	√	-	-
Total		7	1	2
Percentage		100.00%	14.28%	28.56%

*** Multiple answers were permitted**

Above tabledeals with the Library Network where 7 (100.00%) libraries are using the Local Area Network (LAN) while 1 (14.25%) library is using the Metropolitan Area Network (MAN) and only 2 (12.65%) libraries are using Wide Area Network (WAN). It clearly means that the LAN is dominating over MAN and WAN. Only IIT Delhi is using all three LAN, MAN and WAN network.

6.10 Internet connectivity

Table-10Internet connectivity

S. No.	IITs	Broad Band	Wi-Fi	Li-Fi
1	IITKGP	√	-	NKN Connectivity
2	IITB	-	√	-
3	IITM	√	-	-
4	IITK	√	√	-
5	IITD	√	√	-

6	IITG	√	√	-
7	IITR	-	√	-
Total		5	5	1
Percentage		71.43%	71.43%	14.28%

* Multiple answers were permitted

It was found from the study that 5(71.43%)centrallibraries that are IIT Kharagpur, IIT Madras, IIT Kanpur, IIT Delhi and IIT Guwahati are using Wi-Fi while also 5 (71.43%) libraries that are IIT Bombay, IIT Kanpur, IIT Delhi, IIT Guwahati and IIT Roorkee are using broadband and only 1 (14.28%) library is using Li-Fi (NKN Connectivity).

7. Conclusion:

Now day's information communication technology, ICT infrastructure, library automation and networking are playing vital role in the libraries.Study reveals that all (100%) central libraries have UPSBack-upfacility. The study also reveals that 4 (57.14%) libraries have storage devices and 5 (71.43%) libraries have the facility of digital camera. All the central libraries of IIT provide software facilities in the library in which majority of central libraries of IIT are using Libsys software. Survey explores that all libraries are using D-Space digital/institutional repository software and IIT Madras is also using the E-Print Archive software. Majority of libraries have CCTV followed by smart cards and RFID to protect their library.3 (42.86%) libraries are using the Quick Heel antivirus software to protect the computers while 2 (28.57%) libraries are using McAfee. Majority 4 (57.43%) of central libraries of libraries are using other than these antivirus software like eTrust by IIT Kharagpur, MS Essential by IIT Guwahati.All the libraries are using Google Chrome. Majority of libraries are using Linux followed by Windows NT and no library is using UNIX. Majority of libraries are using Local Area Network (LAN). IIT Bombay is providing the highest bandwidth capacity that is 2.7 GBPS followed by IIT Kharagpur. The applications of Information Communication Technology are increasing in academic libraries. Library users are waiting about the infrastructure which should be excellent due to developments in technologies. The results of the study is supporting to earlier studies done by others (Bassey 2016) studied on Adoption of Software Packages in University Libraries in Nigeria and found that KOHA is the most widely adopted and used software package. (Seena and SudhierPllai, 2014) studied that Libsys software was mostly used by the libraries.

References

1. Bassey, R. S. (2016). Adoption of Software Packages in University Libraries in Nigeria. *Philosophy and Practice (e-journal),* Retrieved on 15th February 2017 from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=3654&context=libphilprac
2. Verma, A., Choudhary, R. K. and Mamta Rani (2015). Use of Integrated Library Software in the Engineering College Libraries of Lucknow: A Survey. *KIIT Journal of Library and Information Management,* 2(1), 72-84.
3. Kumar, K. (2015). Information and Communication Technology Facilities and Services among Engineering College Libraries in Rayalaseema Region of Andhra Pradesh. *DESIDOC Journal of Library & Information Technology,* 35, (5), 335-342. Retrieved on 5th January 2017 at file:///C:/Users/Anjali/Downloads/8600-25081-1-PB.pdf DOI: 10.14429/djlit.35.5.8600 2015.
4. Seena, S. T. and SudhierPllai, K. G. (2014). A study of ICT skills among library professionals in the Kerala University Library System. *Annals of Library and Information Studies,* 61, 132-141. Accessed on 10th January 2017 from http://nopr.niscair.res.in/bitstream/123456789/29034/1/ALIS%2061(2)%20132-141.pdf
5. Satish Kumar and Singh, M. P. (2014). Application and Use of Library Software in Central University Libraries: A Comparative Study. *e-Library Science Research Journal,* 3(1),1-6.
6. Satish Kumar and Singh, M. P. (2014). Application and Use of Library Software: A Survey of Selected Central University Libraries of North India. *Asian Journal of Library and Information Science, 6(1-2), 57-62.*
7. K. S. Sivakumaren, V. Geetha and B. Jeyaprakash (2011). ICT Facilities in University Libraries: A Study. *Library Philosophy and Practice (e-journal).* Retrieved on 2ndFebruary 2017 from http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1660&context=libphilpra
8. Dhanavandan, S. and Nagarajan, M. (2011). Information Communication-Technology (ICT) Infrastructure Facilities in Self-Financing Engineering

College Libraries in Tamil Nadu. *Library Philosophy and Practice (e-journal).* Accessed on 31st January 2017 at https://www.webpages.uidaho.edu/~mbolin/dhanavandan-esmail-nagarajan.pdf

9. Walmiki, R. H. and Ramkrishnagowde, K. C. (2009). ICT Infrastructure in University Libraries of Karnataka. *Annals of Library and Information Studies,* 56, 236-241. Accessed on 31st January 2017 from http://nopr.niscair.res.in/bitstream/123456789/7261/1/ALIS%2056(4)%20236-241.pdf
10. LanAnh Tran and G.E. Gorman (1999). The implementation of information technology in Vietnamese libraries Results of a survey. *Asian Libraries,* 8 (10), 380-395. Retrieved on 16th February 2017 from http://www.emeraldinsight.com/doi/pdfplus/10.1108/10176749910301876 http://dx.doi.org/10.1108/10176749910301876
11. VKJ Jeevan and Padhi, P (2008). Infrastructure, resources and services in IIT Libraries: results of a questionnaire survey. *SRELS Journal of Information Management,* 45(4), 455-472. Retrieved on 6th April 2017 from https://scholar.google.com/citations?view_op=view_citation&hl=th&user=Ar4mTlsAAAAJ&cstart=20&citation_for_view=Ar4mTlsAAAAJ:YOwf2qJgpHMC DOI 2013201420152016
12. Bandyopadhyay, A. K. and Mondal, A. K. (2014). Availability of ICT infrastructure in the University Libraries of West Bengal, *India.Journal of Library & Information Science* , 4 (2). Accessed on 31st January 2017 from https://www.researchgate.net/publication/281859669
13. Konwar, U. K., and Sinha, M. K. (2014). Status of ICT infrastructure and Development of College Library Network among the major colleges of Barak Valley, SouthernAssam:ACase Study. *9th Convention PLANNER, Dibrugarh University, Assam,* 156-164.Retrieved on 30th January 2017 fromhttp://ir.inflibnet.ac.in/bitstream/1944/1807/1/18.pdf
14. Amara Malik and Khalid Mahmood, (2013). Infrastructure needed for digital reference service (DRS) in university libraries: An exploratory survey in the Punjab, Pakistan. *Library Review,* 62 (6/7), 420 – 428. Retrieved on 4th February 2017 from http://www.emeraldinsight.com/

doi/full/10.1108/LR-12-2012-0129 DOI http://dx.doi.org/10.1108/LR-12-2012-0129

15. Nebeolise, L. N. (2013). The Impact of Information and Communication Technology (ICT) Compliant Librarians on Library Services Delivery in Academic Library: The Case of National Open University of Nigeria (Noun) Library. *The International Journal of Engineering And Science (IJES),* 2 (8), 37-43. Accessed on 10th February 2017 from http://www.theijes.com/papers/v2-i8/Part.1/G0281037043.pdf

Abbreviations

IITKGP	Indian Institute of Technology Kharagpur
IITB	Indian Institute of Technology Bombay
IITM	Indian Institute of Technology Madras
IITK	Indian Institute of Technology Kanpur
IITD	Indian Institute of Technology Delhi
IITG	Indian Institute of Technology Guwahati
IITR	Indian Institute of Technology Roorkee

CLOUD COMPUTING: AN OVERVIEW

***Dr.Chandra Prakash Dubey**

*Head DLIS, Mariahu P.G. College,Mariahu Jaunpur (U.P.)

****Shweta Dubey**

**Research Scholar,LIS, APS University, Rewa (M.P.)

Abstract: This paper sums up the information about cloud computing at a glance. It briefly describes the essential characteristic any cloud application hold within itself along with goals that any cloud is hoped to fulfill. Despite of this information it also inculcates cloud delivery model and cloud deployment model along with their feature n the purpose for which they are best suited. At last but not the least this paper has depicted certain major advantages that a utilization of cloud upholds with itself.

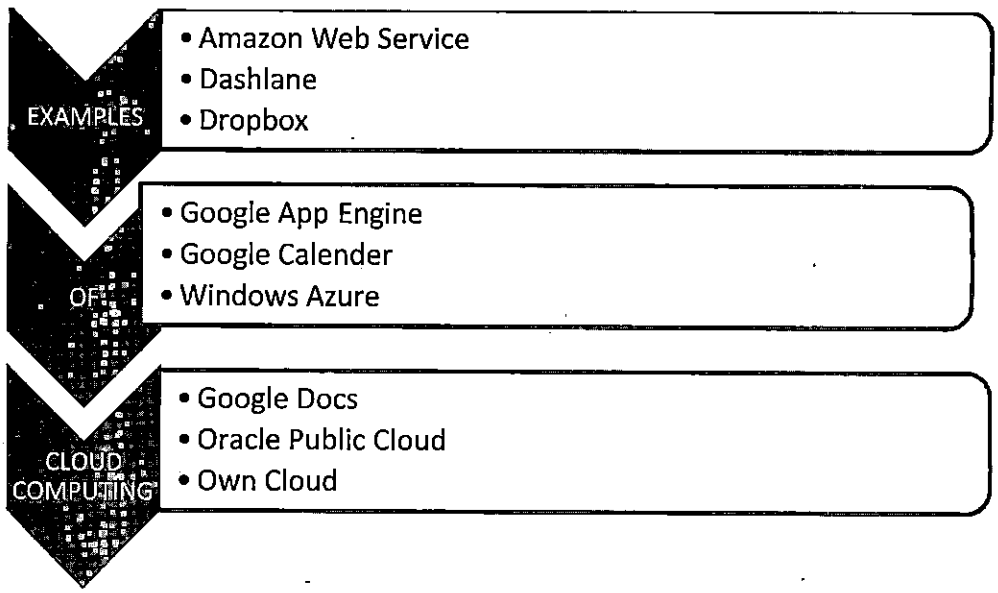
Keywords: Cloud computing, virtualization, IT, SOA, network, cloud, internet

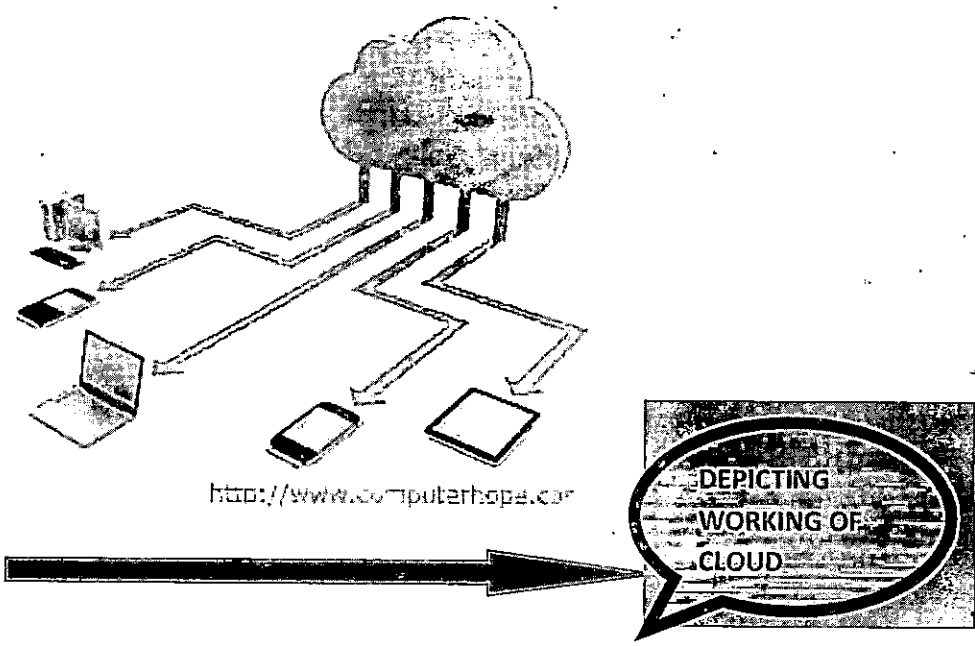
1. INTRODUCTION

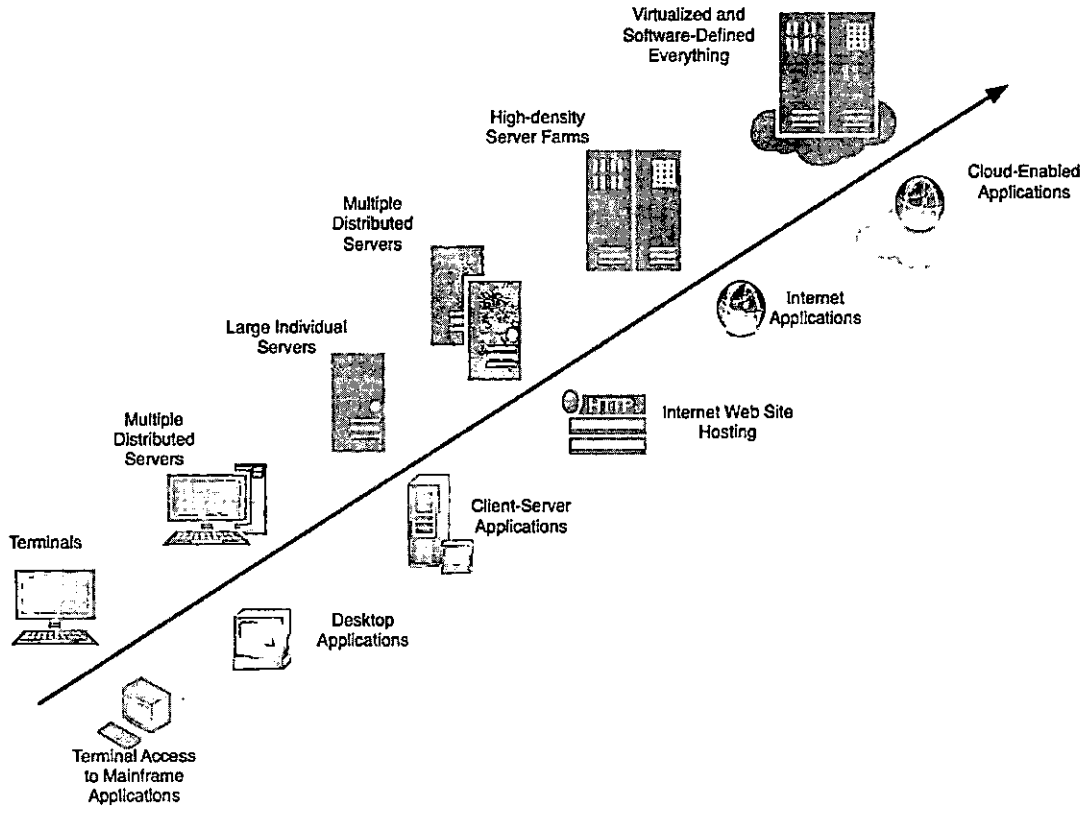
Cloud computing is a general term for the delivery of hosted services over the internet. **Cloud Computing** is the use of hardware and software to deliver a service over a network .With **cloud computing**, users can access files and use applications from any device that can access the Internet **Cloud computing** is a term used to describe services provided over a network by a collection of remote servers. This abstract "cloud" of computers provides massive, distributed storage and processing power, which can be accessed by any Internet-connected device running a web browser. A *cloud* refers to a distinct IT environment that is designed for the purpose of remotely provisioning scalable and measured IT resources. The term originated as a metaphor for the Internet which is, in essence, a network of networks providing remote access to a set of decentralized IT resources. Prior to cloud computing becoming its own formalized IT industry segment, the symbol of a cloud was commonly used to represent the Internet in a variety of specifications and mainstream documentation of Web-based architectures.

It is important to distinguish the term "cloud" and the cloud symbol from the Internet. As a specific environment used to remotely provision IT resources, a cloud has a finite boundary. There are many individual clouds that are accessible

via the Internet because the term cloud computing is a broad term, it is likely if you have spent any time on the Internet or use devices connected to the Internet that you have used some cloud computing. Below are some common examples of cloud computing you have likely heard of or used.



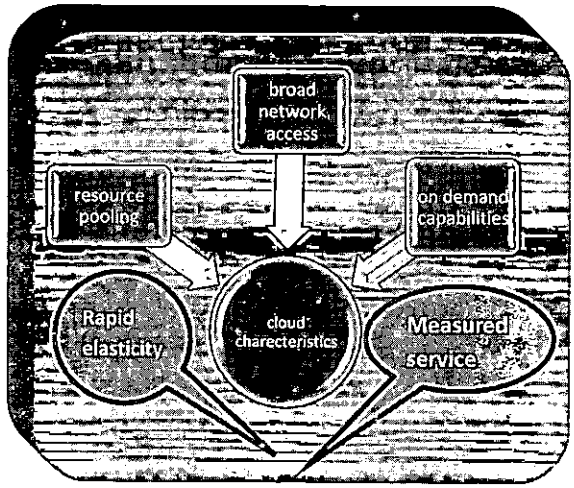




2. CLOUD CHARACTERISTICS

Cloud technology is in the news quite often these days, but it still seems to be mysterious and confusing to the non-techie crowd. Cloud options are enticing various industries across the board, which is why it's important to know its essential characteristics as a software offering. Here are the five main characteristics that cloud computing offers businesses today.

1. **On-demand capabilities:** A business will secure cloud-hosting services through a cloud host provider which could be your usual software vendor. You have access to your services and you have the power to change cloud services through an online control panel or directly with the provider



2. **Broad network access:** Your team can access business management solutions using their smart phones, tablets, laptops, and office computers. They can use these devices wherever they are located with a simple online access point. Broad network access includes private clouds that operate within a company's firewall, public clouds, or a hybrid deployment.
3. **Resource pooling:** The cloud enables your employees to enter and use data within the business management software hosted in the cloud at the same time, from any location, and at any time. This is an attractive feature for multiple business offices and field service or sales teams that are usually outside the office.
4. **Rapid elasticity:** If anything, the cloud is flexible and scalable to suit your immediate business needs. You can quickly and easily add or remove users, software features, and other resources.
5. **Measured service:** Going back to the affordable nature of the cloud, you only pay for what you use. You and your cloud provider can measure storage levels, processing, bandwidth, and the number of user accounts and you are billed appropriately. The amount of resources that you may use can be monitored and controlled from both your side and your cloud provider's side which provides transparency.

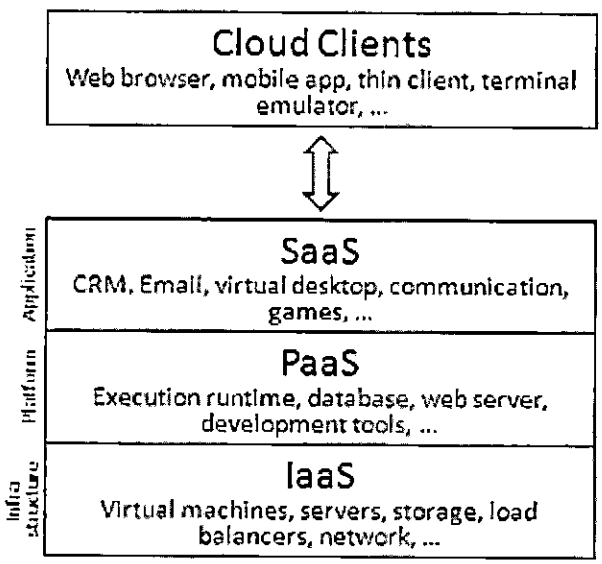
3. GOAL OF CC

The goal of cloud computing is to allow users to take benefit from all of these technologies, without the need for deep knowledge about or expertise with each

one of them. The cloud aims to cut costs, and helps the users focus on their core business instead of being impeded by IT obstacles. The main enabling technology for cloud computing is virtualization. Virtualization software separates a physical computing device into one or more "virtual" devices, each of which can be easily used and managed to perform computing tasks. Virtualization provides the agility required to speed up IT operations, and reduces cost by increasing infrastructure utilization. Autonomic computing automates the process through which the user can provision resources on-demand. Cloud computing adopts concepts from Service-oriented Architecture (SOA) that can help the user break these problems into services that can be integrated to provide a solution

4. CLOUD DELIEVERY MODEL

Though service-oriented architecture advocates "everything as a service" (with the acronyms EaaS or XaaS or simply **aas**), cloud-computing providers offer their "services" according to different models, of which the three standard models per NIST are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS). These models offer increasing abstraction; they are thus often portrayed as layers in a stack: infrastructure-, platform- and software-as-a-service but these need not be related. For example, one can provide SaaS implemented on physical machines (bare metal), without using underlying PaaS or IaaS layers, and conversely one can run a program on IaaS and access it directly, without wrapping it as SaaS.



Cloud computing service models arranged as layers in a stack. The NIST's definition of cloud computing defines the service models as follows:-

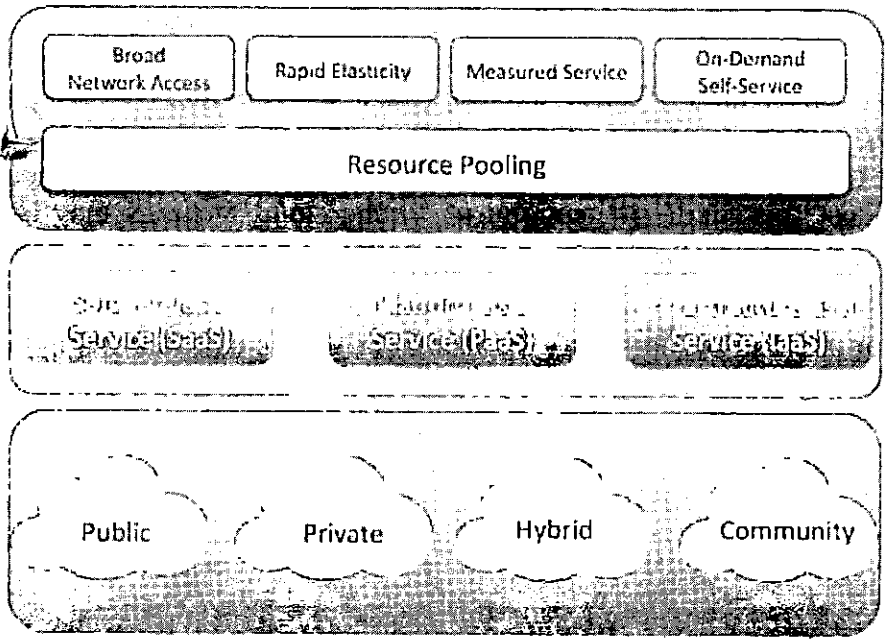
Software as a Service (SaaS). The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface

Platform as a Service (PaaS). The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider

Infrastructure as a Service (IaaS). The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications.

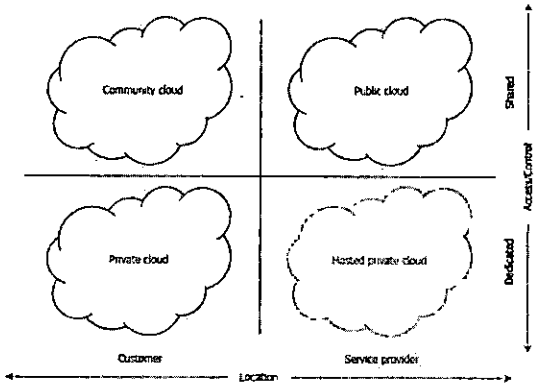
Mobile "backend" as a service (MBaaS) In the mobile "backend" as a service (m) model, also known as backend as a service (BaaS), web app and mobile app developers are provided with a way to link their applications to cloud storage and cloud computing services with application programming interfaces (APIs) exposed to their applications and custom software development kits (SDKs).

Serverless computing Serverless computing is a cloud computing code execution model in which the cloud provider fully manages starting and stopping virtual machines as necessary to serve requests, and requests are billed by an abstract measure of the resources required to satisfy the request, rather than per virtual machine, per hour. Despite the name, it does not actually involve running code without servers. Serverless computing is so named because the business or person that owns the system does not have to purchase, rent or provision servers or virtual machines for the back-end code to run on.



5. CLOUD COMPUTING DEPLOYMENT MODELS

Cloud hosting deployment models represent the exact category of cloud environment and are mainly distinguished by the proprietorship, size and access. It tells about the purpose and the nature of the cloud. Most of the organisations are willing to implement cloud as it reduces the capital expenditure and controls operating cost. In order to know which deployment model matches your website requirements it is necessary to know the four deployment models.



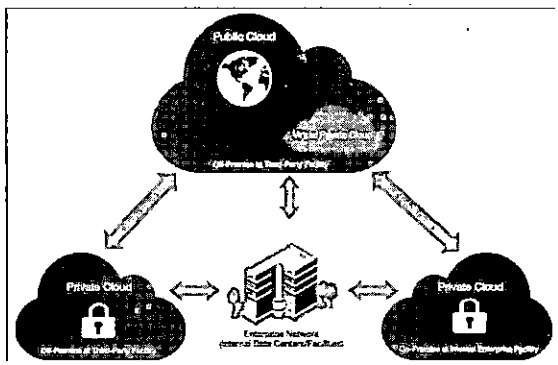
Public Cloud: is a type of cloud hosting in which the cloud services are delivered

over a network which is open for public usage. This model is a true representation of cloud hosting; in this the service provider renders services and infrastructure to various clients. Public cloud is better suited for business requirements which require managing the load; host application that is SaaS-based and manages applications that many users consume. Due to the decreased capital overheads and operational cost this model is economical. Public cloud facilities may be availed free an e.g. of a public cloud is Google.

Private Cloud: is also known as internal cloud; the platform for cloud computing is implemented on a cloud-based secure environment that is safeguarded by a firewall which is under the governance of the IT department that belongs to the particular corporate. Private cloud as it permits only the authorized users, gives the organization greater and direct control over their data. Businesses that have dynamic or unforeseen needs, assignments which are mission critical, security alarms, management demands and uptime requirements are better suited to adopt private cloud.

Hybrid Cloud: is a type of cloud computing, which is integrated. It can be an arrangement of two or more cloud servers, i.e. private, public or community cloud that is bound together but remain individual entities. Benefits of the multiple deployment models are available in a hybrid cloud hosting. A hybrid cloud can cross isolation and overcome boundaries by the provider; hence, it cannot be simply categorized into public, private or community cloud. It permits the user to increase the capacity or the capability by aggregation, assimilation or customization with another cloud package / service. In a hybrid cloud, the resources are managed and provided either in-house or by external providers. It is an adaptation among two platforms in which the workload exchanges between the private cloud and the public cloud as per the need and demand. Organisations can use the hybrid cloud model for processing big data. On a private cloud, it can retain sales, business and various data and can initiate analytical queries over the public cloud as the public cloud is effective to meet the demand spikes.

Community Cloud: is a type of cloud hosting in which the setup is mutually shared between many organisations that belong to a particular community, i.e. banks and trading firms. It is a multi-tenant setup that is shared among several organisations that belong to a specific group which has similar computing apprehensions. The main intention of these communities is to achieve their business related objectives. A community cloud is appropriate for organisations and businesses that work on joint ventures, tenders or research that needs a centralized cloud computing ability for managing, building and implementing similar projects



6. ADVANTAGES OF CLOUD

Cloud computing boasts several attractive benefits for businesses and end users. Three of the main benefits of cloud computing are:

- Reduced Investments and Proportional Costs
- Increased Scalability
- Increased Availability and Reliability
- Self-service provisioning: End users can spin up compute resources for almost any type of workload on demand. This eliminates the traditional need for IT administrators to provision and manage compute resources.
- Elasticity: Companies can scale up as computing needs increase and scale down again as demands decrease. This eliminates the need for massive investments in local infrastructure which may or may not remain active.
- Pay per use: Compute resources are measured at a granular level, allowing users to pay only for the resources and workloads they use. Cloud computing enables companies to consume a compute resource

7. CONCLUSION

Cloud computing is now becoming a business standard. It simplifies the user's accessibility. It provides a virtual storage space to the user which could be used without bothering about the details of the entire mechanism. In simple words, it allows storage of frequently used data on multiple servers which could be accessed by using the Internet. Various services like servers, storage and applications are provided to the user's computing devices via Internet

Cloud Computing and its Applications to Libraries

By Manish Garg

Dept of Library and Information Science
Kurukshetra University, Kurukshetra
E-mail: manishgarg2014@yahoo.com

Abstract: Cloud Computing is the latest technology model for the high end IT services. It is a network (typically Internet) based service, through which the information/ data base of the customer is stored on the cloud (hired virtual or physical servers hosted by one or many third party service providers) and this information, data, service or applications are accessible to the customer as and when required by him on his computers, mobiles or workstations. There are three types of service models of Cloud Computing viz. SaaS, PaaS, IaaS. Further, its formation can take place as a Public Cloud, Private Cloud and a Hybrid Cloud. Its numerous advantages overshadow its limitations and therefore, it has made its way very swiftly to the business houses, organizations and libraries. In fact, it offers very lucrative and exciting opportunities to the libraries in the segment of Information Storage and Retrieval, Library Automation, Digital Library and Web Hosting etc. Considering these opportunities, the organizations such as OCLC, Elsevier, Dura Space and Terra Pod have already started providing the Cloud services to the libraries. Hence, Cloud Computing can enable the libraries to provide more services with better efficiently at a considerably reduced cost.

Keywords: Cloud Computing, Types of Cloud Formation, Cloud Service Models, Application of Cloud Computing in Libraries.

1. INTRODUCTION

The Information Technology, since its inception, has revolutionized the entire world numerous times with its divergent notions, and "Cloud" is another such notion that was in hype for last few years and has been just recently incorporated in the main stream in the corporate world and organizations along with libraries. Cloud Computing is the latest technology model for IT services which allows the users to avoid locally hosting multiple servers and equipment and constantly dealing with hardware failure, software installs, upgrades and compatibility issues. For many organizations, cloud computing can simplify processes and save time and money (Goldner, 2010). It is an Internet-based computing solution where shared resources are provided like electricity distributed on the electrical grid. Computers in the cloud are configured to work together and the various applications use the collective computing power as if they are running on a single system (IBM, 2012). All the organizations and business housed keep on

collecting information regarding its services, products, users, vendors, stock, descriptions, notes, operations and transactions and accounts etc. Therefore, the need for IT infrastructure for all the organizations and business houses keep on growing, which calls for huge investment and set up to deal with it. Further the future assessment of IT infrastructure cannot be made precisely. Here, the Cloud Computing comes handy, where, the infrastructure and/ or services can be borrowed at a very nominal cost. Many leading organization and business houses such as Google, Amazon, IBM, Dell, Intel, HP, Oracle and Cisco have invested huge money in the R&D of cloud computing and offer individuals and businesses a vast range of cloud based services.

2. CLOUD COMPUTING

In general, the Cloud Computing is a network (typically Internet) based service, through which the information/ data base of the customer is stored on the cloud (hired virtual or physical servers hosted by one or many third party service providers) and this information, data, service or application is accessible to the customer as and when required by him on his computers, mobiles or workstations. The size of the cloud can be decreased or increased as per requirements of the user very easily. At this juncture, it is pertinent to peruse a few well accepted definitions of the Cloud Computing:

- The Gartner Group defines cloud computing as a style of computing in which massively scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies.
- Whereas, Buyya et.al. describes that the cloud computing is a parallel and distributed computing system consisting of a collection of inter-connected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resources based on Service Level Agreements (SLA) established through negotiation between the service provider and consumers.
- Here is a very comprehensive definition from NIST, which states that cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

3. CHARACTERISTICS

Cloud Computing has become a viable option for the entire IT community because of its remarkable characteristic. A few of those are enlisted below (NIST, 2011) (Gosavi & Shinde, 2012)

- **On-demand self-service:** A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service provider.
- **Broad network access:** Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, tablets, laptops, and workstations).
- **Resource pooling:** The provider's computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. There is a sense of location independence in that the customer generally has no control or knowledge over the exact location of the provided.
- **Rapid elasticity:** Capabilities can be elastically provisioned and released, in some cases automatically, to scale rapidly outward and inward commensurate with demand. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be appropriated in any quantity at any time.
- **Self Healing:** Any application or any service running in a cloud computing environment has the property of self healing. In case of failure of the application, there is always a hot backup of the application ready to take over without disruption. There are multiple copies of the same application - each copy updating itself regularly.
- **Linearly Scalable:** Cloud computing services are linearly scalable. The system is able to break down the workloads into pieces and service it across the infrastructure.

- **Service-oriented:** Cloud computing systems are all service oriented - i.e. the systems are such that they are created out of other discrete services. Many such discrete services which are independent of each other are combined together to form this service. This allows re-use of the different services that are available and that are being created.
- **SLA Driven:** Usually businesses have agreements on the amount of services. Scalability and availability issues cause clients to break these agreements. But cloud computing services are SLA driven such that when the system experiences peaks of load, it will automatically adjust itself so as to comply with the service-level agreements.
- **Virtualized:** The applications in cloud computing are fully decoupled from the underlying hardware. The cloud computing environment is a fully virtualized environment.
- **Flexible:** Another feature of the cloud computing services is that they are flexible. They can be used to serve a large variety of workload types - varying from small loads of a small consumer application to very heavy loads of a commercial application.

4. CLOUDS ARE IN USE ALREADY

It is amazing to state that all of us, who use internet for even very basic functions such as searching anything on Google, using any of Google Apps, owning/ operating any e-mail account, selling/ purchasing online from any website such as Amazon, using social media websites such as facebook, or simply using internet banking etc., are already using Cloud Computing, the only fact is that, generally we do not realize the same.

5. ADVANTAGES OF CLOUD COMPUTING

Cloud Computing has become the buzz word for the organizations and business houses due to its numerous advantages. A few of those are enlisted as under:

- **Economical:** Hiring some space on Cloud is very economical as compared to installing a full scale IT set up. Further, it becomes more feasible when the requirement for additional IT set up is for a short period of time.

- **Common Infrastructure:** The Cloud caters to many customers and provides services to all concurrently. Hence, the resources are shared by all the users. Actually, this sharing of sourcing is the major cause of the cost reduction.
- **Flexible to scale:** The space and services can be easily increased or decreased as per the requirements of the organization.
- **24x7 Availability:** The user can use the cloud anytime round the clock at his own ease and requirements.
- **No geographical boundaries:** The Clouds are always available over the computer of the user irrespective of its geographical location. The user can access to its content anywhere through the network breaking all the geographical barriers.
- **Infrastructure:** There is literally no or just minimal infrastructure is required to connect to the cloud and make use of it.
- **Processing:** Cloud Computing offers astonishing processing power to the user. It can be even analogous to a Super Computer.
- **Space:** It offers unlimited space, services, applications and bandwidth.
- **Maintenance:** The user need not to be concerned about the regular maintenance and updating the servers on regular basis and the third party offering the Cloud Computing services will take care of the same at their own.
- **Data Backup:** The chances of data loss are eradicated through Cloud Computing as backups are taken regularly and second copies are stored at a separate server located at a different location.

Definitely, it is all the user centric features and can be used as a personal work space. Hence, Cloud Computing brings all the benefits of expensively self installed IT setup at a very nominal cost.

6. DISADVANTAGES

There is always a flip side of a coin and the Cloud Computing is not a exception to it. There are many advantages to Cloud Computing coupled with a few disadvantages listed as under:

- **Security:** In the modern times, the user information and details of transactions is a major data of any business house or organization. Further, if this information is pertaining to financial details of the customers such as bank a/c, loan details, online transfers or Cards etc., the concern of security of same becomes a foremost concern. If such data is uploaded to cloud, a small loophole can cause mammoth damage to many.
- **Data Backup:** Though the backups are obtained regularly, however, the organization just blindly depends to the goodwill and efficiency of the third party service provider. A small mistake on his end can result in loss of precious information to the organization.
- **Audits:** The cloud works through a network (generally internet). Hence, it becomes impossible to identify the geographical and physical location of the server where the data is been stored. Therefore, the audits of the same become practically impossible and the third party service provider becomes unassailable.
- **Proper Knowledge:** The organization must have proper high end technical knowledge to make best use of Cloud Computing and also legal knowledge to safeguard the organizational concerns over proper regular service and security related matters.

7. WORKING OF CLOUD COMPUTING

Cloud computing system can be divided it into two sections: the front end and the back end. They connect to each other through a network, usually the Internet. The front end is the side the computer user, or client, sees. The back end is the "cloud" section of the system. On the back end there are various computers, servers and data storage systems that create the "cloud" of computing services. A central server administers the system, monitoring traffic and client demands to ensure everything runs smoothly. It follows a set of rules called protocols Servers and remote computers do most of the work and store the data (Gosavi & Shinde, 2012).

8. SERVICE MODELS

There are three types of service models of Cloud Computing, elaborated as under

(NIST, 2011):

- **Software as a Service (SaaS):** The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through either a thin client interface, such as a web browser (e.g., web-based email), or a program interface. The consumer does not manage or control the underlying cloud infrastructure including network, servers, **operating** systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings.
- **Platform as a Service (PaaS):** The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages, libraries, services, and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly configuration settings for the application-hosting environment.
- **Infrastructure as a Service (IaaS):** The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, and deployed applications; and possibly limited control of select networking components (e.g., host firewalls).

CLOUD FORMATIONS

There are following three types of cloud formations:

- **Public clouds:** Public clouds are available to the general public or a large industry group and are owned and provisioned by an organization selling cloud services. A public cloud is what is thought of as the cloud in the usual

sense; that is, resources dynamically provisioned over the Internet using web applications from an off-site third-party provider that supplies shared resources and bills on a utility computing basis.

- **Private clouds:** Private clouds exist within your company's firewall and are managed by your organization. They are cloud services you create and control within your enterprise. Private clouds offer many of the same benefits as the public clouds — the major distinction being that your organization is in charge of setting up and maintaining the cloud.
- **Hybrid clouds:** Hybrid clouds are a combination of the public and the private cloud using services that are in both the public and private space. Management responsibilities are divided between the public cloud provider and the business itself. Using a hybrid cloud, organizations can determine the objectives and requirements of the services to be created and obtain them based on the most suitable alternative.

10. SOME EXAMPLES OF CLOUD COMPUTING

There are many organizations investing huge amounts in the R&D of Cloud Computing and offering high end services to tap the market. Some of those are highlighted as under:

- **Amazon Web Services (AWS):** Amazon is a prominent business organization of cloud computing. It offers a wide range of prominent services, for example, simple storage service, Cloud Drive, Cloud Search, RedShift, DDB (Dynamo Data Base), ElastiCache, Elastic Compute Cloud, Mechanical Turk etc.
- **Google Apps:** Google Apps is available free for individuals and organizations (up to a certain limit), educational institutions. It has a vast range of products, such as Gmail, which is one of the most used email service all over the globe. Further, it provides Google video, Google Docs and Google Sites and Google App Engine etc. (Google, 2014).
- **Microsoft Azure:** Microsoft Corporation has created its own cloud platform i.e Windows Azure which was later renamed as Microsoft Azure. Microsoft

provides this service through its datacenters. In this platform, organizations can develop and run applications itself with unbounded scalability. User has to pay only for the services he chooses. Windows Azure allows developers to develop and run applications quickly, while leveraging current skills to develop applications with .NET, PHP, or Java (Microsoft, 2014).

- **Rackspace Cloud:** This cloud platform offers three types of services for organizations and businesses viz. cloud servers, cloud files and load balancers. It offers free architecture assistance to its users with every account. Cloud servers are available to organizations in different sizes. It uses Akamai's content delivery network (CDN) to globally deliver the stored media and files. Its third service Cloud balancer helps organizations to enhance their server capacities and to balance the load factor and this service is extended only on-demand (Rackspace, 2012).

11. USE OF CLOUD SERVICES IN THE LIBRARIES

Library is the collection of different resources. The way new additions are made in the library, it is very difficult to manage everything with traditional management system. New technologies are available to manage & distribute the resources. Cloud computing uses the concept of centralizing the data on the internet further making it available to user, anytime anywhere. Virtualized shared resources allow multiple users to access the resources simultaneously. It reduces the dependency of installation, maintenance, failure of ICT infrastructure etc. Web repositories like E-journals & digital libraries etc are created so that users can access the global resources, helping the researchers/ educational professionals (Tyagi et.al, 2015). A brief list of potential areas where Libraries can churn out benefit from the Cloud Computing could include:

- **Information Storage and Retrieval:** Libraries are essentially information hubs those keep on hoarding up information and therefore, these are always in need to extra space. Further, it is vital to retrieve the stored information very quickly. Here, the libraries can hire the required storage space on the clouds and retrieve the same as and when required. It may make us revisit the Fifth Law of Library Science.

- **Web Hosting:** Many business houses and organizations, nowadays, prefer to host their website on a third party server in spite their own servers. The libraries can also do the same to get the benefits of cloud.
- **Building Digital Library:** An efficient way to manage resources, information and library related services is to maintain a digital library. The user may be facilitated access via network. Many open source software are providing a platform to digital libraries by hosting them locally. Duraspace uses digital library services using SaaS approach eliminates the need of maintaining a separate server, taking backups and software updates for the same (Tyagi et.al, 2015).
- **Library Automation:** This helps in saving the cost of maintenance and investment on hardware and software resources. Libraries don't have to worry about software updates backup etc. This all may be taken care by a centralised cloud service like SaaS (Tyagi et.al, 2015).
- **Optimum Use of Resources:** Libraries, along with other challenges, face the challenge of providing maximum services at minimum cost. Here, the libraries can adopt Cloud Computing which more cost effective than installing its own full set of IT infrastructure and hiring a team of IT personnel.

Here are some live examples where Libraries are adopting Cloud Computing (Singh & Sahu, 2016):

- **OCLC:** OCLC Online Computer Library Center is a nonprofit, membership, computer library service and research organization dedicated to public purpose of gaining knowledge. In a sense OCLC has been functioning as a Cloud Computing vendor, they provide cataloguing tools over the internet and allow member(s) to access the data from their centralized data store.
- **Library Thing:** Library Thing is also one of the sites that combine aspects of social networking and Cloud Computing. Library Thing offers services which are just like social networking site which authorizes people to contribute information and suggestion about books and allow them to interconnect globally to share interests.

- **Reed Elsevier:** Reed Elsevier is a service provider for scientific information working with hospitals to provide point in time information to medical technicians as they needed.
- **Amazon and Google:** These are among the leading enterprises also providing solutions for libraries by having partnerships between library automation vendors. For many years they are working for the dissemination of information and also taking interest in library solutions using "AAP Search Engines".
- **Dura Space:** Dura Space provides a hosted service and open technology to help organizations and end users effectively utilize public cloud services. These services can work on Amazon, Atoms etc and other Cloud services.
- **Terra Pod:** Terra Pod is a Digital Video Library. It allows the user to outsource upload and data creation to the creators of the contents.
- **Ex-Libris Cloud:** Ex-Libris is a leading library software vendor from USA. It provides cloud based solutions to automate the library operations. It developed most products for locally implemented solutions and adapted them to a hosted environment later. Its website claims that over 5300 in more than 80 countries are deploying Ex-Libris solutions for automation of their library resources. It allows libraries to enhance their efficiency and lower the cost of operations and extend their value through launching new services. (Kozokin, 2011).
- **OSS Labs** OSS labs from India is using Amazon"s elastic cloud computing platform owing to the various capabilities of Amazon such as high durability of data, ISO standards based strong information security and flexibility. It is expected that the OSS labs will be able to provide robust open based solutions to demanding customers (OSS Labs, 2014).

12. CONCLUSION

Every organization should endeavor to raise its standards of quality of its services in order to survive in this competitive environment. It becomes even more critical when it comes to the libraries. Here, the Cloud Computing infinite exciting

opportunities to the libraries where it can manage itself in a more organized manner, offer better experience to its clientele, offer more innovative services, all at a comparatively decrease expenditure. As library professionals many a times find it difficult to manage the technologies owing to their skill levels, lack of support from IT departments or for not having IT facilities within the organizations. This kind of situation always hinders library professionals in undertaking automation of library activities, developing digital library services, etc. Here, cloud computing may help libraries to undertake modern ICT activities without worrying about technical side of it, except adding content of resources (Bansode & Pujar, 2012). Hence, Cloud Computing can prove to a boon of IT for libraries, if handled properly.

References

1. Bansode, S.Y. & Pujar S.M. (2012). Cloud Computing and Libraries. *DESIDOC Journal of Library & Information Technology*, 32(6) 506-512.
2. Buyya, R., Yeo, C.S., Venugopal, S., Broberg, J. & Brandic, I. (2009). Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility. *Future Generation Computer Systems*, 25, 599-616.
3. Dutt, Mahipal. (2015). Cloud Computing And Its Application In Libraries. *International Journal of Librarianship and Administration*, 6(1), 19-31.
4. Gartner Group. (n.d.). Retrieved from http://www.gartner.com/it/page.jsp?id=1035013
5. Goldner. Matthew R. (2010). Winds of Change: Libraries and Cloud Computing. *BFP*, 34, 270-275. DOI10. 1515/bfup.2010.042
6. Google App Engine. (2014). *Google.com.* Retrieved from https://developers.google.com/appengine/?csw=1
7. Gosavi, Nandkishor & Shinde, Seetal S. (2012). Use of Cloud Computing in Library and Information Information Science Field. *International Journal of Digital Library Services,* 2(3).
8. IBM Developer Works. (2012). Cloud computing fundamentals: A different way to deliver computer resources Retrieved from https://www.ibm.com/developerworks/cloud/library/cl-cloudintro/cl-cloudintro-pdf.pdf

9. Kozokin, Sarit. (2011). *Ex-Libris cloud: Open for business.*
10. Mell, P. & Grance, T. (2009). Effectively and securely using the cloud computing paradigm, http://csrc.nist.gov/organizations/fissea/2009-conference/ presentations/fissea09-pmell-day3_cloud-computing.pdf
11. Microsft.com. Cloud Platform. (2014). Retrieved from http://www.microsoft.com/enterprise/it-trends/cloud-computing/default.aspx#fbid=gB0X9apRw93
12. NIST. (2011). The NIST Definition of Cloud Computing. *NIST Special Publication, US Dept of Commerce.* Retrieved from https://www.nist.gov/news-events/news/ 2011/10/final-version-nist-cloud-computing-definition-published
13. OSS Labs. (2014). OSS Labs to host its solutions on Amazon's cloud computing platform. Retrieved from http://www.osslabs.biz/news/oss-labs-host-its-solutionsamazons-cloud-computing-platform
14. Rackspace.com. (2012). The Rackspace Cloud. Retrieved from http://www.rackspace.com/cloud/
15. Singh, Avinash & Sahu, Archana. (2016). Libraries and Cloud Computing. Proceedings of the 2nd International Seminar On *Utilization of Non-Conventional Energy Sources for Sustainable Development of Rural Areas.*
16. Tyagi, Neeraj at al. (2015). Cloud Computing and its Application in Library System. *International Journal of Research in Engineering and Technology*, 04(07), 45-47.

Cloud Computing in Library Services: A Perspective

Bhavana Sharma

(B. Lib&IS, Dept. of Library and Information Science, CSJM University, Kanpur -208017, Email: bhavanajha.knp@gmail.com, 9616525223)

Priyanka C. Bhatt

Research Scholar, Dept. of Library and Information Science, University of Delhi – 110007, Email: bhattpriyanka88@gmail.com, 9990110607)

Abstract: Information technology has had a high impact on library and information system and services they provide for users. The libraries have been automated, networked and now moving towards paper less or virtual libraries. To cater to the challenges in the profession, librarians are applying different technological platforms for attaining economy in information handling. Cloud computing technology has come up as a boon for libraries and is offering various opportunities for libraries to connect their services with clouds. The paper presents an overview of cloud computing and its possible applications that can be clubbed with library services on the web based environment. This study may be helpful in identifying and generating cloud based services for libraries.

Keywords: *Cloud Computing, IaaS, PaaS, SaaS, Library Automation, Library services.*

1. Introduction

Cloud computing can transform the way systems are built and services delivered, providing libraries with an opportunity to extend their impacts (Matt, 2010). Cloud computing offers a new dimension in computing, it changes how we invent, develop, scale, update, maintain and pay for applications and the infrastructure on which they are run. In cloud computing data and services reside in massively scalable data centers in the cloud and can be accessed from a web browser. Cloud computing is a way of providing various services on virtual machines allocated on top of a large physical pool which reside in the cloud, in other words cloud computers is capable of collecting large quantity of information and resources stored in personal computers, mobile phones and other equipment and integrate them and put them on the cloud for serving users. (Obgu and Lawal, 2013).

Information technology plays very vital role in library science i.e. for collection, storage, organization, processing, and analysis of information. Library field is facing many challenges in the profession due to applications of information

technology. Libraries are also accepting many new technologies in the profession which suit the present information handling and help satisfying needs of the knowledge society. With the advent of Information technology, libraries have become automated which is the basic need towards advancement followed by networks and more effort are put towards virtual libraries. The emergence of e-publications, digital libraries, internet usage, web tools applications for libraries, consortium practices leads to the further developments in library profession. The latest technology trend in library science is use of cloud computing for various purposes and for achieving economy in library functions. Nowadays, cloud computing is the key term is being used in the world of Information Technology and it is the new kind of computing where the virtual resources are shared among the users. (Ercan, 2010). Through the cloud computing, it is possible to share the network, servers, software, applications, storage, and services. The user need not buy all the software, hardware, applications, networks and so on and need not depend on the traditional library. Instead, they can log in to the system and get only required services, for which only they have to pay. In this method, the users will pay for what they have used i.e. pay-per-use model.

Cloud computing helps the academic libraries to save the money, time and resources without having the software, OS, hardware in the library premises, which are must to access the information at present. The future libraries may be in the cloud so that libraries can focus directly for materials and services if the libraries hardware and software are directly controlled by the could computing. In this study, the authors have made an attempt to study about the cloud computing, its origin, types, its application in libraries and features.

2. What is Cloud Computing?

Cloud computing is a style of computing in which massively scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies (Matt, 2010). The "Cloud" element of Cloud Computing can be seen as an acronym that stands for *C- Computing resources, L- Location independent, O- Online means, U- Utility & D- available on Demand.*

Usually, "cloud services are based on the Internet which are accessed, transported & used over the Internet in user`s web browsers" (Wang & Huang, 2011). According to (Mavodza, 2013) "libraries have stepped and are increasingly stepping into the realm of digital librarianship as well as platforms that extend IT's existing capabilities, and this extensively depends on using the cloud".

India is the world`s largest leader in computer and information services export (WTO). "Demand for cloud computing services in India is growing along with supply and Indian firms in numerous industries are adopting cloud services" (Berry & Reisman, 2012). According to Hoy (2012) "most cloud computing applications and infrastructure are built with the assumption that users will access them from the Internet, on multiple platforms and from anywhere in the world".

Cloud computing is a way of providing various services on virtual machines allocated on top of a large physical machine pool which resides in the cloud (Nandkishore et. al., 2012).

Resource pooling: to allow dynamically assigned computing resources to serve multiple consumers through the use of virtualization technologies.

Rapid elasticity and scaling: to allow Cloud services, resources and infrastructures to be automatically provisioned as business requirements change.

Measured provision: to provide a metering capability to determine the on-demand usage for billing purposes. Effective management: to provide and facilitate easy monitoring, controlling and reporting.

Cloud computing offers information retrieval systems, particularly in digital libraries and search engines, a wide variety of options for growth and reduction of maintenance needs and encourages efficient resource use. These features are particularly attractive for digital libraries, repositories, and search engines (Gopalaswamy and Kumar).

3. Literature Review

Various studies have been conducted on cloud computing and libraries related issues such as Khan et. al. (2011) provided the concept of cloud computing and also highlighted that how libraries can be benefited using cloud computing technology by providing some live examples. Yuvraj and Singh (2013) made a survey to find, how librarians in Indian Central Universities are using Cloud Computing tools into their daily library services and works. Result show that librarians are heavily dependent on cloud computing tools and majority of them are using various devices and want to imply the same to improve library services. Again, economics, delivery models and service layers and the user`s preference of cloud computing are the core drivers for using those applications in library, but majority of the librarians showed their concern over the security. Abid et.al (2012) made a survey in 4 different universities of Faisalabad, Pakistan to find, the perception and what sort of issue, the IT administrators can face while using

cloud computing. Findings show that most of the participants are familiar with cloud computing but unfortunately some of them are not much clear due to lack of resources. 91% participants replied that using of cloud computing is a highly security risk. Srivastav and Kuma (2011) presented the vision of cloud computing with various commercially cloud services available on the Infrastructure as-a-Service (IaaS) and found that cloud computing is changing the way towards hardware and software for on demand capacity fulfillment and development of web applications to make business decisions. Murley (2009) provided an overview of cloud computing and list of resources and services may attach with cloud computing technology particularly in law libraries and also stated that cloud computing is not new for law libraries. Sasikala (2011) argued the concept of cloud computing from the perspectives of diverse technologists, services and models available, cloud standards, cloud in government, enterprises and higher education, along with opportunities, challenges and implications on the basis past, present and future situation. Wang et. al. (2011) examined the trends of cloud computing on the basis of extant information systems literature, industry reports and practical experience reflections and also pointed out the significance of cloud computing and its implications for practitioner and academics.

4. Characteristics of Cloud Computing

Nandkishore et. al. (2012) gives characteristics of cloud computing as follows :

1. Self Healing

Any application or any service running in a cloud computing environment has the property of self healing. In case of failure of the application, there is always a hot backup of the application ready to take over without disruption. There are multiple copies of the same application - each copy updating itself regularly so that at times of failure there is at least one copy of the application which can take over without even the slightest change in its running state.

2. Multi – tenacy

With cloud computing, any application supports multi-tenancy - that is multiple tenants at the same instant of time. The system allows several customers to share the infrastructure allotted to them without any of them being aware of the sharing. This is done by virtualizing the servers on the available machine pool and then allotting the servers to multiple users. This is done in such a way that the privacy of the users or the security of their data is not compromised.

3. Linearly Scalable

Cloud computing services are linearly scalable. The system is able to break down the workloads into pieces and service it across the infrastructure. An exact idea of linear scalability can be obtained from the fact that if one server is able to process say 1000 transactions per second, then two servers can process 2000 transactions per second.

4. Service-oriented

Cloud computing systems are all service oriented - i.e. the systems are such that they are created out of other discrete services. Many such discrete services which are independent of each other are combined together to form this service. This allows re-use of the different services that are available and that are being created. Using the services that were just created, other such services can be created.

5. SLA Driven

Usually businesses have agreements on the amount of services. Scalability and availability issues cause clients to break these agreements. But cloud computing services are SLA driven such that when the system experiences peaks of load, it will automatically adjust itself so as to comply with the service-level agreements. The services will create additional instances of the applications on more servers so that the load can be easily managed.

6. Virtualized

The applications in cloud computing are fully decoupled from the underlying hardware. The cloud computing environment is a fully virtualized environment.

7. Flexible

Another feature of the cloud computing services is that they are flexible. They can be used to serve a large variety of workload types - varying from small loads of a small consumer application to very heavy loads of a commercial application.

5. Models of Cloud Computing

Service Models

Though, there are various service models originated on the web but three service models widely used for delivering the different cloud based services that described below:

Infrastructure as a Service (IaaS): This service model comprises a wide range of features, services and resources which support to build an virtual infrastructure

for computing. Organizations can be developed entire infrastructure on demand. e.g. Amazon Web Services, Rackspace, Savvis, HP, IBM, Sun and Google Base.

Platform as a Service (PaaS): Platform as a Service model helps in generating the computing platforms to run the software and other tools over the internet without managing the software and hardware at the end of user side. Amazon Elastic Cloud, EMC Atmos, Aptana and GoGrid are the examples of PaaS model which providing platforms to users in maintaining and supporting their IT infrastructure without spending huge amount for buying hardware, software and related technology.

Software as a Service (SaaS): Software package like CRM or CAD/CAM is accessed beneath cloud computing theme. Upon registration the user is allowed to use code accessible through web and use it for his or her analysis method. The connected knowledge and work is also keep on native machines or with the service suppliers. we will use SaaS services on rental basis or on examine basis.

Deployment Models

Deploying cloud computing can differ depending on requirements, and the following four deployment models have been identified (Obgu and Lawal, 2013):

Private cloud: The cloud infrastructure has been deployed, and is maintained and operated for a specific organization. The Operation may be in-house or with a third party on the premises.

Community Cloud: The cloud infrastructure is shared among a number of organizations with similar interests and requirements. This may help limit the capital expenditure costs for its establishment as the costs are shared among the organizations. The operation may be in-house or with a third party on the premises.

Public Cloud: The cloud infrastructure is available to the public on a commercial basis by a cloud service provider.

This enables a consumer to develop and deploy a service in the cloud with very little financial outlay compared to the capital expenditure requirements normally associated with other deployment options.

Hybrid Cloud: The cloud infrastructure consists of a number of clouds of any type, but the clouds have the ability through their interfaces to allow data and/or applications to be moved from one cloud to another. This can be a combination of private and public clouds that support the requirement to retain some data in an organization, and also the need to offer services in the cloud.

6. Cloud Computing in Library Automation

For library automation purpose, Polaris provides variant cloud based services such as acquisitions, cataloguing, process system, digital contents and provision for inclusion of cutting edge technologies used in libraries and also supports various standards such as MARC21, XML, Z39.50, Unicode and so on which is directly related to library and information science area.

Apart from this, nowadays many of the software vendors such as Ex-Libris, OSS Labs are also offering this service on the cloud and third party services offering hosting of this service (SaaS approach) on the cloud to save libraries from investing in hardware for this purpose. Besides cost-benefit, the libraries will be free from taking maintenance viz. software updates, backup and so on.

Examples of Cloud Libraries

- OCLC
- Library of Congress (LC)
- Exlibris
- Polaris
- Scribd
- Discovery Service
- Google Docs / Google Scholar
- Worldcat
- Encore

7. Conclusion

There is an overpowering agreement between IT professionals that cloud computing which offers a new approach to produce solutions for old problems. These new technologies hold the concept of cutting cost and adopting better IT capabilities in enterprise, industries, universities as well as other tertiary institutions in the country. Cloud computing is the third generation platform. Library automation is a concept of data collection, data storage and data retrieval and we can use cloud computing effectively in library automation as it is cost effective, flexible, innovative, open access to access data anywhere, anytime as per users need.

This study provides cloud computing concepts and implications of cloud based

applications in libraries in order to enhance their services in a more efficient manner. No doubt, libraries are moving towards cloud computing technology in present time and taking advantages of cloud based services especially in building digital libraries, social networking and information communication with manifold flexibilities but some issues related to security, privacy, trustworthiness and legal issues were still not fully resolved. Therefore, it is time for libraries think seriously before clubbing libraries services with cloud based technologies and provide reliable and rapid services to their users. Another role of LIS professionals in this virtual era is to make cloud based services as a reliable medium to disseminate library services to their target users with ease of use and trustworthiness.

References

1. Abid M.H. et.al (2012). Cloud Computing: A General User's Perceptions and Security Issues at Universities of Faisalabad, Pakistan. *IJCSI International Journal of Computer Science,*Issues, 9(5.2)
2. Berry and Reisman (2012). Policy changes of cross-border cloud computing. *Journal of International commerce & economics,* 1-38. http://www.usitc.gov/journals/policy_challenges_of_cross-border_cloud_computing.pdf
3. Ercan, T. (2010). Effective use of clod computing in educational institutions, *Procedia Social and Behavioral Sciences,* 2, 938-942.
4. Gopalaswamy, M. and Kumar, S.N. Cloud computing technology: A boon for library and information services. *Indian Journal of Library and Information Science.* [Online]. http://www.rfppl.com/subscription/upload_pdf/Art.1_844.pdf
5. Hoy, Matthew B. (2012). Cloud Computing Basics for Librarians. *Medical Reference Services Quarterly,* 31(1), 84-91.
6. Khan, S., Khan, S. & Galibeen, S. (2011). Cloud computing an emerging technology: Changing ways of libraries collaboration. *International Research: Journal of Library and Information Science,* 1(2).
7. Matt, G. (2010). Winds of change: Libraries and cloud computing. *OCLC Online Computer Library Center.* [Online]. 5. http://www.oclc.org/content/

dam/oclc/events/2011/files/IFLA-windsof-change-paper.pdf

8. Mavodza, J. (2013). The impact of cloud computing on the future of academic library practices & services. *New Library World*, 114 (3/4), 132-141.
9. Murley, D. (2009). Law libraries in the cloud. *Law Library Journal*, 101(2), 249-254.
10. Nandkishor, G., Seetal, S. S. and Bhagyashree, D. (2012). Use of cloud computing in library and information science field. *International Journal of Digital Library Services*. [Online]. 2(3). 52-57. Http://Www.Ijodls.In/Uploads/3/6/0/3/3603729/Vol._2_July_-_Sept._2012_Part-2.Pdf
11. Obgu, R.C. and Lawal A. (2013) Cloud Computing and Its Applications i–Library Services: Nigeria in Focus. *International Journal of Innovation, Management and Technology*, 4(5), 476-479.
12. Srivastav, K. & Kuma, A. (2011). A new approach of cloud: Computing infrastructure on demand. *TRIM*, 7(2), 145-153.
13. Sasikala, P. (2011).Cloud computing: Present status and future implications. *International Journal Cloud Computing*, 1(1), 23-36.
14. Wang, W.Y.C., Rasid, A. & Chung, H.M. (2011). Toward the trend of cloud computing. *Journal of Electronic Commerce Research*, 12(4), 238-241.
15. Wang, X.L. and Huang, J. (2011) What cloud computing means to libraries & information services. *Journal of Library & Information Science*, 37(2), 166-174.
16. Yuvaraj, M. and Singh, A.P. (2013). Cloud computing research around the globe in different universities: An overview. *International Journal of Information Dissemination and Technology*, 3(4), 230-235.

CYBERCRIME

Km. Deeksha

Department of Library & Information Science
Krishna Devi Balika Degree College
Khandiya, Maudarwaja, Farrukhabad
Email Id- dstv500@gmail.com

Abstract: The internet is growing rapidly in India. It has given rise to new opportunity in every field like entertainment, business, sports, education etc. It is true that every coin has two sides. It has both advantage and disadvantage. Cybercrime is its disadvantage. Cybercrime is an illegal activity which is committed by using a computer network (especially the internet). Also, cybercrime involves the breakdown of privacy or damage to the computer system properties such as files, websites pages or software. In India most of cybercrime cases are committed by educated person. So it is required to have deep knowledge about the cybercrime and its prevention. Also, in India most of the cases found where crimes are committed due to lack of knowledge or by mistakes. Any criminal activity that uses a computer either as an instrumentally target or a means for perpetuating further crimes comes within the ambit of cybercrime.

Keywords- Cybercrime, Prevention, Cyber cases, Hacking, Cyber Cells in India.

1. Introduction

Cybercrime is the latest and perhaps the most complicated problem in the cyber world. Cybercrime may be said to be those species of which genus in the conventional crime and where either the computer is an object or subject of the conduct constituting crime. Cybercrime encompasses any criminal act dealing with computers and networks (called hacking). Additionally, cybercrime also includes traditional crimes conducted through the internet. For example; hate crimes, telemarketing and internet fraud, identity theft and credit card account thefts are considered to be cybercrimes when the illegal activities are committed through the use of a computer and internet.

We can define cybercrime as "unlawful acts where the computer is either a tool or target or both". The computer may be used as a tool in many kinds of activities including financial crimes, sale of illegal articles, pornography, online gambling, intellectual property crime, email spoofing, forgery, cyber stalking etc.

The computer may however be a target for unlawful acts in some cases such as unauthorized access to computer/ computer system/ computer network/ theft

of information contained in the electronic form, email bombing, data diddling, salami attacks, logic bombs, Trojan attacks, internet time theft, web jacking, theft of computer system, physically damaging the computer system etc.

2. Verities of cybercrime

i- Theft of information services.

ii- Communication in furtherance of criminal conspiracies

iii- Telecommunication piracy

iv- Electronic money laundering

v- Electronic vandalism and terrorism

vi- Sales and investment fraud

vii- Illegal interception of telecommunications

viii- Electronic funds transfer fraud

3. Method of perpetrations-

1. **Unauthorized Access-** Unauthorized access also known as cracking as opposed to hacking, means giving access to a system without permission of the user or without proper authority. This is generally done either by fake identity or by cracking access codes.
2. **Email Bombing-** This means sending a large number of mails to the victim, resulting the victims mail account (in case of individual) or server (in case of corporation) crash.
3. **Data Diddling-** This kind of attack involves altering the raw data before it is processed by a system and re-altering it after processing.
4. **Salami Attack-** This is generally used to commit financial crime. Here the key is to make the alteration so small that in a single case it would go unnoticed. For example; a bank employee deducts five rupees from every customers account. The individual customers are unlikely to notice this small change but the employee will make a significant earning.
5. **Internet Time Theft-** This connects the usage by an unauthorized person

of internet time paid for by someone else.

6. **Virus/Worm Attack-** A virus is a program which attaches itself to another file or a system and then circulates to other files and to other computers via a network. They usually affect computers by either altering or deleting data from it. Worms on the other hand do not interfere with data. They simply multiply until they fill all available space on the computer.
7. **Trojan Attack-** A Trojan is a program which appears to be something useful but under the disguise of a useful program causes some damage.
8. **Intellectual Property Crime-** This is a crime which involves the unauthorized copying and distributing of copyrighted software. Software piracy is an example.
9. **Cyber Stalking-** This involves following a person on the internet and causing harassment.
10. Prevention Methods-

1. **Firewalls-** These are programs which protect a user from unauthorized access attacks while on a network. They provide access to only known users or people who the user permits.
2. **Frequently Password Changing-** With the advantage of multi used system, security has become dependent on passwords. Thus one should always keep password to sensitive data secure. Changing them frequently and keeping them sufficiently complex in the place can do this.
3. **Safe Surfing-** This is a practice which should be followed by all users on a network. Safe surfing involves keeping once e-mail address private, not chatting on open systems which do not have adequate protection methods, visiting secure sites. Accepting data from only known users, downloading carefully and then from known sites also minimizes risk.
4. **Frequent Virus Checks-** One should frequently check ones computer for viruses and worms. Also any external media such as floppy disks and CD ROM should always be virus checked before running.

5. **Email Filters-** These are programs which monitor the inflow of mails to the inbox and delete automatically any suspicions or useless mails thus reducing the chance of being bombed or spoofed.

4. Reasons for Cyber Crime-

- The reasons for the vulnerability of computers are as follows-

1. **Capacity to store data in comparatively small space-** The computer has unique characteristics of storing data in a very small space. This affords to remove or drive information either through physical or virtual medium makes it much easier.
2. **Easy to Access-** The problem encountered guarding a computer system from unauthorized access is that there is every possibility of breach not due to human error but due to the complex technology.
3. **Complex-** The computer work on operating system and these operating system in turn are composed of millions of codes. Human mind is fallible and it is not possible that they might not be elapse at any stage. The cyber criminals may take advantage of these lacunas and perpetrate into the computer system.
4. **Negligence-** Negligence is very closely connected with human conduct. It is therefore, very protection the computer system there might be any negligence which is turn provides a cybercriminal to gain access and control over the computer system.
5. **Loss of Evidence-** Loss of evidence is a very common and obvious problem as all the data are routinely destroyed. Further collection of data outside the territorial extent also paralyses this system of crime investigation.

5. Conclusion-

It is cleared from the previous studies and records that with the increment in technology cybercrime increases. Qualified people commit crime more. So, there is need to know about principles and computer ethics for their use in proper manner. Cybercrime and hacking is not going away, if anything it is getting stronger. By

studying past incidents, we can learn and use that information to prevent future crime. Cyber law will need to change and involves as quickly as hackers do if it has any hope of controlling cybercrime. Yet India has taken a lot of steps to stop cybercrime but the cyber law cannot afford to be static, it has to change with the changing time.

References-

1. Crime in India- 2011-Compendium (2012), National Crime Records Bureau, Ministry of Home Affairs, Government of India, New Delhi India.
2. Cyber Crime (2003) by R.K. Suri and T.N. Chhabra, Pentagon Press, New Delhi, India.
3. http://en.wikipedia.org/wiki/computer-crime
4. http://ncrb.nic.in/
5. www.economictimes.indiatimes.com/
6. http://in.norton.com/
7. www.ncpc.org
8. http://cybercrimelawyer.wordpress.com/category/66c-punishment-for-identity-theft/

Design, Development and Implementation of an IDR in an Academic Library: A case study

By

Neha Jain

Library Assistant
AISECT University, Bhopal
nehajainrehli@gmail.com

Ruchi Jain

Junior Research Fellow
BBAU, Lucknow
ruchijainjrf@gmail.com

Abstract: This paper focuses on enhancing the accessibility of institutional research outputs in the easiest way. By increasing use of latest toolsand technology, academic libraries are using many open source repositories software like DSpace, Greenstone, EPrints etc. to manage institutional research materials. The paper discusses Digital Repository, Institutional Digital Repository (IDR), Objectives of this study, Characteristics of IDR, Criteria for selecting software for IDR, IDR @ IISER Bhopal, Institutional Repository Policy, Software for Institutional Digital Repository, Steps for submitting content in IDR, Key Issues of Developing Institutional Digital Repositories, Elements for Evaluation of IDR.

Keywords: Institutional Repository, DSpace, EPrints, Academic Library

1. Introduction:

In the age of information society, going onward knowledge society, and open science world, there is necessity to providing access of scientific research, academic research, and scholarly content to the academic user by the any academic institutional library. Now academic libraries are away from the concept of "Libraries are store house of books" or "It is for prominent people of the society". But, now this concept are totally change and libraries are move to new concept that is "The door of libraries are always open to all kind of people in the society". Now libraries or librarians areacceptingtheir changing role in service context. In present era, academic libraries are known as a Learning Centre, Knowledge Centre, Knowledge Resource Centre, Information Centre or Information Service

Centre. In this context, academic libraries are more focus towards accessibility of information resources in the easiest way. Now many academic libraries maintain their own institutional digital repository. For building-up an institutional repository, there is need to make guidelines for IT infrastructure, what kind of content should be uploaded, selection of appropriate repository software. There are many open sources repository software available these are Archimede, Artudis, DAITSS, Dienst, DSpace, Enterprise-Wide Digital Repository and Archive, EPrints, ETD-db, eXtensible Text Framework (XTF), Fedora, Greenstone, Invenio, IRPlus, Islandora, Keystone Digital Library Suite, MOAI. MyCoRe.MyCoRe, Omeka, George Mason UniversityOPUS, PeerLibrary, PubMan, WEKO, Zenodo.

2. About Digital Repository:

A digital repository is consisting of digital content. The purpose of digital repository is storing, maintaining, preserving, creating archives and providing maximum value to digital content, so that we can make easy accessibility of digital content. Digital repositories are of different types like Subject Oriented /Disciplinary, Governmental, Aggregating, Self Achieving, Collaborative Institutional, Undetermined, Open Access, Close Access etc.

3. Institutional Digital Repository:

An institutional repository (IDR) as a single access point for academic community where they can access all institutional published and unpublished research material of the institute. It may include research articles published in national and international journals/conference proceeding, theses and dissertations, project reports of students, learning objects and any other any types of intellectual research material in a digital form produced by the academic community of the institute.

4. Objectives:

- To describe Institutional Digital Repository
- To describe Role of IDR in higher education
- To describe the Installation Process and uploading materials in the IDR
- To highlight Open Source Software

- To provide open access for scholarly content to the user community of institute
- To exploit academic activities, research output of the institute

5. Characteristics of IDR:

1. Institutional repository should represent research output of the any institute: It should represent Research and Development activities of an academic institute or parent organization.
2. Content should be scholarly: The content of IDR should be based on primary/ basic research output, which are produced by the academic user community like Faculties, Ph.D. scholars, staff members and students of the institute. Scholarly content may cover Ph.D. Theses and dissertations, research articles published in national and international journals or conference proceedings, project reports prepared by student, survey reports, formal lectures series on particular concerned subject, and other scientific unpublished research material of the institute.
3. Accessibility of perpetual content: The content should be store for long time preservation. Once the content are uploaded in IDR, user will able to access in future for research purpose. Perpetual access means, it should provide year by year archives of uploaded content.
4. Open access: It should be open access for user community of the institute. There is no necessity that all institutional repositories are always open access for general users, it depends on institutional rules and policies. But it should be open access for institutional members.
5. Evolving nature: With the growth of institutional research output, the content of institutional repository is increasing time to time.

6. Criteria for selecting software for IDR:

Some of the criteria we must consider before selection of any IDR software for design and development of Institutional Repository

- Open Sources or Commercial is now the first option to consider
- In case commercial software, Support after sale
- Hardware support and dependency

- National or International Developer
- Operating System support, Cross platform, Interoperability (Linux, Windows, Macintosh etc.)
- Costing and maintenance charge
- Training and documentation available
- Programming language on which source code is written
- Security and stability

7. Central Library, IISER Bhopal:

Central Library, IISER Bhopal plays a vital role in furthering the academic and research mission of IISER Bhopal and facilitates creation and dissemination of knowledge. Library is having high quality research based information resources, able to provide research environment for 410 users at a time, fully Wi-Fi enabled, having modern e-Library (with 110 computers) to provide access to subscribed e-resources and internet facility, trained and skilled professional staff to serves users in better and effective way, having implemented current tools and technology such as RFID system, CCTV surveillance, touch screen Web-OPAC terminals, Library management software (KOHA), Content management software D-Space. The core mission of Central Library is to provide academic information resources and services to the academic community of the institute to support teaching, learning and research in the field of basic sciences like physics, chemistry, earth and environmental science, mathematics, biological sciences, electrical engineering & computer science. At present, the library offers services such as circulation service, reference service, referral service, reprographic service, document delivery service, e-library with internet facility, resource discovery service, inter library loan, current awareness service, email alert service, display of new books, display of new current periodicals, display of in-house publications, bibliographic service, listing of Ph.D. theses with abstract, reading zone facility, abstracting service, indexing service, library website, user orientation programs, etc. In addition to the services mentioned above, the Library has started various Lib 2.0 initiatives.[1]

8. IDR @ IISER Bhopal

IDR has been designed and developed by Central Library, IISER Bhopal by using D-Space open source software and having IDR policy in place. This repository is

a digital archive of the intellectual research output of IISER Bhopal. Repository provides the set of services to the academic community for the dissemination of digital material created by the institution. Institutional Repository is helpful for long term preservation of digital documents. IDR collect, preserve, and provide free, unrestricted online access to all types of institutional research outputs, knowledge, and scholars. IDR includes theses and dissertations, research publications, article published in conference proceedings. IDR establishment is a challenge as well as an opportunity for information professionals. It may include a variety of research output of any organization. An IDR is a means to ensure that the published work of scholars is available to the academic community. The majority of research scholars do not provide free access to their research output to their colleagues in an organization. IDR provides scholars with a common platform so that everyone in the institution can contribute scholarly material to promote cross-campus interdisciplinary research.[2]

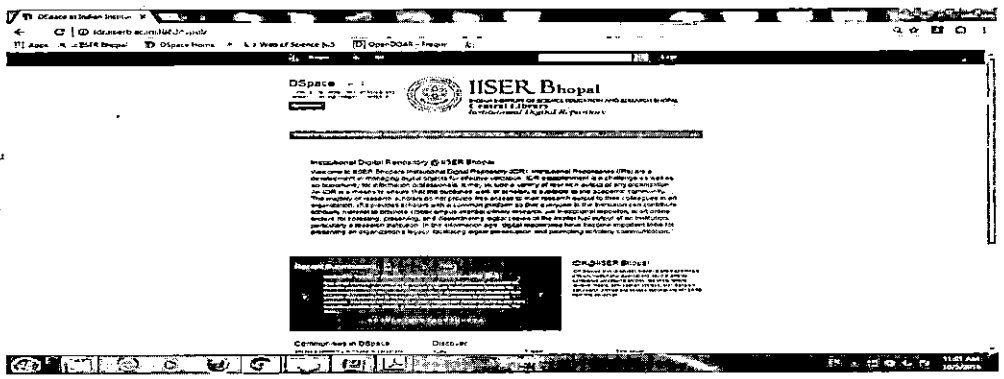
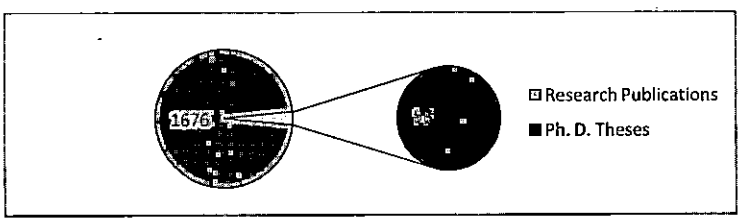


Figure:1 Main page of the Institutional Repository

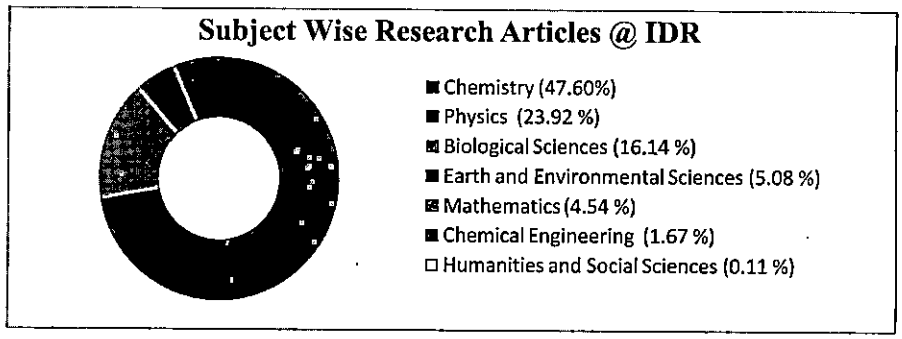
(Screenshot-1)

Institutional Repository Contents @ IISER Bhopal Library: Central Library IISER Bhopal has included all the departments / centers individual community. Each community has two distinct class of collection. They are:Research Publications and These and Dissertations

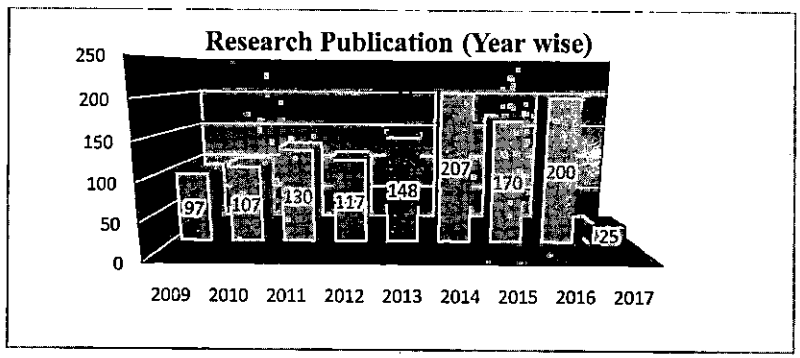


(Graph-1)

Research Publications: It includes research articles of registered faculty members, research scholars and research assistants working at IISER Bhopal may submit their research articles in the library. At present 1,676 research articles (published in national and Conferences /journals).

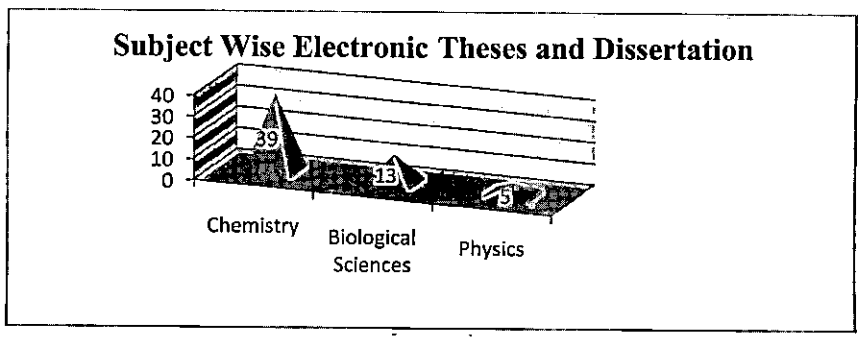


(Graph-2)



(Graph-3)

Theses and Dissertations:



(Graph-4)

9. Institutional Repository Policy

IISER Bhopal library has create and design the procedural document and policy statements pertaining to various aspects of managing and supporting the institutional repository IISER Bhopal Library is the electronic document repository for IISER Bhopal. It is intended to store and present in a convenient single online location for easy of accessibility, search and browsing papers is not the publisher; it is merely the online archive maintained by Central Library, IISER Bhopal.This policy includes in information policy, data policy, and content policy and also includes preservation policy.According to this policy any confide user may access full text free of charge on intranet for their study, teaching & research

10. Software for Institutional Digital Repository EPrints

"EPrints is the first free and open source professional software for maintaining and developing institutional repositories. It was developed by University of Southampton in 2000. It supportsOpen Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). Eprints written in perl programming language, latest version is 3.3.15.

EPrints offers the following types of services

- Hosting and maintaining your repository
- Customizing the repository to your specifications
- Importing your legacy data
- Providing ongoing technical support
- Providing customized training for repository managers and IT personnel
- Advising on policy development
- Assisting with advocacy and promotion
- Providing expert project management from project proposal to product launch"[3]

11. Greenstone

"Greenstone is a suite of software for building and distributing digital library collections. It provides a way of organizing information and publishing it on the web or on removable media such as DVD and USB flash drives. Greenstone is produced by the New Zealand Digital Library Project at the University of

Waikato, and developed and distributed in cooperation with UNESCO and the Human Info NGO. It is open-source, multilingual software, issued under the terms of the GNU General Public License."[4]

12. DSpace

DSpace is digital repository software initially developed by Massachusetts Institute of Technology (MIT) and Hewlett-Packard (HP) labs in 2002. It is widely used software among academic institutional libraries. It has specific features like free and open sources, Unicode facility, fully customizable, capable to store content in different digital format like pdf, jpeg, mpeg, tiff, doc etc., faceted search using Apache Solr. It also support interoperability standard like Open Achieve Initiative Protocol for Metadata Harvesting, Metadata Encoding and Transmission Standard, SWOAR, OpenSearch and Dublin Core, language-Java, Operating System cross platform, Web Interface-JSPUI, JSP, Java Server.

Version 1.2 of the software was released in April 2004.DSpace 6.0 latest version of DSpace It features an enhanced configuration system, enhanced file storage plugins, and new quality control / healthcheck reporting features (via REST API and via email). In addition, DSpace 6 has an eye on the future, with a major Java API refactor that adds support for both UUIDs and Hibernate in our database layer. Like its predecessor, DSpace 6 continues to strive to simplify your upgrade process by automatically updating your database to 6.x compatibility.[5]

Content types in DSpace: The following types of digital content can stored in DSpace these are Animation, Article, Map, Musical Score, Recording, Acoustical Recording Musical, Working Paper, Images, Book Chapter, Dataset, Learning Object, Plan or Blue Print, Preprint Presentation, Recordings Oral, Technical Reports, Videos etc.

13. Comparative Study of Open Source Software for IDR

There are several Open Source Software available which can be used for building an Institutional Repository. For the present purpose, a comparative study of the open source software viz., Green Stone Digital Library (GSDL), EPrints and DSpace was carried out.

Table 1: Comparative Study of Open Source IDR Software

	GSDL	EPrints	DSpace
Producer	**University of Waikato, New Zealand**	**University of Southampton, UK**	**MIT-HP, USA**
Open Source	Yes	Yes	Yes
Operation System	Linux & Windows	Linux	Linux & Windows
Web Server	Apache/IIS	Apache 1.3	Apache 1.3/ Jakarta Tomcat
Language	Perl	Mod-Perl 1.0	Java 1.3 JSP
Database	Its Own	MySQL	PostgreSQL 7.3 onwards
Resource Identifier	No	OAI identifiers (similar to URNs)	CNRI handles
Dublin Core	Dublin Core	Dublin Core	Qualified Dublin Core
METS	No	No	Yes
OAI-PMH	Yes	Yes	Yes
Subscription	No	Yes	Yes
Supported File formats	MS-Word, PDF, HTML, Postscript, JPEG, GIF	MS-Word, PDF, HTML, JPEG, GIF	MS-Word, PDF, HTML, PPTs JPEG, GIF

It was decided to selecting DSpace for the following reasons

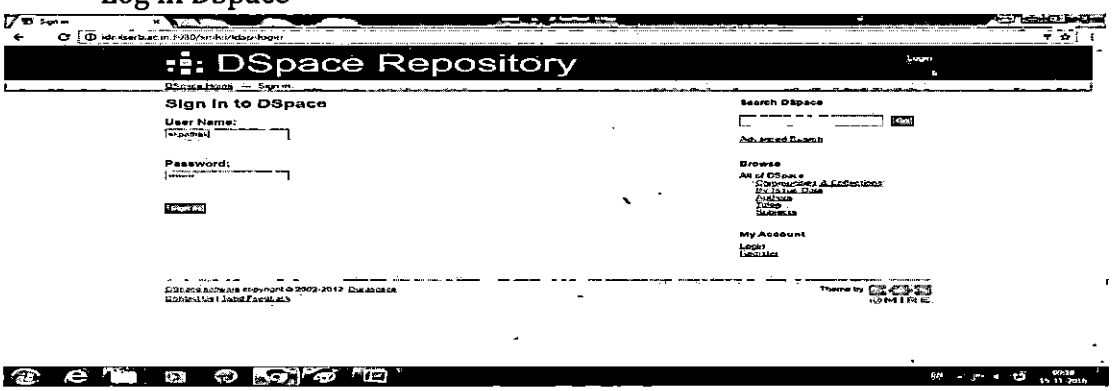
- It is a completely customizable to fit the needs. It has flexibility, functionality and can be maintained with minimum staff time.
- DSpace provides access to the digital work of the whole institution through one interface.
- DSpace accepts any type of digital contents including Text, Images, PPTs, and Audi-Video etc.
- DSpace is being used by many national and international libraries and knowledge resource centre. Since this software is updated regularly, it helps in enhancing the performance of the retrieval system.
- OAI-PMH Compliance.

In addition, other Software was needed to run DSpace including:

- UNIX-like OS (Linux, HP/UX etc)
- Java 1.4 or later (standard SDK is fine, you don't need J2EE
- Apache Ant 1.5 or later (Java make-like tool)
- PostgreSQL 7.3 or later, an open source relational database, or Oracle 9 or higher
- Jakarta Tomcat 4.x/5.x
- Also an acrobat PDF is required to convert MS-Words file to PDF file.

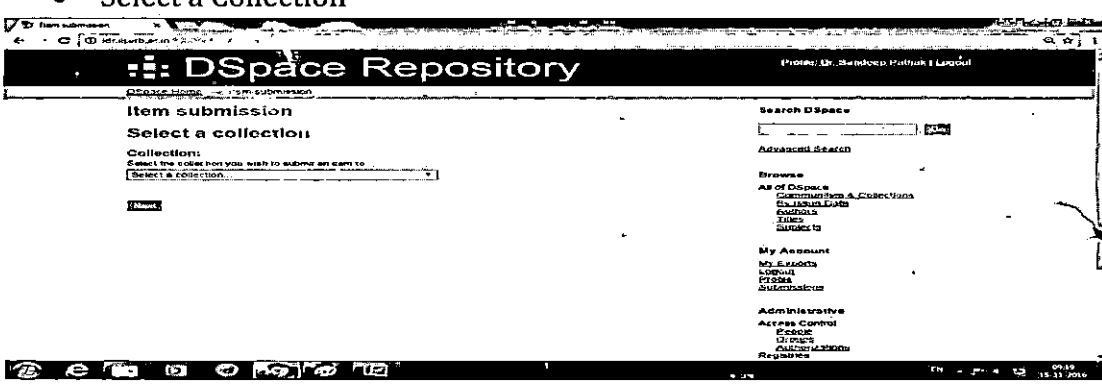
Steps for submitting content in IDR

- Log in DSpace



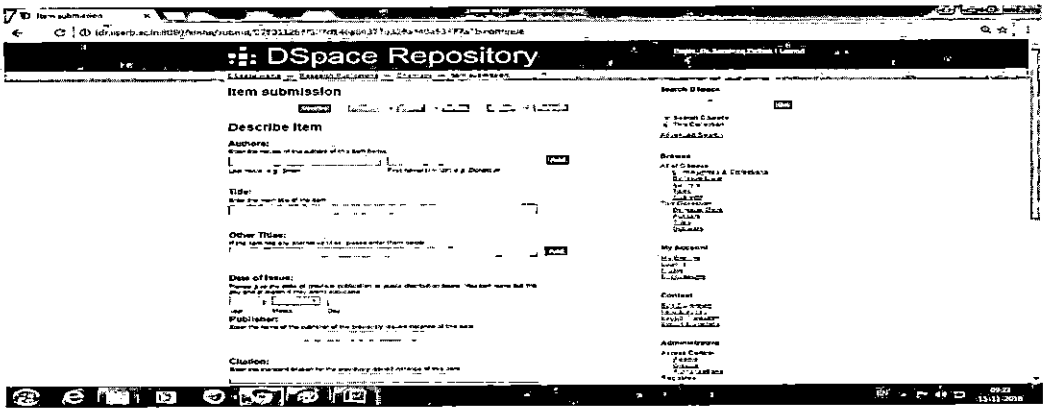
(Screenshot-2)

- Select a Collection



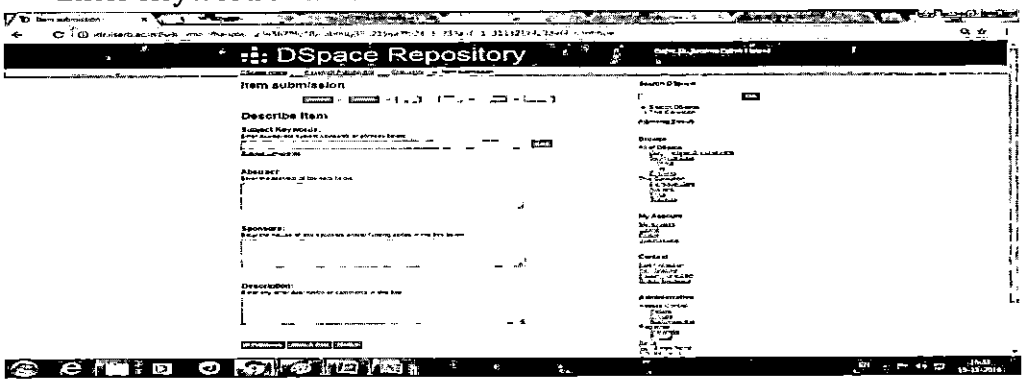
(Screenshot-3)

- Enter Metadata



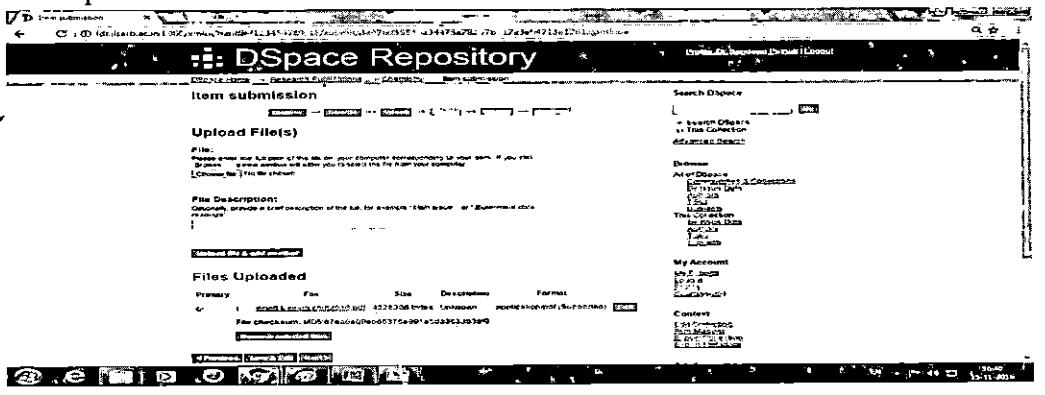
(Screenshot-4)

- Enter Keyword and Abstract



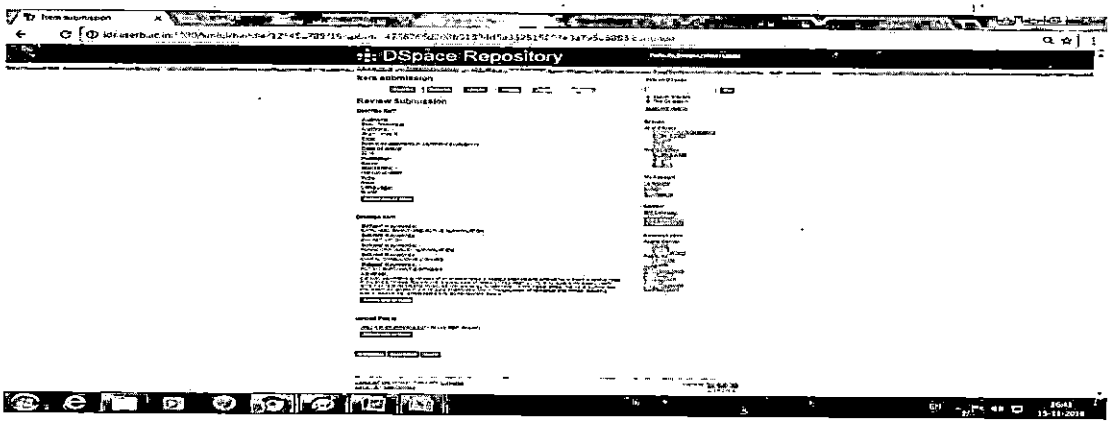
(Screenshot-5)

- Upload Files



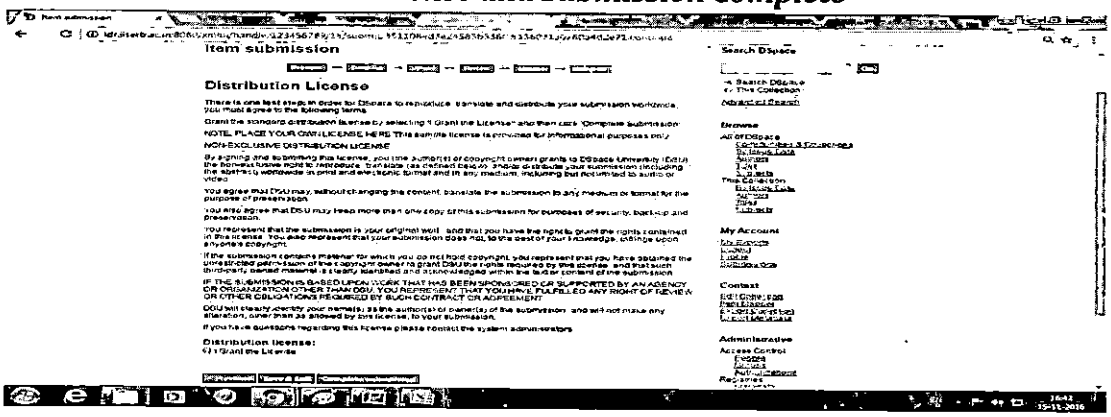
(Screenshot-6)

- Check Metadata



(Screenshot-7)

- **Click on *Grant the License and Submission Complete***



(Screenshot-8)

Key Issues of Developing Institutional Digital Repositories

Here are some of the key issues to consider when developing repositories:

- Content
- Accesibility
- Copyright issues
- Institutional culture
- International Standards
- Sustainability

- Funding Institutional

By effect of institutional culture the content of the repository may reflect more value of the institutioan repository. It also depends on collaboration of the faculty member and other scholars/students of the academic institution who create new knowledge on the basis of R & D activities. In academic organizations, faculty belongs to departments, disciplines, and research groups. Academic competition may be fiercer in some universities than in corporations. In an internally competitive environment where cooperation and trust are not nurtured, building a repository will become more difficult. Faculty will not contribute willingly to a central repository unless they have been consulted and trust the process. Faculty need to be convinced that contributing to a repository will enhance their reputations in their disciplines and result in wider dissemination of their work.

14. Elements for Evaluation of IDR:

Resources, Metadata presentation, Preservation, Network, Services, Storage, Management, Search Retrieval, Availability, Content etc.

15. Conclusion:

Academic libraries are always trying to increase the visibility and importance of institutional research and development activities. These R & D activities are evolving as intellectual research outputs in different form like as research articles, theses and dissertations, project reports, technical reports, learning objects, teaching and learning projects etc. In this way there is a need to manage, preserve and enhancing the accessibility of these valuable research materials. Now in the era of digital environment, there are many open source tools or software are available for managing these resources in the easiest way just like we can say "Digital Repository" Many of the academic libraries are preferring and using DSpace digital library software which support OAI-PMH and Metadata Standards (Dublin Core). DSpace provides easier features than other repository software and its source code are available free so that it is useful for developing according to need of an institutional library. Definitely institutional repositories are enhancing the role of academic libraries and information professionals for providing information services.

References:

1. https://iiserb.ac.in/page.php?page=Central%20Library&pid=54
2. http://idr.iiserb.ac.in:8080/jspui/
3. http://www.eprints.org/uk/index.php/eprints-software/
4. http://www.greenstone.org/
5. http://www.dspace.org/
6. Das, Debasis. Chatterjee, Parnab (2015). Institutional Repository at Central Library IIT Kharagpur: An Overview Available at https://www.ijedr.org/papers/IJEDR1502061.pdf
7. Sutradhar, B. (2006). Design and development of an institutional repository at the Indian Institute of Technology Kharagpur Program: electronic library and information systems, 40(3);, 244-255p
8. Satyabati ,Thiyam . Hosamani, H G . Murthy, T A V.(2004). Institutional Repository of INFLIBNET Centre Using Dspace Available at http://ir.inflibnet.ac.in/bitstream/1944/420/1/04Planner_7.pdf
9. Rao, P Venkata. (2007) Institutional Repositories : A Key Role For Libraries 689-695p. Available at http://ir.inflibnet.ac.in/bitstream/1944/1443/1/689-695.pdf
10. Sharma , Ajay Kumar. Saha, Nimai Chand. Meichieo, Kevinino. Institutional Repositories and Skills Requirements, A New Horizon to Preserve the Intellectual Output: An Indian Perspective. Available at http://ir.inflibnet.ac.in/bitstream/1944/1145/1/30.pdf
11. Sengar, K.P.S. (2010) Building a Digital Institutional Repository Service (DIRS): IMTECH (CSIR) Initiative

Authors Profile

	Ms. Neha Jain Passed MLIS and BLIS both from Dr. Harisingh Gour University, Sagar, Madhya Pradesh. Presently, working in AISECT University, Bhopal. Prior to this, she has worked as Library Professional Trainee at IISER Bhopal and IIM Ahmedabad.
	Ms. Ruchi Jain is currently a Junior Research Fellow at BBAU, Lucknow. Prior to this, she has worked as Library Professional Trainee at IISER Bhopal and IIM Indore also. MLIS and BLIS both from Dr. Harisingh Gour University Sagar, M. P. Educational qualification is concerned she has awarded gold medal for scoring highest percentage in M.L.I.Sc and B.L.I.Sc. Ms. Ruchi Jain has published 5 research papers in International Journals / Indian Journals / International Conference Proceedings etc. on recent technology used in Libraries and Information Centres.

Digital Libraries in Academia: Challenges and Changes

Dr. Javed Khan

Associate Professor
Deptt. of Lib. & Inf. Sc.
University, Meerut

1. INTRODUCATION

The digital libraries may be defined as the new way of carrying out the functions of libraries, encompassing new type of information resources new approaches to acquisition; new methods of storage and preservations; new approaches to classification and cataloging; intensive use of electronic systems and networks; and dramatic shifts in intellectual, organizational and electronic practice. Digital library is system providing a community of users with coherent access to a large, organized repository of information and knowledge. The digital library is not just one entity, but multiple sources seamlessly integrated.

The digital libraries endow with a structural and planned entrance to information stuffing in a dispersed environment and assist users in searching evaluating and utilizing resources irrespective of their format. Improved information retrieval and enhanced document delivery capabilities are widely acclaimed strength of digital library in a networked environment through internet and internet in library and information center.

2. Digital Libraries:

1. The digital library is not a single entity.
2. The digital library requires technology to link the resources.
3. Linkages between digital libraries and information services are transparent.
4. Universal access to digital library must be a goal.
5. Digital library collections are restricted to document surrogates but include digital artifacts that have no printed equivalent.

3. WHY DIGITAL LIBRARIES:

Libraries have changed with time to time from mere static storehouse to dynamic service centers, serving all professionals and non-professionals utilizing useful need base collection. The emphasis of the users has also shifted from micro document to micro piece of information with the changed of the medium from clay tablets to paper and now to electronic and optical media.

The worlds of both communication and production of information are changing at a very fast pace and the convergence of these had huge impact on libraries. All this changes in libraries is due to the impact of information technology and this impact is seen in the form of digital library.

PURPOSE OF DIGITAL LIBRARY

1. To expedite the systematic development of procedures to collect, store and organize the information in digital library.
2. To encourage cooperative efforts to save the share the investments in research sources, computing and communication network.
3. To promote efficient delivery of information economically round the word.
4. To provide the leadership for the successor for dissemination of knowledge in the area of research.
5. To solve the space problem of the library as the library is a growing organism.
6. To preserve the library reading material for a longer duration.
7. To solve the resources crunch in the library budget being spent for the purchase of books and journals.

4. REQUIREMENT FOR DIGITAL LIBRARIES

The internet and World Wide Web provide the inputs and technological environment for the development and operating of a digital library. The internet provides the TCP/IP and or its associated protocol for accessing the information and web provide tools and technique for publishing the information over internet some of the requirement for digital libraries are:

1. Audio visual: color T.V, V.C.R, D.V.D, Telephone etc.
2. Computer: Server, P.C. with multimedia, U.P.S etc.

3. Network: LAN, MAN, WAN Internet etc.
4. Printer: Laser printer, Dot matrix, Bar code printer, Digital graphique printer etc.
5. Scanner: H.P scans jet. Drum scanner, slide scanner, microfilming scanner, digital camera, barcode scanner etc.
6. Storage devices: Optical storage device. CD- ROM etc.
7. Software: Any suitable software, which in interconnected and suitable for LAN and WAN connection.

5. SOME IMPORTANT FEATURES OF DIGITAL LIBRARY

1. To introduce new service and material
2. To provide remote access to information resources that is expensive and rare and easy searching that is impractical manually;
3. To facilitate in the management of digital content
4. To minimize in handling of rare and unique collection of traditional library
5. To improve access to the latest information at a very high speed
6. To support search and retrieval
7. To provide users friendly interface
8. To support formal and informal learning
9. To reduce errors that would have occurred in the manual systems scientifically because of bar code.
10. Digital libraries as global multilingual expository of data must attract people from all walks of life regardless of geographical locations. .

6. THE DIGITAL LIBRARIES: OPPORTUNITIES

Building and managing digital libraries ask for huge intellectual and financial resources. World has already witnessed the huge amount spent world over on digital library research and development activities.

- The digital library allows access to information to its udders as and when they need it from anywhere in the world.

- The digital library facilitates improved access to information by providing various sophisticated search and retrieval facilities.
- The digital library facilitates for information sharing among users through notification, file sharing and cooperative document preparation.
- The digital library help users to get up-to-date information because the time lag reduced with the help of the web and digital publishing and quick inclusion of digital information in the digital library collection.
- The digital library breaks the barriers of time, space language and culture.
- The digital library facilitates improved collaboration among users which has profound impact on the scholarly information life cycle- the process by researches and scholars create, use and disseminate information.
- The digital library reduces the gap between nations and people and in terms of infrastructure, faculties and resources. Thus, it reduces the digital divide.

7. RESOURCES OF A DIGITAL LIBRARY:

The resources of a digital library are those, which the computer can store, organize, transmit and display without any intervening conversion process. It includes both print and electronic or digital material. The collection also includes structured/ unstructured text, scanned images Graphic audios, video recording etc.

8. On line resources:

1. Local database of traditional books in machine readable form.
2. E-books, map, image, sound, video, and multimedia etc.
3. LAN, MAN, WAN, for web browsing e-mail etc.
4. Weal trained manpower for online help.

9. Off line resources

1. C.D-ROM, jukebox etc.
2. Audio visual aid etc.

10. ADVANTAGE OF DIGITAL LIBRARY

A digital library is not confined to particular location or so called building it is virtually distributed all over world. The user can get their information their own computer screen by using the internet. Actually it is a network of multimedia system, which provides fingertip access.

1. **No physical boundary**: The user of a digital library need not to go to the library physically, people from all over the world could gain access to the same information, as long as an internet connection is available.

2. **Round the clock availability**: Digital library can be accessed at any time, 24 hours away and 365 days of the year.

1. **Multiple accesses**: The same resources can be used at the same time by a number of users.
2. **Structured approach**: Digital library provides access to much richer content in a more structured manner i.e we can easily move from the catalog to the particular books then to a particular chapter so on.
3. **Information retrieval**: The user is able to use any search term bellowing to the word or phrase of the entire collation. Digital library will provide every user friendly interfaces, giving click able access to its resources.
4. **Preservation and conservation**: An exact copy of the original can be made any number of times without any degradation in quality.
5. **Space**: whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simple because digital information requires very little physical space to contain them. When the library had no space for extension digitization is only solution.
6. **Networking**: A particular digital library can provide the link to any other resources of other digital library very easily huts a seamlessly integrated resources sharing can be achieved.
7. **Cost:** The cost of maintaining a digital library is much lowers then that of a traditional library. A traditional library much spends large sums of money paying for staff, book maintains, rent, and additional books. Digital library do away with these fees.

11. DISADVANTAGES OF DIGITAL LIBRARY:

The computer viruses, lack of standardization for digitized information, quick degrading properties of digitized material, different display standard of digital product and its associated problem, health hazard nature of the radiation from monitor etc. makes digital libraries at time s handicap.

1. **Copyright:** Digitization violates the copy right law as the thought content of one author can be freely transfer by other without his acknowledgement.
2. **Speed of access:** As more and more computer are connected to the internet its speed of access reasonably decreasing. If new technology will not evolve to solve the problem then in near future internet will be full of error messages.
3. **Initial cost is high:** The infrastructure cost of digital library i.e the cost of hardware, software, leasing communication circuits is generally very high.
4. **Band width:** Digital library will need high band width for transfer of multimedia resources but the band width is decreasing day by day due to its over utilization.
5. **Efficiency:** With the much larger volume of digital information, finding the right material for a specific task becomes increasingly difficult.
6. **Environment:** Digital library cannot reproduce the environment of a traditional library. Many people also find reading printed material to be easier than reading material on a computer screen.
7. **8. Preservation:** Due to technological developments a digital library can rapidly become out of date and its data many become inaccessible.

12. DIGITAL LIBRARIES AND TRADITIONAL LIBRARIES

Digital library functions, insofar as they purport to organize information may be compared with traditional library function. Consider digitization which technically is the conversion of analog to digital formats. A common human artifact, such as bound books loses value when simply scanned into bits in library context, where organization, access, protection, and preservation are important business functions, digitization technologies are starting points for complicated set of computational processes that in the first instance reconstruct the culture,

conventional and intuitive significance, structure, and external, relationships that defined the original artifact.

Additionally, digitization and other processes may be able to add value and support certain fiduciary responsibilities that resemble function of traditional libraries. In a similar way, other core capabilities of traditional libraries can be transposed to the digital domain, cataloguing is transposed to the generation of metadata, and is an area where much work needs to be done to develop automated, multidimensional indexing and cataloguing procedures.

13. CONCLUSION:

Digitization is an essential task in modern day libraries. If a library is to live up to current challenges, it has to go digital, that is, provide online services. This will enable it to preserve endangered library resources, improve the efficiency of information search mechanisms and enhance access to library resources. It creates new ways to search and access library content and also a step forward leading Universities.

References

1. Ansari, Mahatab Alam (2003) Digital Libraries: Needs, Technology and benefits. ILA Bulletin V. 39, N.2 (April-June 2003), P.40-41.
2. Arms, William Y (2000), Digital Libraries, the MIT Press, Cambridge New York.
3. Jantz, Ronald. (2001). Technological Discontinuities in the Library: Digital Projects that Illustrate New Opportunities for the Librarian and the Library. IFLA Journal 27, 74-77.
4. Kessler, Jack (1996). Internet Digital Libraries: The International Dimension. Boston: Artech House Publishers.
5. Malwad, N.M (Ed.) (1996) Digital Libraries: New Delhi: New Age International.

Digital Library Programme in India

Brij Bhushan Mishra

Ref. Librarian G.b. Pant Social Science Institute Of Allahabad

Dileep Kumar Dubey

Librarian Cum Chief Documentation Officer,
Uttar Pradesh Legislative Assembly, Lucknow, Uttar Pradesh, India

Umesh Kumar Gaur

Chief Librarian T.S.M. Medical College and Hospitals Amousi Luckonw

Ajay Kumar Yadav

Librarian Hind Institute of Medical Science Safedabad Barabanki

Abstract: Digital library program of India (DLI) is a digital collection of freely accessible rare books collected from various libraries in India.

Indian DL initiatives achieved multi stakeholder participation with increase international regional, national and local collaboration.

Keywords digital libraries, ITC, technology

1. Introduction

The inferred pacific "digital library for India" programme is designed to deliver digital archives of valuable Indian content using the best of **ECMS.**

Digital archiving and contest security method of programme is exclusively for qualified Indian institutions. Every library has the need to make digital contest available for their user communities. Making the decision on how to get started with a digital repository can be a daunting challenge especially for organization with limited technical resources. Digital library of India has currently 500,585 books with 191,657,791 page (191.632 million approx)

DLI project started on early 2000 with the vision to archive all the significant literary, artistic and scientific work of mankind and to preserve digitally and make them available freely for every one over internet for education, study appreciation and for future generations.

Definition : "A digital library service is an assemblage of digital computing, storage and communications machinery together with the software needed to reproduce, emulate and extent the service provided by conventional library based on paper and other material means of collection storing, cataloguing, finding, and dissemination information."**(Glodney H.M. et. Al.1994)**

Types:-There are many different types libraries that all fall under three large categories stand Alde

1- digital libraries **(SDL)** federated digital library

2- **(FDL)** and harvested digital libraries **(HDL).**

Aims and objectives:-

- To survey the existing digital libraries available in the different organization in India.
- To ascertain the current status of the existing digital libraries in India.
- To assess the growth and development of digital libraries in India.
- To identity the special needs of digital libraries in India.
- To ascertain the different ongoing project on digital libraries.
- To suggest possible solution to eradicate the problems to digital libraries.
- The programmers aims to take digital literacy to the next level and will focus on finding ways to encourage people to opt for cashless financial transations.
- Governance & service on demand.
- Digital infrastructure as a utility to every citizen.
- Digital empowerment of citizens.

2. Scope of the study:-

The study aims to investigate the over all of digital libraries only. But not consumed about any traditional or any other library system.

3. Digital Library Initiatives in India:-

The digital library of India project is hosted by the regional mega scanning centre, Indian Institute of Information Techonolgy, Hyderabad in Co-operation with IISC,

CMU, NSF, ERNET and MCIT for the Govt. of India and 21 participating centre It has developed substantial collection of books, journals, news papers and manuscript.

4. Traditional knowledge Digital Library:-

India extends protection of areas of traditional knowledge utilizing the established advantage of information technology through the setting up of a traditional knowledge digital library.

If further resolved to protect and preserve traditional knowledge, encourage innovation and creativity and promote the sharing of benefits through the effective use of appropriate systems including Intel property system.

5. Conclusion:-

The effect of focused capacity building programmers in the areas of digital preservation digital libraries and open access to literature is encouraging in a country like India. Where significant proliferation of open access and digital library imitative have been achieved in the last decade, which has seen fantastic accomplishments and the future presents exciting possibilities and challenges.

Refrenece:

1. Chowdhary G.G. (2002). Digital libraries and reference services present and future journal of documentation. 58(3), 25-283
2. Coffman, S and saxton, M.L. (1999) Staffing the reference desk in the largely digital library. Reference librarian 66, 141-161.
3. Gray, S.M. (2000) Virtual Reference Services. Directions and agendas reference.
4. Users service Quarterly 34(4), 365-375.

E-Journal Consortia in and Information literacy In Digital Era

Dr.Yasmeen Zia

Department of Library and Information Science
SNGGPG College, Bhopal (M.P.),E-mail ID: yasmin.library@gmail.com,9826676134

Seema Tehseen

Department of Chemistry
Bhoj College,Bhopal (M.P),E-mail ID: drseematehseen@yahoo.com,9644750961

Abstract: Today, we observe that new technological development in the form of computers, telecommunications, electronics and Internet have been adopted in libraries to serve the researchers & academics. In changing environment the influence of new information technologies and use of e-resources in libraries is common.

E-Journals have brought in drastic changes in library services. E-Journals is a main part of e-resources. E-journals are vital sources of information for research and development. These are very costly & not bearable for every library, so there is a major role of consortia in subscribing e- journals. This paper will discuss the role of consortia in E-Journals.

Keywords: Consortia, E-Resources, E-Journals, Library.

1. Introduction:

The college and university libraries in India are faced with the challenges to meet the user requirement due to various reasons such as growth of knowledge, price, escalation, budget restriction etc. E-subscription is one the emerging toolkits for libraries to survive in the present circumstances.

E-journals are vital sources of information for the scientific research & development. The number of periodicals at present is estimated to be 25000 of these 25000 are scientific, technical and medical (STM) journal, 15000 are referred scholarly periodicals which are available online.

"A library consortium is a formal association of libraries not under the same institutional control. But usually restricted to a geographical area, no. of material or subject which is established to develop and implement resources sharing among members."

Basic purpose of consortia is sharing of resources, money & manpower and unlimited access.

Main objectives of consortia are :

2. To control and reduced information cost.
3. To improve resource sharing.
4. To develop a network information environment.
5. To share licensing issues.
6. Avoid duplication of subscription of E-resource and promote the national views of fund.
7. Better negotiation for purchase of E-journals with vendors.
8. Promote better faster and more cost effective way of providing E-information resources to the information users.

2. Need of consortia is:

1. To make research easier to scholars.
2. To increase the seed of technological development.
3. Cost sharing agreements.
4. Present the licensing issues or the problems.

3. Advantages of consortia:

To collect resources by existing resources all collection to visual virtual union catalogue and sharing of –

- Collection and collaboration and collection development.
- Electronic resources in including the creation.
- Storage of resources.
- Sharing staff expertise.
- Sharing the risk.
- Union list of serials.
- Reduce the cost, etc.

4. Need for E-journal consortia:

E-journal titles are growing three folds every 15 years and their cost 2.5 times every 10 years. Obviously no single library can afford to procure all journals even

in a single discipline with the emergence of IT application, particularly internet these has been a major shirt from traditional print journals to electronic journals in view of many advantage of the letter, i-e fast easy, any where-anytime shared hyper facility to related texts, cost-effectiveness. As a result the number of e-journals is fast growing and at present 5000 journals are available.

5. Purpose of using E-journals:

The user using e-journals for research related purpose i.e ,writing papers, projects, research work and seminars. Some user using e-journals in preparing notes of getting current information on research area. Volumetric growth of documents in print as well as in electronic form is a great challenge for libraries. To solve this problem library cooperation started long ago, such as library network, inter library loan (ILL), document delivery services, library consortia etc. Some of the important consortia are FORSA,CSIR Consortium, IIM Consortium , MCIT Library Consortium, UGC-Info net Digital Library Consortia and INDEST-AICTE Consortium.

The main objectives of Consortium is to subscribe electronic resources mainly e-books and e- journals for the members of the Consortium at highly discounted rates of subscription and at best terms and conditions and to find more avenues of co-operation and interaction with other consortia.

Consortium is not just a buying club for electronic resources, there are several other activities that the consortium performs optimal utilization of electronic resources subscribed by it. Some other important services and activities of the consortium are e-resource purchasing, training of users and library staff, technical support to member institutions etc.

6. Conclusion:

The phenomena of consortia or group of libraries buying e-information together has become very important in the last few year. Consortium is a need of every library because of information explorer, financially crack and impossibility of self sufficiency. Strengthing the member institution by library discount .It also institutions for e-journals & e-resources.

References:

1. Jagdish Arora, The International Information & Library Review, Vlume 35,

Issue 1, 2003.

2. Ashok Babu,T.Consortia for journals,XXI, National seminar of IASLIC,Kolkata 31Dec.-3ed Jan. 2005.
3. http://www.e-learning.gov.2016
4. http://eprings.ise.ac.UK.,e-learning and information literacy.LSE,Research online,May 2008.
5. Lal_c.Information literacy in the digital era,2008.

AUTHOR'S PROFILE



Dr. Yasmeen Zia is working as an asst. professor at SNGGPG College, Bhopal. She has a Ph.D in "Use of the libraries and information seeking behavior of the teachers and students of the selected engineering colleges of M.P "in library & Information Science. She holds M.Sc (Chemistry) ,M.L.I.S and M.Phil Degrees .She has many publications to her credit and also written several chapters in 3 different books. She has participated and presented papers in many national and International conferences. She is a life member of ILA ,IASLIC and MPLA. She is an Executive Editor in Elixir Research International Journal (ERIJ) & Research scapes .

Dr. Seema Tehseen is working as an asst. professor at Bhoj (PG)College, Bhopal. She has a Ph.D in Chemistry. She holds M.Sc (Chemistry) .She has many publications in the field of Chemistry and Information Science to her credit . She has participated and presented papers in many national and International conferences. She is member of MPLA, Fellow member International Science Congress & Life member of Indian Science Congress. She is an Managing Editor in Elixir Research International Journal (ERIJ) .

Growing Cyber Crime In The Field Of Library And Information Science

Aishwarya Srivastava

M.Lib.I.Sc. 1st Semester
Department of library science, University of Lucknow
Home address: 188/78 Hata durga Prasad mashakgnaj, Lucknow
E-mail I.D- srivastavaaishwarya19@gmail.com

Abstract: "This paper describes us about cyber crime, trends of cyber crime in the field of library and information science as well as few provisions under IT Act 2000, made by Govt. of India to punish those whosoever do cyber crime. Lastly, I suggested some prevention to reduce the chances of cyber crime."

Keywords: Cyber crime, Cyber laws, Types of cyber crime.

1. Introduction

As cyber crime has proliferated exponentially across the globe, those in criminal justice field have lacked suitable and updated knowledge concerning the pedestrian reality of modern cyber crime. Popular media has created an image of cyber crime that suggests a lone hacker breaking through seemingly impossible security measures to access lucrative secret data. Crime like these are very rare, but cyber crime is all to common.

Criminals use the internet to commit fraud , harass or bully people download illegal pornography or download stolen music for more than they use internet to violate national security.(Agustina, 2012)

Even , if we do not use internet much of our personal information will be stored somewhere on a networked computer, so in one way or another it affect all of us.

Also, India is fastest growing internet using country in the world especially in Asia. Companies like BSNL, MTNL, Airtel, Reliance etc. are providing internet service at the competitive rates. (Kumar,2013)

With over 460 million internet users, India is the second largest online market ranked only behind China. Dispute the large base of internet users in India, only 26% of Indian population accessed the internet in 2015. Also, India often turns to mobile internet , as the large majority of digital population in India were mobile internet users in 2016. (http://www.statisto.com/topics/2157/internet-usage-in-India/)

2. WHY LIBRARY NEED PROTECTION FROM CYBER CRIME?

As libraries are known as storehouse of knowledge who collect authentic, right information and further disseminate them to the needy information seeker. Also in the present scenario of digital environment, library also subscribe e-resources in large number to satisfy their users more efficiently and effectively. Beside this libraries are creating user databases , hold and maintain catalogues.

Therefore, each and every library patrons or information seeker are highly depended on e-resources, databases and other modes of information available online. So , libraries are also sensitive place where user may face cyber attacks or might commit internet crimes. Library users expect to have a safe computing environment , to provide this we must to knowledgeable about cyber crime as well as promote user education in relation with secure access to online information.

3. TYPES OF CYBER CRIME OCCUR IN LIBRARIES

G. Rathensabapathy and L. Rajendran reported following kinds of modern cyber crime.

Financial crime- Computer and internet have given a new face for the criminals to do financial crime, cheating credit cards frauds, money laundering were major crimes come under this category.

Sale of illegal articles- The law prohibits sale of illegal articles but internet paves the way for sale of illegal articles by posting information on websites.

Cybersquatting – Recent, researches indicate that online intellectual property crime/cybersquatting is one of the fastest growing areas of criminal activity in the world.

Email spoofing- A spoofed email is one that appears to originate from one source but actually has been sent from another source.

Deniel of service attack- This involves flooding a computer resource with more requate that it can handle . This causes the resource to crash thereby denying authorized users the service offered by the resource.

TROJAN attacks- It is an unauthorized program which function from inside what seems to be an authorize program , thereby concealing what it is actually doing.

Internet time theft- This connotes the usage by an unauthorized persons of the internet hours paid for by another person.

Web Jacking – Forceful taking of control of website by cracking password is terms as web jacking.

Phishing- It is the act of sending an email to a user falsely claiming to be an established legitimate business in an attempt to seam the user into surrending private information that will be used for identify theft.

4. CYBER LAWS IN INDIA

Cyber laws are meant to set the definite pattern, some rules and guidelines that defined certain business activities going on through internet legal and certain illegal and hence punishable. The IT Act 2000, the cyber law of India, gives the legal framework so that information is not denied legal effect, validity or enforceability, solely on the ground that it is in the form of electronic records. The IT Act 2000 attempts to change outdated laws and provides ways to deal with cyber crimes. (http://www.cyberlawsindia.net/2sides.html)

Some provisions are given below:

1. Subject to the provisions of this section any subscriber may authenticate an electronic record by affixing his digital signature.

If any person without permission of the owner or any other person who is incharge of a computer, computer system or computer network, —

- accesses or secures access to such computer, computer system or computer network;
- downloads, copies or extracts any data, computer data base or information from such computer, computer system or computer network including information or data held or stored in any removable storage medium;
- introduces or causes to be introduced any computer contaminant or computer virus into any computer, computer system or computer network;
- damages or causes to be damaged any computer, computer system or computer network, data, computer data base or any other programmes residing in such computer, computer system or computer network;
- disrupts or causes disruption of any computer, computer system or computer network;
- denies or causes the denial of access to any person authorised to access any computer, computer system or computer network by any means;

- provides any assistance to any person to facilitate access to a computer, computer system or computer network in contravention of the provisions of this Act, rules or regulations made there under;
- charges the services availed of by a person to the account of another person by tampering with or manipulating any computer, computer system, or computer network,

he shall be liable to pay damages by way of compensation not exceeding one crore rupees to the person so affected.

2. If any person who is required under this Act or any rules or regulations made thereunder to—

- furnish any document, return or report to the Controller or ?he Certifying Authority fails to furnish the same, he shall be liable to a penalty not exceeding one lakh and fifty thousand rupees for each such failure;
- file any return or furnish any information, books or other documents within the time specified therefor in the regulations fails to file return or furnish the same within the time specified therefor in the regulations ,he shall be liable to a penalty not exceeding five thousand rupees for every day during which such failure continues
- maintain books of account or records, fails to maintain the same, he shall be liable to a penalty not exceeding ten thousand rupees for every day during which the failure continues.

3. Whoever contravenes any rules or regulations made under this Act, for the contravention of which no penalty has been separately provided, shall be liable to pay a compensation not exceeding twenty-five thousand rupees to the person affected by such contravention or a penalty not exceeding twenty-five thousand rupees.

4. Tampering with computer source documents.

Whoever knowingly or intentionally conceals, destroys or alters or intentionally or knowingly causes another to conceal, destroy or alter any computer source code used for a computer, computer programme, computer system or computer

network, when the computer source code is required to be kept or maintained by law for the time being in force, shall be punishable with imprisonment up to three years, or with fine which may extend up to two lakh rupees, or with both.

5. Hacking with computer system.

Whoever commits hacking shall be punished with imprisonment up to three years, or with fine which may extend upto two lakh rupees, or with both.

6. Publishing of information which is obscene in electronic form.

Whoever publishes or transmits or causes to be published in the electronic form, any material which is lascivious or appeals to the prurient interest or if its effect is such as to tend to deprave and corrupt persons who are likely, having regard to all relevant circumstances, to read, see or hear the matter contained or embodied in it, shall be punished on first conviction with imprisonment of either description for a term which may extend to five years and with fine which may extend to one lakh rupees and in the event of a second or subsequent conviction with imprisonment of either description for a term which may extend to ten years and also with fine which may extend to two lakh rupees.

7. Protected system.

Any person who secures access or attempts to secure access to a protected system in contravention of the provisions of this section shall be punished with imprisonment of either description for a term which may extend to ten years and shall also be liable to fine.

8. Penalty for misrepresentation

Whoever makes any misrepresentation to, or suppresses any material fact from, the Controller or the Certifying Authority for obtaining any licence or Digital Signature Certificate, as the case may be. shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

9. Penalty for breach of confidentiality and privacy

Any person who, in pursuance of any of the powers conferred under this Act, rules or regulations made thereunder, has secured access to any electronic record, book, register, correspondence, information, document or other material without the

consent of the person concerned discloses such electronic record, book. register, correspondence, information, document or other material to any other person shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

10. Penalty for publishing Digital Signature Certificate false in certain particulars

Any person who contravenes the provisions of sub-section (1) shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

11. Publication for fraudulent purpose.

Whoever knowingly creates, publishes or otherwise makes available a Digital Signature Certificate for any fraudulent or unlawful purpose shall be punished with imprisonment for a term which may extend to two years, or with fine which may extend to one lakh rupees, or with both.

12. Act to apply for offence or contravention commited outside India

For the purposes of sub-section (1), this Act shall apply to an offence or contravention committed outside India by any person if the act or conduct constituting the offence or contravention involves a computer, computer system or computer network located in India.

(http://www.dot.gov.in/sites/default/files/itbill2000_0.pdf)

13. POSSIBLE MEASURES TO PREVENT CYBER CRIME IN LIBRARIES

As we all know library and information center use computers and associated technologies. Use of internet based technologies , use of e-journals , e-books, databases are very common now-a-days. So , use of these kinds of facilities require good networking system within the computer and in some organization outside the computer. The aim of security is to protect the library's network resources that or shared our intranet and internet. The security of network include server, workstation and resources shared all over the network.

- Use updated antivirus software in order to protect the library data from virus and malware.

- Know about sources of cyber crime.
- Not to share passwords and credit details at the time of transaction.
- Taking up regular data backups.
- Use of firewalls.
- Promoting user authentication methods while providing access to library data.
- Block users from downloading programs onto public computer.
- Two part authentication must be enabled so that if password is cracked the account, still cannot be accessed without code.

14. Conclusion

As due to presence of ICT and internet facility , criminals also started commiting crime in the networked environment. In a present scenario, cyber crime is emerging as a serious threat. Therefore , govt. take initiative and make some provisions to prevent this crime. Along with this, librarian also have responsibility to know about sources of cyber crime as well as take initiative steps to stick away this crime from their library/institution.

References

1. Agustina, J. R. (2012, July-December). Book review of cyber criminology: exploring internet crimes and criminal behavior. *International journal of criminology, 6*(2).
2. *CYBERLAWSINDIA.net.* (n.d.). Retrieved from http://www.cyberlawsindia.net/2sides.html
3. *Department of telecommunication.* (n.d.). Retrieved from http://www.dot.gov.in/sites/default/files/itbill2000_0.pdf
4. Kumar, V. D. (2013). Cyber crime: Prevention and role of libraries. *International journal of information dissemination and technology, 3*(3), 222-224.
5. *Statista.* (n.d.). Retrieved from https://www.statista.com/topics/2157/internet-usage-in-india/

Impact Of Digital Awareness Among Research Scholars Of A.U. And AMU Central University: A Comparative Study

Anuradha Kanoujiya

Research Scholar
DLIS, NGBU, Allahabad (U.P)
Email: anuradhakanoujiya@gmail.com

Abstract: The aim of this research is develop the awareness of digital literacy among research scholars. This paper show that knowledge spectacle toward research scholars by use digital devices ,have a good knowledge,and knowing variety types of digital tools.Adopting universal use of advanced technologies such as the Internet and Digital devices.In this paper Digital awareness among research scholars of AU and AMU central University.

Keywords: Digitalliteracy, digitaldevices, awareness, digital tool

1. Introduction:

Digital literacy is one component of being a digital citizen - a person who is responsible for how they utilize technology to interact with the world around them. Digital Literacy: Tools and Methodologies for Information Society strives to define a conceptual framework for understanding social changes produced by digital media and creates a framework within which digital literacy acts as a tool to assist younger generations to interact critically with digital media and their culture, providing scholars, educators, researchers, and practitioners a technological and sociological approach to this cutting-edge topic from an educational perspective.

Need of the Study: The main need of this study is to improve the efficiency of online services and digital information used by Research scholars in familiarly and to provide effective information about use of digital devices.

Scope of the Study: The scope of the present study is confine area A.U and AMU Central university.

2. Objectives of the Study:

- To find out how many research scholars aware about digital library.
- To find out frequently use of digital device.
- To find out awareness about digital device in favor of digital literacy.
- To find out how many Research Scholars use information through Internet.

Research Methodology: In this study the investigator distributes 125 questionnaires to research scholar of A.U and AMU Central Universityand different Departments of University. 250 distributed questionnaires, 171 questionnaire respondents, AU-96; AMU-75.respondents answered the questionnaire.

In this work, I have adopted a comparative study method along with questionnaire technique for data collection. I have meet personally to each respondent and distributed 125 questionnaires each university scholars and got response 171from respondentsin this.

Table No.1: Total no of Respondent

Questionnaire	AU	%	AMU	%	Total
Distributed	125	00	125	00	250 (100%)
Respondent	96	76.8	75	60	171(68.4%)

Above table reveals that the distribution of 125 questionnaires in A.U or125 questionnaires AMU, out of questionnaires 96 (76.8 %) A.Uor 60 (68.4%) respondent form AMU.

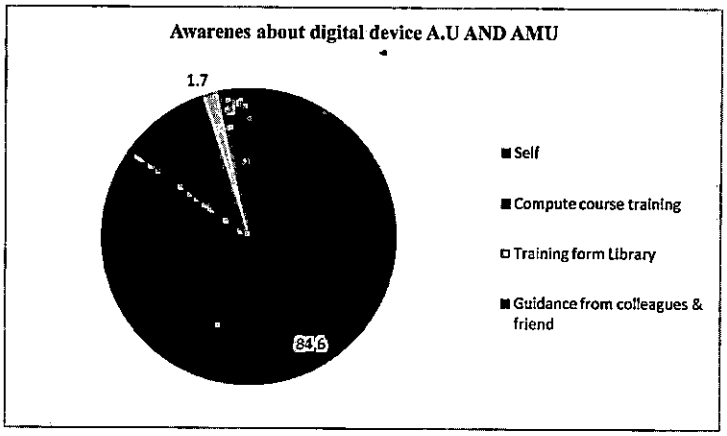
Table No 2: Awareness about digital literacy among Research Scholars

Response	AU	AMU	TOTAL	PERCENT
Yes	87	70	171	68.4%
No	9	5	17	5.6

It is reveled from Table no-2 shows that the majority of the Research Scholars (68.4 %) are to know about Digital Literacy and (5.6%) Research Scholars don't have knowledge about Digital Literacy.

Table No:3 Awareness of digital devices by Research Scholar

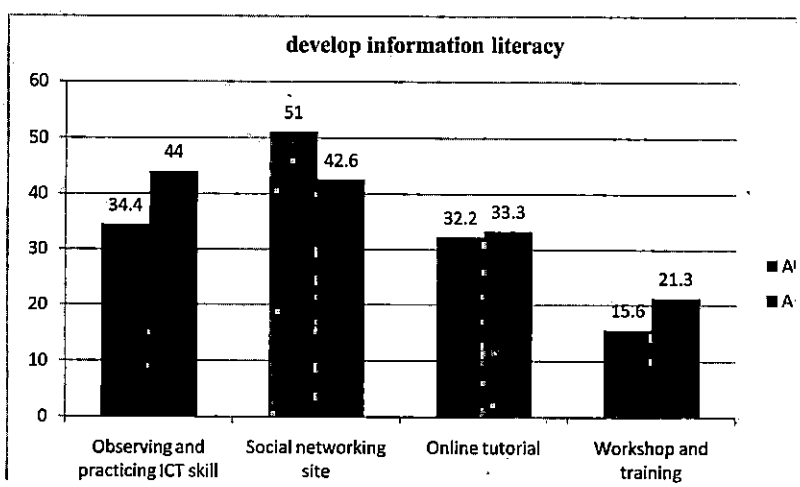
Items	AU	AMU	TOTAL	PERCENT
Aware and use	86	59	145	84.7
Aware but not use	4	13	17	9.9
Not aware	2	1	3	1.7
Not use	4	2	6	3.5



On the basis of above table (84.7%) Research Scholars are aware and use about degital device and Research Scholars aware but not useing digital device only (9.9%) Scholars are aware about digital devic but they have no knowledge about digital divice. And only (1.7%) Research Scholars don't have aware about digital divice and (3.5%)they are don't know how to use digital device.

Table No:4 shows for develop information literacy among Research Scholars

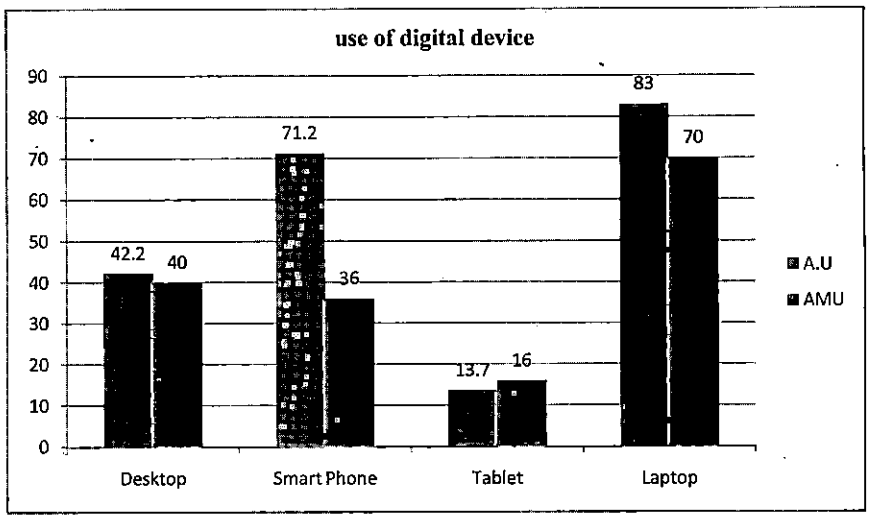
Items	AU	%	AMU	%
Observing and practicing ICT skill	35	36.4	33	44.0
Social networking site	49	51.0	32	42.6
Online tutorial	31	32.2	25	33.3
Workshop and training	15	15.6	16	21.3



This table shows that Research Scholar used Observing and practicing ICT skill(34.4%)A.U or (44%)AMU,A.U Social networking site(51%) and AMU (42.6%).A.U Research Scholars used online tutorial(32.2%) A.UorAMU(33.3%). Research Scholar usedworkshop and training only (15.6%) AU and AMU (21.3%).

TableNo: 5use of Digital Device by Research Scholars

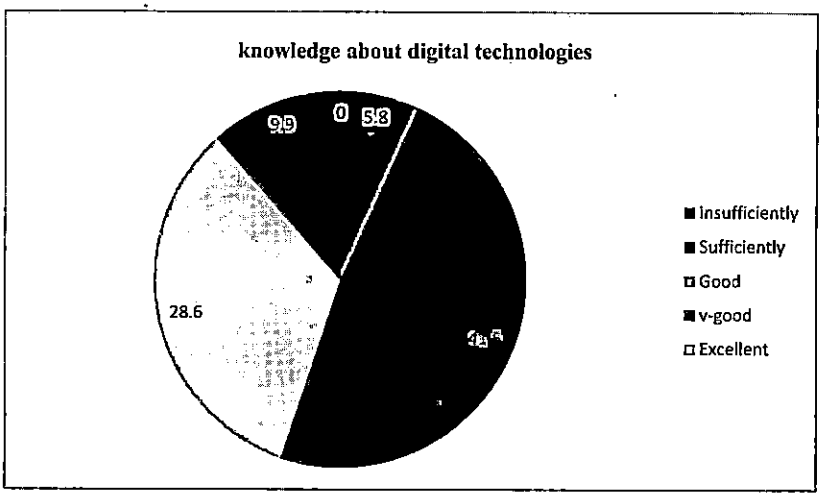
Items	AU	%	AMU	%
Desktop	42	48.2	30	40.0
Smart Phone	62	71.2	27	36.0
Tablet	12	13.7	12	16.0
Laptop	53	83	53	70.0



This table shows that Research Scholar used Desktop for research purpose mostly i.e. (48.2%) A.U, (40.0%)AMU.This table shows that Research Scholar used smart phone for research purpose only (71.2%)A.Uor (36.0%) AMU.Mostly AU Research scholar used Laptop(83.0%) or AMU (70.0%).

Table No: 6 shows have you knowledge about Digital Technologies

Items	AMU	AU	Total	Percent %
insufficiently	5	5	10	5.8%
Sufficiently	33	38	71	41.5%
Good	25	24	49	28.6%
v-good	8	9	17	9.9%
Excellent	6	4	10	5.8%



According to This table shows that 5.8% Research Scholars insufficient knowledge about digital technologies, 41.5% Research Scholars sufficient knowledge about digital technologies, 28.6% Research Scholars have good knowledge about digital technologies, 9.9% Research Scholars have v-good knowledge about digital technologies, and only 5.8% Research Scholars have excellent knowledge about digital technologies.

3. Conclusion:

Digital Literacy is being relatively a new trend in the information world. The research work was under taken to study the Digital awareness among Research scholars of A.U and AMU University: A Comparative Study. The researcher gave 250 questionnaire to the research scholars in University, out of 171(68.4 %) were responded duly filled with all the relevant information requested in the questionnaires. The finding of this study reveals that majority of research scholars are aware about Digital Literacy The trends of effective use of Digital Literacy reveals that they get daily news and information from Internet via Computer and Internet via mobile.

The students did attempt to explore the digital content sites to gain information for a specific purpose. In this study, for instance, they had to answer questions in a sequence of Internet-based tasks. They tried to locate and acquire information through multimodal forms (visual and multimedia elements) which led them to identify ideas and obtain facts. However, majority of participants could not infer the overall meanings embedded within the digital content sites and were able to identify only the surface knowledge and ideas. Hence, the students did not

evaluate the digital content sites extensively; they could not evaluate the source credibility, authenticity, reliability or currency of the digital contents. They only understood the information superficially, without understanding the le to detect underlying biases and opinions. The study will provide a significant contribution to the development of a digital literacy education framework to enhance university student's digital literacy commences.

4. Suggestions:

- It's not useful in small place because of the lack of trained guides and the absence of connectivity.
- Most or the journals something must be done that every student can enjoy the online data.
- We can improve digital literacy only by starting this course in schools so that kids know its well and how to use its.
- Digital literacy show is introduced in research program.
- To provide a computes subject in all course.
- Free digital devices and training should be provided in village introduction to digital literacy to the poor student in remote village can change the future of India.
- Please arrange one laptop for each research scholar so that we should learn more about digital literacy.
- Digital should provide materials in very normal size so that everyone can open, download at easily and short amount.
- Digital literacy should be provided every student as a part of a course only first it gives free knowledge.

Reference

1. Bawden, D. (2001). Information and digital literacy's: a review of concepts Journal of Documentation, 57(2), p218–259.
2. Glister, p. (1997).Digital literacy. New York: Wiley.
3. Nicholas, D., & Williams, P. (1998). Review of P. Glister "Digital Literacy', Journal of Documentation, 54(3), 360–362.

4. SCONUL (2006). SCONUL Seven Pillars model for information literacy, Retrieved Novembers: 30.2007.
5. Gardner, H. (2006). Five Minds for the Future, Boston, MA: Harvard Business School Press.. http://.sconul.ac.uk/groups/information_literacy even_pillars.html.
6. Martin, A. (2006a). Literacy's for the digital age. In A. Martin &D.madigan (eds.), Digitalliteracies for learning (pp. 3–25). London: facet publishing.
7. Lancaster.,F.W.(2006b). a framework for Digital literacy, digeulit working paper.ec/d.retrievednovember15,200fromhttp://www.digeulit ocs/public.asp.
8. Chiu, T.-h., & Choub, T.-L. (2012). An exploration on applying digital learning materials to information literacy class: a hybrid approach at Taipei Medical University. WCES 2012.46, pp. 605 – 611. ELSEVIER.

Authors Profile



Professional Qualification:
P.HD from Nehru Gram BhartiUniversity,Allahabad" U.P.
M.PHIL from "BabasahebBhimraoAmbedkar University" Lucknow, U.P.in 2014
M.LISfrom "UPRTU " Allahabad, U.P.in 2012
Graduation:
B.LISfrom "Nehru Gram BhartiUniversity,Allahabad" U.P. , in 2010
B.A from "Allahabad University" Allahabad, U.P.in 2007
Intermediate:
From D.P. Girls Inter College,Allahabad U.P., Affiliated to UP Board, in 2004
High School:
From D.P.Girls Inter College,AllahabadU.P., Affiliated to UP Board in 2002 Library management Office mana gement Project/Training& experience One year Graduate Apprenticeship Training in the Library Science under apprenticeship, from MotiLal Nehru National Institute of Technology, Allahabad.

Information Barrier And Constraints Faced By The Libraries In Application Of ICT And Computerization

Dr. Mange Ram

Deputy Librarian (I/C), Central Library
Dayalbagh Educational Institute (Deemed University),
Dayalbagh Agra-282005, (UP) India
Email: mram72ster@gmail.com /mram721@rediffmail.com

Abstract: The present paper explore the concept of Information Communication Technology in general and its application in libraries. The present paper also explore the barrier of information technology and their types. In the present paper author explore the opinions of some selected state universities regarding computerization process. Paper also explores the constraints faced by university libraries. Some suggestions and recommendations are for removing these constraints are made in last section of paper by the author.

Keyword: ICT (Information Communication Technology), OPAC (Online Public Access Catalogue), SUL (State University Libraries), IT (Information Technology), DOAJ (Directory of Open Journals) Computerization

1. Introduction

The invention and increasing use of computer in various fields of human activity is witness to the fact that the computer is considered to be essential component for all round development. Computer's entry and continuous in almost all field of human endeavor is due to its invincible qualities, viz, the wonderful speed to act in nanosecond, the capability to do unmanageable and impossible looking things, the unlimited capacity to store ocean of information on to tiny storage medium, immense capability to perform repetitive jobs without fatigue, the radical power to sort, arrange, retrieve and disseminate information almost instantaneously etc. The computer was invented because it was needed, and it will remain as it is needed. Day by day it is becoming more and more indispensable for the society and has influenced all fields of human activities. Its use in the library is the need of the day and its application will certainly increase the use and utility of libraries. The application of technology has had the most profound influence in making information science into an inter-disciplinary field. These developments have compelled the traditional librarian to appreciate, understand and apply new technologies which could help towards the achievement of the objective of effective and efficient transfer of information. Computers and telecommunication

technology has made information networks possible, without which international communication of information could not have been possible. Computers have been found to be extremely useful for information centers too.

Information technology (IT) is the application of computers to store, study, retrieve, transmit, and manipulate data, or information, often in the context of a business or other enterprise.[1]

The term ICT is made up of two sections Information Systems (IS) known as the application side and Information Technology (IT) known as the hardware side it is commonly used as a synonym for computers and computer networks, but it also encompasses other information distribution technologies such as television and telephones. Several industries are associated with information technology, including computer hardware, software, electronics, semiconductors, internet, telecom equipment, and e-commerce.[2]

2. Information Barrier

Today is information age and a large number of information is publishing and appearing on internet and this information may be very useful if this reach to users as right information to right user to right time. The concept of right information to right users is explored by Dr S R Ranganthan as in his five laws now many author changed 'book' in five laws to information and now websites. But right information to right users is not an easy task as there are many barriers between information and user. Some barrier are as follow:

Barriers between information and users

Unawareness barrier: Unawareness of users about service of library and their information centers is a big barrier of information

Lack of information skills: Many times users are unaware of new terminology, new technology and foreign language (they don't know translation technique and online translation).

Shortage of time: Today everything is going to in a fast running and no one have to spend much time and this create problems in using incomplete information due to shortage of time.

1 http://foldoc.org/information+technology "Free on-line dictionary of computing (FOLDOC)". Retrieved on 9th September 2017.

2 Chandler, Daniel; Munday, Rod, "Information technology", A Dictionary of Media and Communication (first ed.), Oxford University Press, *retrieved 1 August 2012*

Psychological Barrier: Many time users feel hesitation to ask any questions and queries. Shy nature users also feel hesitation in visit library and information center. Psychological barriers may be second side of library staff as many times staff do not support users and having different attitude.

Lack of resources: Lack of resources is also a powerful barrier in any information center.

Barriers in libraries[3] – lack of resources in home library, unfriendly rules in libraries, library's delays, other barriers – inconvenient open hours, arrangement and layout of the collection, poor advertisement of information sources in libraries, library anxiety; and .barriers created by authors and publishers of primary and secondary information – information overload, low quality of information, irrelevant information, unfriendly information retrieval and searching tools, publishing delay, domination of English language, other barriers, e.g. information not published.

Lack of educational level also creates a problem of barrier of information and Demographic (age and sex etc.) barrier also a barrier in information access.

3. Constraints in Computerization

In India many libraries are facing many constraints even in fully computerization of their operations and services. University libraries also working simultaneously with computerized system and manual, as they have their accession register manually and many university libraries having their acquisition system also in manual form. Most of the libraries in India having computerization of their circulation system and OPAC. An informations regarding computerization are as follow of some selected state university libraries:

In all tables the following abbreviations are used to indicate the selected state university libraries

Abbrev	Library Name	University
JNL	Jawahar Lal Nehru Library	Kurukshetra University , Kurukshetra
MDUL	MDU Library	Mahrishi Dayanand University
RMPL	Raja Mahendra Pratap Library	Ch. Charan Singh University
CLBRAU	Central Library	Dr.B.R Ambedkar University

3 https://www.researchgate.net/publication/235305981_Information_barriers_in_libraries_ Types_typologies_and_Polish_empirical_studies [accessed Nov 01 2017].

CLMDSU	Central Library	Mahrishi Dayanand Sarswati University
ACJL	AC Joshi Library	Panjab University

Table no. 3.1. Libraries provide computer for their users

Opinion	JNL	MDUL	RMPL	CLBRAU	CLMDSU	ACJL
Yes	√	√	√	√	√	√
No	---	---	---	---	---	---

Use of Information technology in libraries is now commonplace and hence no longer a controversial issue. Computer technology is the most popular and widely used technology in libraries and information centers. Computers are used for collection, organization, storage, analysis and dissemination of information. As per **table no 3.1** majority of the libraries are providing computers to their users for various purpose.

Table No. 3.2. Opinion of State University Libraries regarding Computerization

S.N	Opinion	To full extent		To great extent		To some extent		To a little extent		Not at all	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1.	Improve work conditions	3	50	2	33.3	1	16.6	---	---	---	---
2.	Increase in job satisfaction	2	33.3	2	33.3	1	16.6	1	16.6	---	---
3.	Increase variety of task	3	50	2	33.3	1	16.6	---	---	---	---
4.	More defined job description	2	33.3	2	28.5	2	33.3	---	---	---	---
5.	Longer hrs of work	1	16.6	---	---	2	33.3	2	33.3	1	16.6
6.	Remuneration improved	---	---	---	---	---	---	2	33.3	4	66.6
7.	Job security increased	1	16.6	---	---	---	---	2	33.3	3	50

As per **table no 3.2, 50%** state university libraries says that computer improves the working condition **to full extent. 50%** state university libraries say that computer has increase the variety of task **to full extent. 33.3%** say that

due to computer 'Job satisfaction is increased' **to full extent** and **33.3%** agree **to great extent. 33.3%** library's opinion that computer has increased the more defined job description **to full extent** and **33.3%** agree **to some extent. 33.3%** libraries say that computer has increase the long working hrs. **to some extent** and **33.3%** agree **to a little extent. 66.6%** libraries say that job security is not increase due to computer. **50%** libraries say that Remuneration also not improved due to computer.

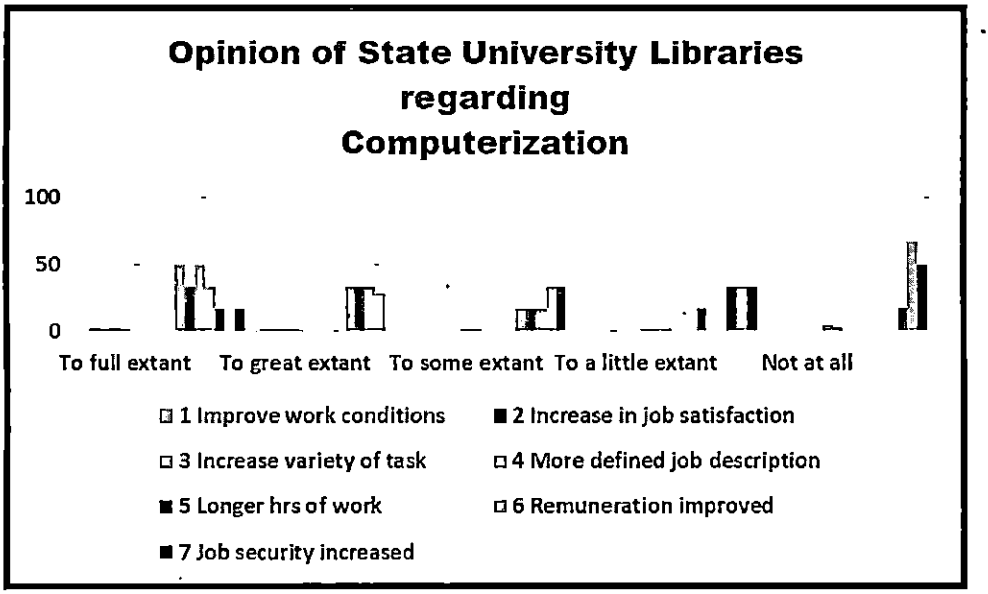
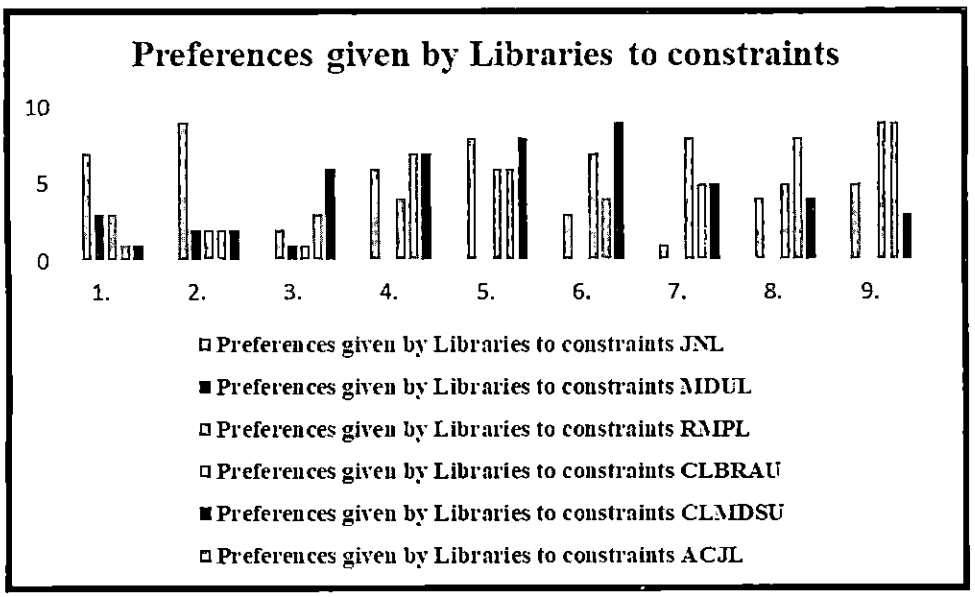


Table No. 3.3. Constraints faced by the State Universities Libraries in Computerization

S.N.	Operations/ Services	Preferences given by Libraries to constraints					
		JNL	MDUL	RMPL	CLBRAU	CLMDSU	ACJL
	Inadequate financial resources	7	3	3	1	1	NA
	Non availability of experienced personnel	9	2	2	2	2	NA
	Lack of official/policy guidelines	2	1	1	3	6	NA
	Inadequate management support	6	---	4	7	7	NA

	Lack of well accepted standard software package	8	---	6	6	8	NA
	Non availability of consultancy services	3	---	7	4	9	NA
	Resistance of Library staff	1	---	8	5	5	NA
	Un awareness of potential benefits of IT	4	---	5	8	4	NA
	Non availability of less expensive software	5	---	9	9	3	NA

As per table no 3.3 majority of state university libraries **except ACJL** are facing constraint in computerization as Non availability of experienced personnel, Lack of official/policy guidelines, non-availability of consultancy services, resistance of Library staff and inadequate financial resources etc.



4. Findings Recommendations and Conclusion

As per above table that all the libraries are using computer in their libraries and library software also but computerization status in libraries is not satisfactory.

It is recommended that state university libraries should speed up the work of computerization. Library personnel should be trained continuously to exploit the electronic information resources. The constraints faced by the libraries in computerization are inadequate financial resources and non-availability of experienced personnel. **It is recommended** here that library should appoint new employ with the computer background and request to be made for more financial assistance for computerization.

Now many useful e-resources are available on online free of cost as journals (DOAJ) on https://doaj.org and many digital books on NDL (National Digital Library of India) https://ndl.iitkgp.ac.in . Besides these many e-resources are available online and library many overcome the barriers/constraints of limited resources of their library for users. Library computerization and digitation software as OSS (Open Source Software) are also available online, library may use these software for the purposes.

For ICT infrastructure library authorities should make efforts and university should provide more financial assistance to the libraries. Library staff should be send for training of new innovations in library technology. Information barrier and computerization constraints may be overcome by the above remedies by the libraries to facilitate their users for their best satisfactions.

Information Technology & People: A Bibliometric Study

Ms. Shreya Gupta

Research Scholar
Department of Library & Information Science
Babasaheb Bhimrao Ambedkar University, Lucknow
Lucknow-226025
Email: catchshreya.gupta@gmail.com
and

Dr. Shilpi Verma

Asstt. Professor & Supervisor
Department of Library & Information Science
Bababsaheb Bhimrao Ambedkar University
Lucknow-226025
Email: shipoo_lko@rediffmail.com

Abstract: Purpose- the objective of the study is to analyze the bibliometric attributes like authorship pattern, citation patters, geographical distribution, etc. of the articles of IT and People journal published from 2012 to 2016.

Design/Methodology-the bibliometric attributes of the articles were examined page by page from 2012- 2016. Total five volume i.e. vol. 25 to vol. 29 containing 20 issues and 131 articles were studied.

Findings- The contributions of research articles are varied from volume to volume. The highest contribution was made in volume 29. Joint author contribution was 91%. This shows that the collaborative approach is prominent in the field of research in IT and People. Maximum numbers of citation were mentioned in year 2016.

Practical Implications- this study will help to frame new subscription policies for future by identifying the research trends in the subject and the core journal.

Keywords: *Bibliometrics, Case Study, Collaboration, Citation analysis, References.*

1. Introduction

The galloping growth of scientific inventions and relative literature, increased cost of written communication and shrinking library budget have made it difficult for the library professionals to cater the information needs of scientists. In this

direction a number of studies have been conducted by the information specialists to evaluate the written communication by applying mathematical, statistical and operational research technique, known as bibliometrics.

Bibliometric is a method for measuring the production and dissemination of scientific knowledge. Alan Pritchard coined the term bibliometrics in 1969 in his paper titled as Statistical Bibliography. He defined the term as "the application of mathematics and statistical methods to books and other media of communication". Later in 20th century Zipf, Lotka and Bradford observed the pattern distribution of word frequency, author productivity and journal productivity and accordingly discovered the Zipf's law, Lotka's Law and Bradford's law respectively. Derek de Solla Price and Vasilij Vasilevich Nalimov originated this discipline to provide research tools to historians and sociologists researchers.

Bibliometrics is made up of methods for conducting quantitative analysis of scientific productivity by measuring and analyzing various aspects of written documents, as it helps to monitor the growth in literature and patterns of research in the field. A bibliometric study helps to evaluate a journal by finding out year-wise distribution of articles, authorship patterns, length of articles, citation pattern, institutions' contribution of articles, geographical distribution of articles, etc.

In library and information science, bibliometrics is becoming a emerging area of research. Quantitative analysis and statistical analysis are done to describe the patters of publication in the given body of literature like to evaluate the influence of single author or to describe the relationship between two or more authors or works, to study geographic patterns of research, the extent of cooperation between institutions. Citation counts, co-citation analysis, co-word analysis and etc are the derivatives of bibliometrics.

It is done in two types of studies:

1. Descriptive Studies- bibliometric study in descriptive studies helps to measure the productive count of the research output, by counting its contributing countries, authors, geographical distribution, year of publication, and number of disciplines.
2. Evaluative Studies- bibliometric studies in evaluative studies helps to measure the literature usage count by studying the usage of body of literature by citation analysis.

Now bibliometrics is being vigorously pursued, and several view articles and books have been published on the development of bibliometrics. The first review of bibliometric impirical laws was written by fairthhorne in 1969.

Sankar and Kavitha, 2016 published their bibliometric study titled as "Asia- Pacific Journal of Management Research and Innovation, 2004-2015: A Bibliometric Study". The analysis of articles was focused mainly on year wise distribution of contributions, authorship pattern, citation pattern, length of paper, subject-wise distribution, degree of collaboration, etc.**Jain *et al.*,** 2015 has done the bibliometric analysis of Journal of Clinical and Diagnostic Research for the period between Feb - 2007 to Oct - 2014. The total numbers of articles were 601 and the study reveals that the number of articles published in 2007 were only two, which were tremendously increased to 238 articles in 2014. Majority of the articles published were from India (96.3%). Majority of the articles were contributed by academic institutions (98.4%) and the contribution by multi authors was more (65.2%). The study also reveals that the more number of articles were based on case studies (59.1%) which were followed by research studies (21.3%). **Singh, and Chander,** 2014 published bibliometric study on "Publication Trends in Library and Information Science: A bibliometric analysis of library management journal". The study analyzed the volume wise distribution of 336 articles for the period between 2006- 2012. Maximum number of articles were published in volume 27 (52) in the year 2006 and minimum were published in volume 32 and 33 (45) in the year 2011 and 2012 respectively. Majority of articles were contributed by single author (56.55%) which was followed by double author articles (29.17%), three author articles (9.22%) and then more than three author articles (5.06%). The study also revealed that during this period total 6611 citations were cited in 336 articles and out of which volume 29 shows the maximum number of citations i.e. 1205 and volume 28 shows least number of citations i.e. 763. **Panda *et al.*,** 2013 published their bibliometric study titled as "The Journal of Information Literacy: A Bibliometric Study" for the period between 2007- 2012. The main highlights of the study were like- the number of research papers were highest (51.9%) among the other types of publications, majority of contributions were from UK (71.75%), almost all papers were contributed by academic institutions (94.65%) and the contribution by single authors was more (68.7%) as compared to joint authors. **Roy and Basak** conducted a bibliometric study in 2013 as "Journal of Documentation: A Bibliometric Study". This analysis of the paper was on authorship pattern, degree of collaboration, geographical distribution of papers and citation analysis. The main finding was that majority of papers were contributed by joint authors and was from UK. The degree of collaboration is found to be 0.51. **Das,** 2012 have done a bibliometric study on the Plant Taxonomy Journal for the period between

2004 -2011. The study analyzed that the maximum number of articles i.e. 39 (18.58%) were published in the year 2008 and the minimum number of articles i.e. 15 (7.14%) were published in the year 2006 and 2010. Maximum number of contributions were from two author i.e. 105 (50%), followed by single authors i.e. 53(25.24%), three authors i.e. 37 (17.62%) and more than three authors i.e. 15 (7.14%). **Thanuskodi** presented his in 2011 study titled as "Library Herald Journal: A Bibliometric Study" for the period between 2006- 2010. The merits and demerits of the journal were highlighted through the analysis which covers mainly the number of articles published year-wise, authorship patter, number of references cited per article, subject- wise distribution of the articles, etc. **Thanuskodi** in 2010 has done a bibliometric study on "Journal of Social Sciences: A Bibliometric Study" for the period between 2003- 2007. The study was focused on the research output preferences of social scientists in social science subjects. The study analysed the number of articles, authorship patter, subject wise distribution of articles, year wise distribution of articles, number of references per article and etc.

2. Importance of Bibliometric studies:

- It helps in the quantitative analysis of science and technology performance.
- It helps in the quantitative analysis of the cognitive and organizational structure of science and technology
- It helps to know the pattern of literature and technology growth in a certain period of time
- In science and technology it helps to compare research and development productivity between two competing technologies
- It helps to identify the most active and prominent areas of the field.
- Helps the policy makers to decide the priority areas in a particular research sphere.
- To study the research trends and literature growth in a certain discipline.
- It helps to identify the types of users of various subjects
- It helps to measure the usefulness of retrospective and current awareness services.
- It helps to identify the authorship trends and patterns in articles of different subjects.
- It helps to formulate stacking and weeding policies.

- It helps to identify core periodicals in different subjects.
- It helps to study the obsolescence and dispersion of scientific literature.

Therefore, the importance of bibliometrics can be judged from the fact that it is not merely a theoretical discipline, but has practical application in library management or in measuring the quality of journals.

3. Scope and Limitation of the Study

1. The study is confined to the quantitative analysis of online journal- IT & PEOPLE.
2. Only 20 issues during the period of 2012-2016 are considered for the present study.

4. IT & PEOPLE: A Brief Introduction

It is an international journal with an agenda to publish critical, hermeneutic, ethnographic and language- focused original research and theories in information systems. The journal is ranked by ESSEC Ranking of Journal 2016 (France), The Publication Forum. It includes the researches done in the area which helps to understand the implications of information technology as a tool, resource and format for People in their daily tasks in organization or institutions. The key audiences of the journal include:

- Academicians in computer and information systems
- System developers
- Practitioners and managers of information systems in an organization
- Decision or policy makers

Significance of the study- Bibliometric analysis of the journal "IT & PEOPLE", deals with the statistical and citation analysis of bibliography to evaluate and quantify the growth and development of the subject. Therefore, this study will help to:

- To analyze the articles published issue wise in the "IT & PEOPLE" during the period 2012-2016.
- To study the authorship pattern of the papers.
- To find out the issue wise number of reference cited during the period 2012-2016.
- To study the country wise distribution of authorship.

5. Objectives of the study-

1. To study the number of references cited issue wise during 2012-2016.
2. To analyze the articles published issue wise in the "IT & PEOPLE" during the period 2012-2016.
3. To study the authorship pattern of the papers.
4. To find out the issue wise number of reference cited during the period 2012-2016.
5. To study the country wise distribution of authorship.
6. To study year wise distribution of articles.
7. To evaluate the degree of collaboration of "IT & PEOPLE".

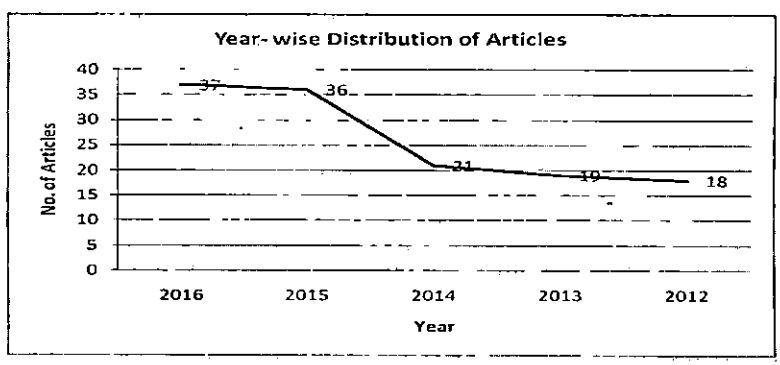
6. Methodology

The methodology used in the present study is bibliometric analysis of the IT & PEOPLE journal, in which the bibliometric attributes of the articles were examined page by page in detail from 2012- 2016. Total five volume i.e. vol. 25 to vol. 29 containing 19 issues and 120 articles were studied. The information was extracted from the IT & PEOPLE website published by Emerald Group of Publishing. MS-Excel was used to organize, tabulate and analyze the data for the study.

Quantitative and inferential methods were used for evaluating the data. Data was analysed to meet the objectives of the study. Complete count method has been followed for the analysis.

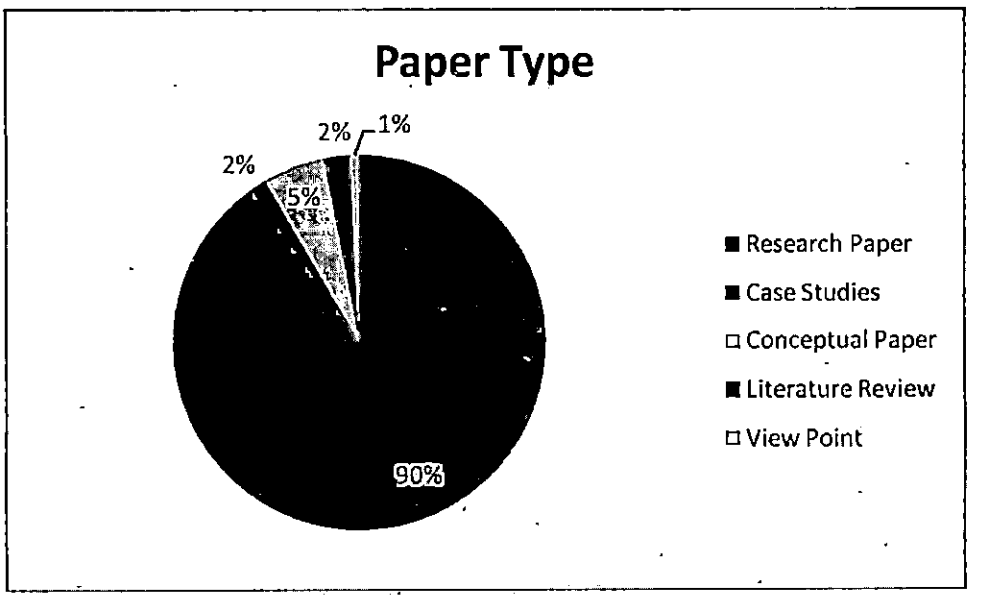
7. Analysis of Data

Figure 1. Year- wise Distribution of Articles



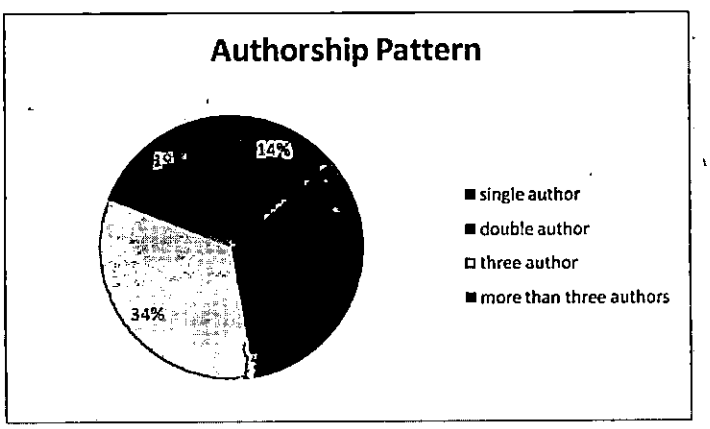
The above Fig. 1 shows that, the IT & PEOPLE Journal has published total of 131 articles during the period of 2012 to 2016. The journal on average has produced 26 research papers per year. The above table shows that the journal has produced maximum no. of articles in the year 2016 i.e. 37 (28%) and minimum in 2012 i.e. 18 (14%).

Figure 2. Paper Types of Articles



The above Fig. 2 reveals that the Research paper are highest in numbers with 118 (90%), then by conceptual paper with 7 (5%), then by Literature Review and Case studies with 3 (2%) and 2 (2%) respectively and then by View Point with 1 (1%).

Figure 3. Authorship Pattern



The above Fig.3 reveals that the authorship pattern of the articles published during the period of 2012 to 2016. Maximum numbers of articles were contributed by double and three authors with 44 (33%) and 44 (34%) articles respectively. This is followed by more than three authors with 25 (19%) articles and then by single authors with 18(14%) articles.

Figure 4. Degree of Collaboration

Year	Vol No.	Issues	No. of Authors		Degree of collaboration
			single	Joint	
2016	29	4	4	33	0.891892
2015	28	4	4	32	0.888889
2014	27	4	3	18	0.857143
2013	26	4	2	17	0.894737
2012	25	4	5	13	0.722222
Total			18	113	0.850977
Percentage			14%	86%	

The above Fig.4 shows the degree of collaboration of IT & PEOPLE, as it indicates the trends of single and joint authorship pattern of IT & PEOPLE journal during the period under study. Subramanyam in 1983 has developed the formula for calculating degree of collaboration as:

$$DC = \frac{NM}{(NM+NS)} \quad \frac{NM}{(NM+NS)}$$

DC= Degree of Collaboration

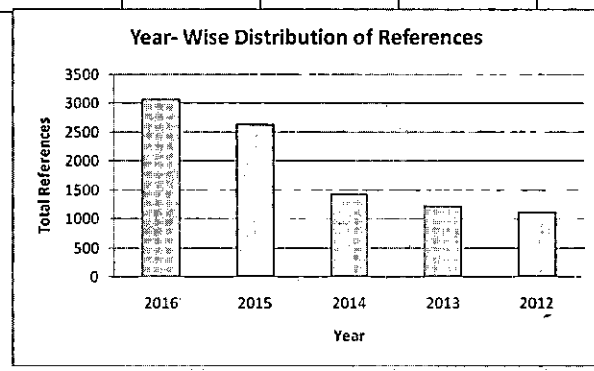
NM= Number of Multiple Authored Articles

NS= Number of Single Authored Articles

So, the degree of collaboration in the above table ranges from 0.72 to 0.89. As the degree of collaboration exceeds 0.5, therefore, the above table indicates the high degree of collaborative research in IT & PEOPLE.

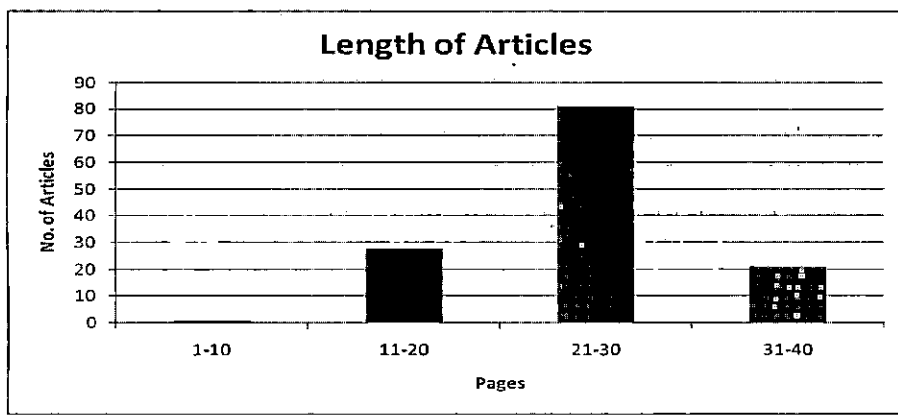
Figure 5. Year- Wise Distribution of Citations

Year	Vol No.	No. of Articles	Issue Wise Citations				Total Citations
			Issue 1	Issue 2	Issue 3	Issue 4	
2016	29	37	666	772	612	1021	3071
2015	28	36	682	577	999	371	2629
2014	27	21	355	318	424	326	1423
2013	26	19	267	329	283	345	1224
2012	25	18	309	214	339	245	1107
Total Issue wise		131	2279	2210	2657	2308	9454



The above Fig.5 shows that the maximum no. of citations was cited in the year 2016 with 3071 (32%) citation. This was followed by 2629 (28%) citations in the 2015, 1423 (15%) citations in the 2014, 1224 (13%) citations in 2013 and 1107 (12%) citations in 2012.

Figure 6. Length of Articles



The above Fig.6 reveals that the majority of articles 81 (62%) are of 21-30 pages. About 28 (21%) articles are of 11-20 pages, 21 (16%) articles are of 31-40 pages and only 1 (1%) articles are of 1-10 pages.

8. Findings

- IT & PEOPLE journal has published 5 volumes, 20 issues and 131 research articles during the period of 2012- 2016.
- The contributions of research articles are varied from volume to volume. The highest contribution was made in volume 29.
- The highest number of paper were contributed by triple author and double author which was 34% and 33% respectively, which was followed by more than three author contributions i.e.18% and then by single author contributions i.e. 14%.
- Joint author contribution was 91% and single author was 9%. This shows that the collaborative approach is prominent in the field of research in IT & PEOPLE Journal with degree of collaboration of 0.85.
- 62% of articles were of 21- 30 pages.
- Maximum numbers of citations were mentioned in year 2016.
- Highest numbers of articles were of research paper type i.e. 89%.

9. Conclusion

The main aim of the present study was to highlight the journal's significant contributions as well as its short comings in order to help the journal to make needed improvement in its editorial aspects in future and to enable it to become comparable to other scholarly journals in the field. The journal has published 131 articles during the period of study. The study shows that there is tremendous growth in number of articles per year and number of citation per year from 2012 to 2016. The maximum numbers of contributions are from triple and double authors with 44 numbers of authors in both categories. The present study also highlights that the maximum no. of articles were published in the year 2016. Majority of the articles published were of 21-30 pages. Maximum contributions were from Australia. Maximum number of citations was cited in the year 2016. The degree of collaboration was 0.85 which shows that the degree collaboration of IT & PEOPLE is high.

References

1. Anyi, K.W.U., Zainab, A.N. and Anuar, N.B. (2009). Bibliometric Study in single journals: a review. https://core.ac.uk/download/files/418/11890315.pdf. Accessed 25 June 2016.
2. Archambault, E. and Gagne, E.G. (2004). The Use of Bibliometrics in the Social Sciences and Humanities. http://www.science-metrix.com/pdf/SM_2004_008_SSHRC_Bibliometrics_Social_Science.pdf. Accessed 25 June 2016.
3. Das, H. K. (2012). Bibliometric Analysis of the Plant Taxonomy Journal Nelumbo, 2004- 2011. http://ijlis.org/img/2012_Vol_2_Issue_4/51-61.pdf. Accessed 27 June 2016.
4. EMERALD. (1967). About the journal 'Online Information Review'. http://www.emeraldinsight.com/loi/IT & PEOPLE. Accessed 29 June 2016.
5. Jain, S. and et. al. (2015). Bibliometric Analysis of Journal of Clinical and Diagonostic Research. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4437159/. Accessed 29 June 2016.
6. Panda, I., Maharana, B. and Chattar, D.C. (2013). The Journal of Information Literacy: A Bibliometric Study. http://www.ijsrp.org/research-paper-0313/ijsrp-p15122.pdf. Accessed 30 June 2016.
7. Roy, S.B. and Basak, M. (2013). Journal of Documentation: A Bibliometric Study. www. digitalcommons.unl.edu/libphilprac/945.pdf. Accessed 2 July 2016.
8. Sankar, P. and Kavitha, E.S. (2016). Asia- Pacific Journal of Management Research and Innovation, 2004-2015: A Bibliometric Study. www. digitalcommons.unl.edu/libphilprac/1382.pdf. Accessed 2 July 2016.
9. Singh, K.P. and Chander, H. (2013). Publication trends in library and information science: A bibliometric analysis of Library Management Journal. http:// People.du.ac.in/~kpsingh/wp-content/uploads/2014/03/JournalArtical1-LM.pdf Accessed 7 July 2016.

Librarian's Dilemma in Selection of Library Automation Software: Open Source *vs.* Proprietary Software

Dr. Mehtab Alam Ansari

Associate Professor
Department of Library and Information Science
Aligarh Muslim University, Aligarh
mehtabalamansari1@gmail.com

Shahwar Fatima

Research Scholar
Department of Library and Information Science
Aligarh Muslim University, Aligarh
shahwar2fatima@gmail.com

Abstract: With the introduction of Information technology libraries also started automation. In the beginning libraries started using proprietary software later open source software also came into use. Now the librarians are in state of dilemma while selection of library automation software because of availability of large number of both open source and proprietary software. This study is conducted to help librarians in selecting the library automation software. A comparison between Open source library automation software and Proprietary software is made to guide librarians in the selection of software according to the library. It is pointed out that librarians should consider the type of organisation, availability of budget, technical knowledge of employees and user involvement before selecting the software. Authors have suggested that librarians should not switch over from proprietary software to open source software as migration of data from one software to another will become troublesome.

Keywords: Library Automation, Library management software, Open source software, Proprietary software, Libsys

1. Introduction

With the advent of Information Technology (IT), libraries have also started introducing their functions using different library management software. In India, first instances of library automation have been witnessed in the last decade of the last century. During that period, usually database was created with the help of CDS-ISIS. Few libraries were also using Libsys, library automation software which has initially gained market in the absence of viable competition. However, during the 1990s, many library automation software like Alice for Windows; OPAC-

Infosys; SLIM; Library Manager; Virtua also started making presence in different categories of libraries. Significantly, all these library automation software were proprietary products. With the passage of time, Open Source Software also have installed in many sectors including libraries. Among dozens of available software, KOHA and GenLib are two most used Open Source library automation software. Of these two, the former is more popular than the latter.

2. Purpose of study

With the availability of dozens of proprietary products as well as open source software, librarians are in a state of dilemma. On the one hand, they think that they may start the process of automation without spending any money through open source software. While, on the other hand, they stuck up in between after installation of open source software with no back up support. Therefore, through this study, various pros and cons will be examined related to both types of software so that librarian community may be able to select right category of library automation software.

3. Objectives

1. To analyse the pros and cons of the proprietary and open source library automation software.

2. To help librarians in selecting between proprietary and open source library automation software.

4. Review of related literature

Dennis discussed historical perspective of library automation. He analysed the impact of IT on libraries (Dennis, 1985). Heiliger and Henderson (1973) discussed the prospects for library automation along with the several issues related to automation in different sections of library. Marsterson (1986) examined the role of the librarian, with particular reference to the impact of information technology. He refers to IT as "an ever-growing cuckoo in the nest", replacing the traditional techniques of librarianship-such as classification and cataloguing . In the mid-1980s, Adams (1986) produced a thought-provoking analysis of the issues surrounding the training and skills requirements of future information workers. Adams argues that the future librarian will need skills which are close to those of the information scientist. These might be designing and developing systems;

retrieving and integrating data to provide usable information, and the education of users. He also argues that "certain personality traits" should be sought by recruiters, and suggests that there may be a mismatch between those who are attracted to the library environment and the personal qualities which are actually required. Mehtab, Gautam and Shahwar (2016) finds out the status of library automation in prominent Indian Central libraries and provided guidelines for libraries which want to automate their services. Jasimudeen,Vimal and Biju (2012) conducted a study to analyse the use of open source software in Indian libraries and they found library professionals satisfied with the use of OSS in libraries and orientation programmes are also recommended for library professionals. Singh and Gareema analysed the open source integrated library management software by comparing library management software Koha and NewGenLib to help library professionals in choosing integrated library management software. Genoese, Lisa and Keith, Latrina (2011) describes the journey of a health science library from proprietary software to open source software. In their study emphasis is given on experiences of staff, and the challenges faced during their journey. Uzomba, Oyebola and Izuchukwu (2015) investigated the use of open source software Koha in academic libraries of Nigeria to inform about the potency and efficiency of the user. They found that the friendliness and the easy to use nature of the software will increase the result in search for information. Sujata and Jeevan (2006) analyses problems faced in evaluating the book acquisition section of Central Library, IIT Kharagpur which is using LibSys library automation software. Hilal and Mehtab Alam (2016) also conducted the study to know the status of some prominent institutes in India with regard to library automation. An overview of the automated system in academic library along with the impact of technology is presented in the work of Verbeek and Rowe (2000). Morten-Owens, Hansen and Walls (2011) organized their paper into five sections: Motivation and requirement analysis, software selection, configuration, training and maintenance. However, each section lacks description. Muller (2011) evaluated open source communities for different integrated library software on forty criteria. Subsequently, author compared the integrated library software on hundreds of features and functions. An article by Tennant(2000) has provided nine important tips for the switch to open source software. Yeh and Walter (2016) mention that there is a pressing demand for libraries to migrate from one generation of integrated library system to the next. Pankaja and Raj (2013) in their study compared the pros and cons of Open source software and proprietary software and found that proprietary software are important for computing era while open source play an important role in facilitating e-learning. Reddy and Kumar (2013) have made an overall analysis of usage open source software in libraries including its definition, features, criteria for

selection, advantages and limitations. Open source software found to be helpful in reducing the cost. They also discussed the features of some important open source library management softwares. Reddy (2013) compared open source integrated library management software Koha, Newgenlib, e-granthalaya and recommended to choose Newgenlib software for library automation as it has more advanced and enhanced features[19]. Francis (1998) analyzed the problems faced while using the library automation software and also highlighted the compatibility and suitability issues in library software selection. He recommended for establishment of an agency to continuously evaluate the software. Kumar (2016) analyzed the open source digital library management software KOHA, Avanti and Greenstone and suggested that library professionals should be trained and skilled to maintain digital libraries by using open source library management software.

5. Library Management Software

Libraries have a core set of functions that include library management such as acquisition, cataloguing, circulation, record keeping and housekeeping operations. In an automated environment these functions are being performed with the help of application software. This application software is known as library automation software or library management software. Some library software operates under peculiar Operating System (OS) while other could be installed on a variety of platforms such as Windows, UNIX, and Linux etc. Significantly, some software are tied up with the proprietary database *e.g.* Oracle or MS-SQL while majority of them uses their own and hence are bundled with the software. Web-based library management software may require a specific web server, for instance Apache, for the proper functioning of the software.

6. Some popular Proprietary library automation software packages:

Alice for Windows (AfW)

Alice for windows (AfW), an integrated library automation software package is the product of Softlink, a Brisbane based Australian company. Since its inception in 1983 in Brisbane and as Softlink Asia (New Delhi) in 1996, Softlink has grown steadily and is now considered as one of the leading suppliers of library automation software with over 17000 installations worldwide, including about 200 in India, making it only second to Libsys. The functional modules of Alice are Acquisition, Management, Circulation, Periodicals, Journal Indexing, Multimedia, Subject Authority, Web enquiry, Book hire, Multilingual, Patron self-checking.

Apart from the above, the software has a number of function-specific sub-modules such as Union Catalogue, Inter Library Loan, and Library Services etc (Softlink, 2017).

7. Libsys

Libsys is very popular library software in India having more than 1000 installations in different types of libraries. It has a contract with the British Council Divisions of South Asia, to provide automation and related services for its libraries. Libsys is an integrated Library Management Software developed in C and C++. Although the software is based on its own bibliographic database, it is available for systems using ORACLE as back-end RDBMS. Libsys provides full Graphic user Interface front end for the Windows client; it runs on a wide spectrum of hardware and operating systems, using UNIX, Linux, Windows NT and Novell Netware Operating System on the server side, having any version of Windows at the client side. Thus in choosing operating platform, users find greater flexibility in comparison to other software. Libsys is built around its own centralized Bibliographic database based on MARC format supporting various types of materials in print as well as non-print. The cataloguing data entry also accepts data in standard machine readable formats such as USMARC, OCLC etc., thereby facilitating import and export of bibliographic data in both MARC and non-MARC formats. Acquisition, Cataloguing, Circulation, Serial Control, Article Indexing, Online Public Access Catalogue (OPAC) are functional modules in Libsys (Libsys, 2017).

8. Virtua

Virginia-Tech Library System (VTLS) Inc. specializes in library automation and information management solutions with corporate office located at Blacksburg (Virginia), USA and having offices in many countries including India. VTLS is the first Library Automation vendor that has received ISO certification in 1997. VTLS Inc. has developed an Integrated Library Systems known as 'Virtua' with more than one thousands libraries as its user covering thirty five countries of the globe. Virtua Library Software package is a Windows based Client/Server application. The Virtua software is based on six key technologies: Relational Database Management Systems, Rapid Development Tools. Three tier Client/ Server Architecture, Database Warehousing, Unicode support and ATM Network optimized applications. These technologies facilitate handling data management, software development and network delivery. Support of Unicode, Multilingual dialogue, access to external tools such as OCLC, RLIN, unique data entry templates,

adherence to a variety of international MARC formats are special features of the cataloguing module of Virtua. The functional modules of Virtua are Acquisitions and fund accounting , Cataloguing, Circulation, Serials Control, OPAC, Statistics and Reporting, Chameleon Gateway (VTLS, 2017).

9. Popular Open Source Software

Koha

Koha is a full-featured open-source ILS. Developed initially in New Zealand by Katipo Communications Ltd and first deployed in January, 2000 for Horowhenua Library Trust, it is currently maintained by a team of software providers and library technology staff from around the globe. Koha is the first open-source Integrated Library System (ILS). In use worldwide, its development is steered by a growing community of libraries collaborating to achieve their technology goals. Koha's impressive feature set continues to evolve and expand to meet the needs of its user base. In use worldwide in libraries of all sizes, Koha is a true enterprise-class ILS with comprehensive functionality including basic or advanced options. Koha includes modules for circulation, cataloging, acquisitions, serials, reserves, patron management, branch relationships, and more. Koha is built using library standards and protocols that ensure interoperability between Koha and other systems and technologies, while supporting existing workflows and tools. Koha's OPAC, circulation, management and self-checkout interfaces are all based on standards-compliant World Wide Web technologies XHTML, CSS and Javascript making Koha a truly platform-independent solution. It is an important part of the open-source promise that there is no vendor lock-in: libraries are free to install and use Koha themselves if they have the in-house expertise or to purchase support or development services from the best available source (KOHA, 2017).

10. NewGenLib

NewGenLib is an integrated library management system developed by Verus Solutions Pvt Ltd and the Kesavan Institute of Information and Knowledge Management in Hyderabad, India. NewGenLib version 1.0 was released in March 2005. On 9 January 2008, NewGenLib was declared Open Source Software under GNU GPL Licence by Verus Solutions. NewGenlib includes modules for Acquisition, Technical Processing and database development, Circulation Control, Online Public Access Catalogue, Serials Management, Administration and system

setup (NewGenLib, 2017).

11. Evergreen

The Evergreen Project develops an open source ILS (integrated library system) used by approximately 1,800 libraries around the world. Evergreen is used by libraries to provide their public catalog interface as well as to manage back-of-house operations such as circulation (checkouts and check-ins), acquisition of library materials, and (particularly in the case of Evergreen) sharing resources among groups of libraries.

The Evergreen Project was initiated by the Georgia Public Library System in 2006 to serve their need for a scalable catalog shared by (as of now) more than 275 public libraries in the state of Georgia. After Evergreen was released, it has since been adopted by a number of library consortia in the US and Canada as well as various individual libraries, and has started being adopted by libraries outside of North America (Evergreen, 2017).

Table 1: Proprietary and Open source Integrated Library Software

S. No.	Proprietary Integrated Library Software	Open Source Integrated Library Software
1.	Usually quite costly	Maintenance cost is affordable
2.	Source code is confidential thus changes are not possible	Source code is not confidential thus changes are possible
3.	Successive versions may or may not release at regular intervals	Successive versions are released at regular intervals
4.	Vendor support during and after installation	No vendor support
5.	Due to after-sales support, there is no stress on library staff for trouble-shooting	Any break down lead to considerable stress
6.	Training to staff is provided by vendor	No effective training facility
7.	Communication between consultants from vendor and library staff acts as catalyst to meet goals	No effective communication
8.	Data migration is done usually in the supervision of vendor	Data migration is usually marred by problems

12. Discussion

In the following paragraphs, discussion will be made around some pertinent points with regard to selection criteria of the software:

13. Type of Organization

Types of organization should be taken into consideration while selection process is done. If an organization can afford the cost, then librarian should not hesitate to go for proprietary product. In this case, vendor will be responsible to complete the installation process. Furthermore, representative from vendor will also demonstrate installation process before the librarian and in charge of automation. Learning installation procedure is must as software is required to install on a different computer in future. Moreover, vendor should also demonstrate server as well as client installation procedure. On the other hand, organizations which could not afford to buy proprietary library software may consider installing open source software. But they must install the software where trouble shooting is possible. Once software is in use, problems are bound to crop-up.

14. Budget Availability

Almost any library that chooses open-source software will cite cost as one of the primary reasons (Singh, 2013). However, in some of the libraries a certain amount of budget can be earmarked for the purchase of library automation software. However, Budget availability does not mean availability of funds for the installation and commissioning of the software. Rather, authority should check the availability of funds required for Annual Maintenance Support which ranges from 10% to 20% of the total cost of library software depending upon the vendor terms and conditions. And, in case of non-availability of this recurring fund, there is no point in burning fingers with proprietary product. Bissel (2008) shares money was the main reason that the Complementary and Alternative Medicine Library decided to migrate to Koha. Dykhuis (2009) in his paper also explains that many libraries in America have installed Evergreen, open source software due to budget constraints. It is, therefore, recommended that librarian must assure the availability of funds so that staff as well as user should not face any problem due to any halt in the project.

15. Technological know-how of Employees

Staff involvement is considered as a main success factor in the implementation process of the library automation project (Yeh and Walter, 2016). Against this statement, it may be recommended that if any library has staff with competence in information technology, they can go ahead to install open source software. It is almost certain that some or the other problem is bound to occur, nevertheless, it is expected that library staff having proficiency in information technology will be able to trouble- shooting purpose. On contrary, if staff is not proficient enough in handling technical problems, it is strongly recommended that library should select proprietary product to enable them to receive back up support from vendor.

16. User Involvement

User satisfaction is the key for the consideration of a successful project. To achieve that, one of the options is to involve users right from the beginning of the project as noted, 'when end users are involved in decision relating to system selection and implementation, they are more invested in and concerned with the success of the system, which in turn leads to greater system use and user satisfaction (Baronas and Louis, 1988)' (Esteves, Pastor, Casanovas, 2004). Significantly, it is one of the most cited critical factors in implementation success (Al-Fawaz, Al-Salti and Eldabi, 2008). However, another aspect which is needed to be looked into selection process is that which type of user a particular library has. In an academic library, usually user community is more tolerable and may not create any problem in case OPAC is not functional due to some technical faults for sometimes in the absence of technical support provided by vendor. On contrary, this situation does not apply for Public Libraries where a wide range of user category exists and some of them may lose temperament within short span of time. Against this backdrop, selection of software should be done with more assured post-installation technical support.

17. Conclusion

Library automation project requires ample amount of money. Besides, finance required purchasing hardware; money is also required in the acquisition of library automation software. India is a developing country and a very small amount of budget allocated every year for education sector. Unfortunately, libraries are not given high priority to modernize in India. Therefore, most of the libraries are not in a position to install proprietary library software which is beyond the purchasing capacity of these libraries. However, these kinds of libraries may choose open

source software to start automation process. But, these libraries need to consider some other factors besides budget constraint such as technical know- how of staff, types of user etc. Moreover, authors also advise through the present study that switch- over from proprietary software to open source software should be avoided as it brings hassle particularly in migration of data from one software to another.

References

1. Dennis, R., (1995). Library Automation: Issues and Applications. New York: R. Bowker, 43-44 & 403.
2. Heiliger, E. M., Henderson F. (1973). Library Automation: Experience, Methodology, and Technology of the Library as an Information System. New York: Mc Graw-Hill.
3. Marsterson, W. (1986). Information Technology and the role of the librarian. Beckenham: Kent.
4. Adams, R. Staffing. (1986). Requirements in Information technology and libraries: A future for academic libraries. Beckenham: Kent
5. Mehtab Alam Ansari, Gautam, J. N. and Shahwar Fatima. (2016). Automated Circulation Systems in Indian Institutes of Higher Learning. Indian Journal of Library and Information Science, 10 (3), 245- 253.
6. Jasimudeen, V. & Biju. (2012). Adoption and User perceptions of Koha Library Management system in India. Annals of Library Information Studies, 59, 223-230.
7. Singh, M. & Sanaman, G., Open source integrated library management systems Comparative analysis of Koha and NewGenLib. Electronic library, 30 (6), 809-832.
8. Genoese, L. & Keith, L. (2011). Jumping Ship: One Health Science Library's Voyage from a Proprietary ILS to Open Source. Journal of Electronic Resources in Medical Libraries, 8(2), 126–133.
9. Uzomba, E., Oyebola, O. J. and Izuchukwu A. C. (2015). The Use and Application of Open Source Integrated Library System in Academic Libraries in Nigeria: Koha Example. Library Philosophy and Practice.

10. Sujata, M. & Jeevan V. K. J. (2006). Constraints for evaluation of acquisition operations and supplier performance using LibSys. Annals of Library Information Studies, 53, 126-133.
11. Hilal, M. Mehtab A. A. (2016). Library Automation in India: an Evaluative Study. Delhi: Ane Books.
12. Verbeek, O. & Rowe, C. (2000). The Future of Automated Systems in the Academic Library. Journal of Educational Media & Library Sciences, 38(1), 1- 21.
13. Emily, G. Karen L. & Ians W.(2011). Implementing open-Source Software for three Core Library Functions: A stage-by-stage Comparison. Journal of Electronic Resources in Medical Libraries, 8(1), 1-14.
14. Muller. (2011). How to choose a Free and Open-Source Integrated Library System. OCLC Systems & Services: International digital library perspectives. 27(1), 57-78.
15. Roy, T. (2000). Technology Decision-Making: Guide for the Perplexed. Library journal, 125(7), 30.
16. Yeh, S. & Walter, Z. (2016). Critical Success Factors for Integrated Library System Implementation in Academic Libraries: A Qualitative Study. Information Technology and Libraries, 35(2), 27-42.
17. Pankaja, N. & Raj P. (2013). Proprietary software versus Open Source Software for Education. American Journal of Engineering Research, 2(7), 124-130.
18. Reddy, T. & Kumar, K. (2013). Open source software's and their impact on library and information centre: An overview. International Journal of Library and Information Science, 5(4), 90-96.
19. Reddy, C. (2013). Comparative study of free/open source integrated library management systems (fosilms) with reference to koha, newgenlib and e-granthalaya. E-Library Science Research Journal, 1 (12), 2319-8435.

Authors Profile



Dr. Mehtab Alam Ansari is working as an Associate Professor in the department of Library & Information Science, Aligarh Muslim University. He has authored two books, co-edited two books and has also contributed several chapters in the books published from India as well as abroad. In addition to these, he has contributed twenty six research papers and sixteen articles in various national and international journals, magazines and prominent national dailies. He has supervised three doctoral theses, two M.Phil dissertations and more than fourty five MLISc dissertations besides participating and presenting papers in the conferences. Previously worked as an Assistant Librarian in Dr. Zakir Husain Library, Jamia Millia Islamia, New Delhi. He has also been associated with internationally reputed companies such as VTLS, Softlink and Libsys in different capacities. As an employee of VTLS, he has also received advanced level training on Virtua software at Blacksburg, USA. His area of interest includes library automation, digital library, application of ICT in libraries and academic library system.



Shahwar Fatima is a research scholar in the department of Library and Information Science, Aligarh Muslim University, Aligarh. She has contributed papers in journals and has also written book chapters. She has also participated in many International and National and seminars, conferences and workshops.

Libraries and Mobile Technology

Dr. Amit Mittal

Deputy Librarian,
BKSN Library,
Punjabi University, Patiala

Abstract: As the ICT revolution continues to unfold, libraries are experimenting with mobile technology and services to support the information needs of their users wherever they may be. The adoption of mobile technology has greatly affected the traditional relationships between libraries and their readers. At the same time, the proliferation of mobile devices and services raises issues of access to information in the digital age, including content ownership and licensing, and accessibility. This paper is an attempt to explore some of these issues, and is intended to stimulate further discussion and analysis.

"It's not the strongest that survive, nor the most intelligent; but those most responsive to change."- Charles Darwin

The survival of any organisation is very comparable to human evolution. "Survival of the fittest" term given by the great biologist Charles Darwin is a simple fact of life for every organisation, no matter how forward it is during its golden years. No organisation is safe from the generational shifts that occur naturally over a period of time. The most common shifts that the academic libraries are undergoing and need to take care include:

Technology Shifts –the effect of new technologies on the traditional ones.

Global Shifts –Competition with new and stronger organisations

Cultural Shifts –the changing needs and demands of new Generation users.

Legislative Shifts –the new rules and regulations that government and management bring in each year

Although we cannot stop the future impact of these cultural shifts, we can control and influence certain other factors. There are four key actions that librarians should take in order to stay relevant, fresh and up to date:

Re-calibrate: librarians should keep on asking themselves if their organisation is still on the right path and heading in the right direction. They should focus on what kind of services their libraries are providing to readers.

Re-engineer: This is right time for the librarians to turn off autopilot and

deconstruct their current practices.

Re-frame: they should see things from a new/different perspective. The easiest way to do this is to take advantage of a fresh set of eyes i.e.new employees can be a great source for re-framing.

Re-position: They should not afraid to alter their libraries as the needs of the change. They should keep stick to their goals, but sometimes transformation is necessary.

People who change after change will survive, people who change with change will succeed and the people who cause the change will lead.

1. The Role of the Internet in day-to-day life

Mobile technology has not only brought the Internet into our daily lives but also enabled us to the retrieve and broadcast information from anywhere and at any time. This mobile technology has bridged the gap of space as well as time.

Mobile computing and communication services are spreading rapidly. Mobile devices today can run complex software, interact with cloud services, play multimedia rich contents, and allow advanced level user interaction. New hardware and software technologies such as Bluetooth, multi-touch screens, text messaging, smart phone software applications, mobile websites, global positioning systems (GPS), wi-fi, and media creation and capture tools, are all part of mobile environment. Many of today's mobile devices are "always on," mode which means, by default connected to a wireless network.

With advancement of new mobile and communication technology, most of the library users have smart phones with data pack or connected with wi-fi networks. There are few places where users are truly disconnected from networks. Thus, mobile devices can send and receive information instantly. Mobile technology provides wide range of applications in our daily lives. It is increasing access to timely medical information during an emergency; providing immediate information on product reviews and pricing; facilitating the sharing of information in a crisis or natural disaster; and even enabling citizens to report traffic problems, potholes, or downed power lines to community officials in real time. Mobile devices have made our lives more convenient by providing access to useful information such as weather forecasts, bus schedules, bank accounts, and grocery lists. They make commutes or other downtime enjoyable by providing on-the-go access to entertainment, such as e-books, games, podcasts, and streaming video. They keep their users connected with family, friends, and co-workers through e-mail, text

messaging, and access to social networking applications. They have expanded capabilities for teaching and learning, providing access to rich multimedia resources and student-centred mobile applications.

2. Role of Mobiles in Providing Extended Library Services

Libraries can better serve their users better by embracing mobile technology. They can promote and expand their existing services by offering mobile access to their websites and online public access catalogues (OPACs); by supplying mobile reference services; and by providing access to e-books, journals, video, audio books, multimedia content, and many other things on mobiles.

Mobile devices and services provide remarkable flexibility for those who wish to take advantage of library services. By using mobiles, a user while lying on his/her bed can access e-books and multimedia content via his/her local library. Providing content on demand and making it unnecessary to maintain a local copy of the material. By going mobile, a library can take a giant step toward becoming a 24 X 7 service.

The mobile environment can also offer new venues for teaching digital literacy skills to youth as well as adults, and aid libraries in their outreach as educators and e-government access portals. Through the continued adoption of mobile technology, library services can potentially engage traditionally underserved groups as well.

3. Application of Mobile Technology in the Libraries

Mobile technology finds a wide range of applications in the libraries. Some are as follows-

SMS alert services

Now a day most of the Library automation software provides option to send SMS alerts for reserved items, due items to users. e.g, LibSys 0.7. For this, the librarians need outsource the contract to a vendor to send alert services. Following are some ways to send SMS from libraries

Plug-ins integrated with library email system to enable email to SMS messaging.

Send SMS to collect the requested books

Reminding the user if, book is due in his/her account; informing user about the exact fine.

Acknowledging about renewal of a book

Informing the user to collect the book/books, he/she had reserved

Opening and closing hours of the library

4. Suggest a purchase

Librarian can receive the suggestions from the users sent via mobile phones. In such cases users need not to visit the libraries and write the requirements in a register.

5. Location with in the library

Users might be provided with virtual tours of the library sections and their services. e.g. Library of Congress provides an application prepared for the iPhone users which gives a virtual tour of Library of Congress that mirrors the main reading room, the great hall, the bible collection etc.

6. Audio/Video Tour

Libraries even can provide audio/video tour of a library. For example, University of Limerick library, Ireland provides audio guidelines to the library users .

7. Addition of New Titles

Mobile gadgets can be used to disseminate the information about newly acquired documents which are of irrespective of forms. i.e Current Awareness Service (CAS)

8. Image Services

The Image Services in a library might offer a number of high quality, fee based photographic and document imaging services including digitized photographs, diagrams, maps, photos of places of national importance. .

9. Research consultation and instruction

It is a kind of customer care service. Research scholars may have an interaction with the library staff to get the consultation and get suggestions via mobile phones.

10. Selective Dissemination of Information (SDI)

Like CAS, SDI can be provided to the users by SMS alert or via email service. For this library has to create different groups along with their particular interests and tag the items of their interest. Once the new item is acquired by the library, an email or SMS is automatically sent to the group members regarding that item.

11. OPAC Service

Libraries can provide their catalogue on the mobile devices.Through OPAC, users can search their documents and can get the status of particular item even sitting anywhere.

12. Journal finder

Library Journal Finder provides access to full text journal, magazine, and newspaper content as well as links to titles held in print. For instance, American University library has providing option to search journals through mobile phones.

13. News and Events

Information on job openings, varieties of scholarly competition, library events such as orientations program, stock verification, book recall, lectures on special topic, news in relation to scholarly work, awards and so on can be given using mobile devices in order to update the user's knowledge Short messages regarding the library events and news can be sent to the users personally.

14. Reference service

Library users can ask librarians anything through the live chat and texting with mobiles. The reference services can be provided with the help of sending and receiving SMS. Immediate feedback is also possible from the user's side.

15. Addressing New Issues Raised by Mobile Technology

Some issues generated by the mobile environment are new to the library community. Many of the aspects of mobile devices that make them powerful—such as pervasive connectivity, location awareness, and close integration with social networks and online profiles, need careful study. Mobile devices and

services deliver or interact with digital content that is more easily tracked and associated with individual users than other forms of information. Furthermore, the relationships between librarians and their users are changing as client access content and services online. The continued evolution from primarily physical, in-person interaction with patrons and content to increasingly virtual, digital, and mobile interaction creates unique challenges for libraries.

16. Privacy Concerns

Mobile devices create privacy concerns that do not arise in the physical environment because there are limits to the tracking of physical content. In the past, patrons had to travel to their local library to access the card catalogue, check out books and other materials, interact with librarians, and participate in library events. Although they had to take the time to get to the library building, they could use the library services with a reasonable amount of anonymity. Libraries have developed strong privacy protections for their users, especially borrowing records. When users check out physical media such as books, magazines, or multimedia materials, they can be assured that the library will not reveal their circulation records or other personal information. Furthermore, the nature of the material—the physical book, magazine volume, or DVD—prevents the library or other entities from collecting much additional information about how the material was being used.

Information technology, by contrast, offers the nearly limitless ability to capture information on both users and uses of content. Although most of the data networks are relatively secure, and most libraries are taking care to secure their wi-fi networks, but the pervasive connectivity of many mobile devices makes them capable of collecting and transmitting data on how content is being consumed and by whom. Many e-book readers have the capability to report back information about users' reading habits and search queries. The same services could be compelled to share collected information with law enforcement or sell the data.

A user of a library service who feels that he or she is being monitored may not pursue particular lines of inquiry. Users need to feel assured that their reading and research are not being tracked. With increasingly powerful digital technologies, libraries—or more likely the third-party content vendors with which they partner—have the capability to ascertain which digital media are being lent and for how long, as well as how long a user actually views each element of the content.

17. Lack of personal touch

The diversity and richness of library resources are on full display within the physical library building. There, users can speak with librarians, browse the stacks, and use desktop computers for any information. Because of practical considerations—such as connectivity, hardware, and mobile interface design—the library experience through mobile technology has not yet reached this level of interactivity and connectedness. Additionally, librarians rely on facial expressions or voice tone when interacting with most users. They can also physically show a user where a particular resource is located Telephone and e-mail interactions with patrons likewise involve familiar channels for effective communication. These types of observational and situational signs and processes are not available in mobile interaction.

18. Addressing Ongoing Issues in Digital Content

In some ways, the policy issues that arise relative to the broad adoption of mobile technology and services in libraries are issues libraries have been addressing in relation to digital content generally, such as digital content licensing, rights under the first-sale doctrine, and digital rights management (DRM). In fact, the explosion of mobile technology may require the library community to deal with these issues even sooner than already expected.

19. Legal and Technical barriers to Digital Content

The nature of digital information changes with the ways of libraries operations—collection, display, preservation, and lending of materials to users and providing access to information. Ownership and control of access to digital information pose major challenges for the implementation and adoption of mobile devices and services within libraries. Traditionally libraries were purchasing items and lending them under the first-sale doctrine of copyright law. But now they have to rely more on third-party vendors that negotiate access to digital content via a license, the promise for mobile technologies to provide imaginative access to information may be limited.

20. Implications of Outsourcing

The outsourcing of e-books, audio books, movies, and other multimedia content presents both benefits and challenges to libraries. With schools, colleges, universities, and public libraries facing severely constrained budgets, only

the largest and most financially stable library systems have the resources to maintain in-house a full array of technical services, including the online public access catalogue (OPAC), data store, e-mail, and web servers. However, while the outsourcing of these services appears to be a good idea for most libraries—leaving the basic technical work in the hands of the true experts—the handing over of control can have negative consequences for library users. As the price of online storage continues to drop, libraries will likely entrust more of their information and user data to the cloud. To be sure, professionally hosted cloud services provide expertise and redundancy that many libraries lack the technical support staff to offer. At the same time, however, concerns about data privacy will increasingly be tied to our trust of cloud computing.

Finally, a drawback to most digital content distribution models is that libraries do not own the content that is being served by the intermediaries. Librarians take seriously the professional responsibility to collect, describe, organize, and preserve materials. However, "forms of information access such as pay-for-view which are purely commercial, ephemeral, and brokered outside of the library do not benefit from any of these important functions." Some argue that current distribution models that essentially "create scarcity where none exists" are contrary to a library's mission.

Technology will continue to impact every area of the library, from orientation to user instruction to marketing, as students increasingly move toward the Internet capable handheld devices. The academic library then must determine how to flawlessly integrate the technology in a value-added manner without neglecting those users who do not own or intend to purchase such devices.

References

1. Automation of Libraries in Education and Research-CALIBER 2009, held on 25-27 February, 2009 organized by INFLIBNET centre, at Pondicherry University, Pondicherry.
2. Hahn, J. and Morales, A. (2011), "Rapid prototyping a collections-based mobile way finding application", Journal of Academic Librarianship, 37 (5), 416-22.
3. Mohan Lal Vishwakarma IJECS. 2 (6) June, 2013. 1799-1805
4. Khare,N. (2009) libraries on move: library mobile application .in: 7th in-

ternational convention on Libraries on Move: Library Mobile Applications. NidhiKhare. International CALIBER-2009, Pondicherry University, Pondicherry, February, 2009. 25-27

5. Kumar, Vimal. & Chithra, S. (2008). Innovative use of SMS Technology for the excellence in library services of Kerala. In IASLIC 23rd National Seminar On Library Profession in Search of a New Paradigm, Bose Institute, Kolakata, December 10-13, available at: http://eprints.rclis.org/bitstream/10760/15228/1/Innovative%20use%20of%20SMS%20technology%20for%20the%20excellence%20in%20library%20services%20in%20Kerala..pdf
6. Smith, A. (2011), "Smartphone adoption and usage", Pew Internet & American Life, available at: www.pewinternet.org/,/media//Files/Reports/2011/PIP_Smartphones.pdf
7. Washburn, Bruce. 2011. "Library Mobile Applications: What Counts as Success?." Information Outlook. 15 (1) (January/February).



Dr. Amit Mittal presently working as Deputy Librarian in Bhai Kahn Singh Nabha Library, Punjabi University, Patila, obtained his Ph. D in LIS from Punjabi University Patiala. He has contributed many research articles in the peer reviewed journals of International repute. He has participated and contributed research papers in several national and International Conferences. He is life member of PLA and currently he is Treasurer of Punjab Library Association.

E-mail: amitmittal96@gmail.com

Library Services for Visually Impaired Persons: A Need Of Time

Madhu Bharti

Research Scholar
DLISc, Bundelkhand University, Jhansi
Email: bhartim451@gmail.com

Mohit Gupta

Student
DLISc, Bundelkhand University, Jhansi
Email: mohitg1407@gmail.com

Sheel Bhadra Yadav

Research Scholar
DLISc, Bundelkhand University, Jhansi
Email: sheelyadav1990@gmail.com

Abstract: This paper discuss about the library services and how to provide in a well formed way to visually impaired persons and about the recent development in information management and in innovative services its main aim of providing library services about the users who cannot make use the traditional printed materials. It means to single out trends regarding the subject, why suggesting ways to improve the above said services libraries have started to serve every kind of reader, including those with visually challenged. This paper also shows the statistics of users and their literacy rate in India.

Keywords: Sugamya Pustakalaya, Punarbhava, Braille Atlas, Braille Library & Assistive Technology.

1. Introduction

Libraries plays a fundamental role in development of society, the resources and the services that offers, create opportunities for learning, support literacy ,education and helps in shaping the new ideas and perspectives that are centers to a creative and innovative society. Libraries represent different things to different people, it forms a place where mothers can take todders to read their first stories and to students can study, to a service allowing anyone to borrow a book, access the internet and in literature search. Quite simple libraries offer a means by which patrons can gain access to knowledge (Ben White, 2012). Information is essential to all human being and every library's aim is to provide the right information at

the right time and in the right format to its patrons regardless of race, religion, age, sex, nationality and language. Every user is equal for library.

Library are the light house of information dissemination, an important component of any educational institution and hub of learning activities where students, researchers and teachers can explore the vast amount of information resources. The present age is regarded" as the age of information" , Due to the Information Explosion the user wants to access all the literature rapidly to gather knowledge and also in their day to day need for improving living standard. So We can say that libraries and information centers (LISc) are playing vital role in the development of society by acting as a bridge between user and their desired information and this information that, provide by library is reliable, quick and helpful to the users.

2. Library and Visually impaired user

Library have to play a key role in building an "inclusive society" serving all kinds of users included which have a visually impairment. According to Machell (1996) the ideal library service is one where each individual regardless of the degree of visual impairment has access to the materials and information at the time they are required, in a format that can be used in the quantities that are needed and where the needs of the users can be understood by the staff, blind people and those who visually impaired traditionally read Braille script, audio books and large print books i.e. large in font size, produced and provided by specialized libraries for the blind, visually impaired and to other special users. For the library every user is equal and to make this equality, libraries should treat these users with some special measurement and technique. The Visually Handicapped Room of Bilkent University Library contains Braille resources, tape recorders computers, and a printer suitable for visually handicapped users (Fig.1) . Users can search library resources on these computers, can print Braille texts, and can use the Internet, these services for visually handicapped are providing in many libraries of the world in which Central Library of Jawaharlal Nehru University is one.



3. Current Scenario in India

Government of India, Ministry of Human resource development, Department of education (2005) in its action plan for inclusive education of children and youth and disabilities has mentioned its goal as "Recognizing education for all children as a fundamental right, to ensure the inclusion of children and youth with disabilities in all available mainstream education settings, by providing them with learning environment that is available accessible, affordable and appropriate to help develop their learning and abilities. According to the census of 2011, In India there are 50,32,463 persons visually impaired and among them 26,55,609 are literate and 23,77,822 are illiterate (fig.2) this shows that if the good education services will arranged for these special kind of users the literacy rate can be increased that's why library and information services for visually impaired persons is need of time.

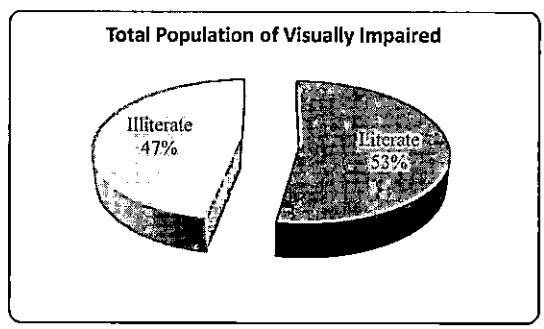


Fig.2

India has also provided all possible support to the persons with disabilities either by enacting a special act or by executing a National Policy for Persons with disabilities, or by way of providing reservations in education, employment, government schemes and programs or by establishing institutes and organization and many more. In addition to the legal framework, extensive infrastructure has been developed including the National Institute of visually Handicapped, Dehradun.

The government of India has enacted three legislation for persons with disabilities

1. Persons with disability (Equal opportunities, protection of rights and full participation) Act, 1995; which provides some special treatment for education, employment, created of barrier free environment, social society etc.

2. National trust for welfare of persons with autism, cerebral palsy, mental retardation and multiple disability Act 1999, has provisions for legal guardianship of the four categories and creation of enabling environment for as much independent.
3. Rehabilitation Council of India Act, 1992 deals with the development of manpower for providing rehabilitation services (MSJE 2009).

University Grant Commission is supporting universities and colleges of India by encouraging special education activities to empower differently disabled persons. The UGC had the scheme of assistance to universities and colleges of higher education, for persons with special needs.

4. Sugamya Pastakalaya: An online library for persons with visual impairment

Sugamya Pastakalaya is a step towards an accessible digital India" (An online library for persons with visual disabilities) was launched by Sri Ravi Shankar Prasad, Ministry for Law and Justice and Electronics and Information technology at a function organized by dept. of empowerment of persons with disabilities. The library houses publications across divers subjects and languages and multiple accessible formats. It has been created by dept. of Empowerment of persons with disabilities.

5. Brail Atlas for visually impaired persons

The union minister for science and technology and earth science Dr. Harshvardhan released the special edition of Atlas for visually impaired (India) in English Brail in New Delhi. This brail atlas has been prepared by National Atlas and Thematic Mapping Organization (NATMO) under Department of Science and Technology; it's world's first Brail atlas for the visually impaired.

Things To Do :

1- **Listening**- We held constitution forums with existing users, potential users and relevant organizations acting on the feedbacks, we addressed the issues there by alleviating many pitfalls. Continued consultation with our clients on a more informal basis provides as with comments, which helps much in reshaping current running programs and also in shaping future initiatives.

2- **Technology**- We have to invest amount in equipment because of the embedded 'voiceovers' adoptive technology built in to the iPods assistive technology is upgraded along with other public computer equipment and staff and volunteers receive regular training too.

3- **Targeted Training**- To make the users as well as staff of library familiar with the services, library should provide training to every individual user and also take help of experts in training of staff as and when needed.

4- **Peer Networking**- We actively encouraging visually impaired users to use smart gadgets by providing accessibility and other features to be helpful in operating the device. Staff should have to see how blind persons could operate the equipment efficiently and potential clients were assured the transformation from familiar technology was not only exciting but also attainable.

5- **Linking with National and International bodies**- Now approaching other national and international bodies for improving and now to provide Library service and develop a community of best practice. In addition to organization such as Sugamya Pustakalaya, Punarphava (National portal for disabled). Deaf action and Share the vision we are expand the library services and expand the reach of the project.

6. Guidelines for Library to Provide services to Special Users

The following are few guidelines that required for adding or accessing Braille books or information from other networks and sources for use by a Braille reader in the community.

1- The accurate reproduction of the contents of a published print edition of a work shall be a foremost requirement of books or material transcribed to any medium that results in a Braille product such as hardcopy Braille or electronic disk.

2- When content such as graphics or illustrations or advertising for magazine have been omitted there should be a statement of that stuff.

3- Encourage the inclusion of all Braille holding in national or regional catalogues as appropriate.

4- Education library board and staff regarding Braille as the means of literacy for blind and visually impaired persons.

5- Use Braille as a medium for communicating with blind and visually impaired Braille readers with in the community.

6- Promote the training programs for providing the Library services for visually impaired users.

7- Promote the availability of library services in Braille in the community served

8- Include Braille or print Braille versions of books in library programs such as story hours literacy discussions in order to encourage young blind children to read along with their sighted peers.

9- Libraries develop ethical standards and values for dealing with patrons and make all staff aware of these standards. Staff should be sensitive to the needs of clients to privacy issues and to the legislative obligation of the libraries they work for.

10- Library staff and users should be aware of the variety of SIW and HIW solution used by print disabled people as they create and expand digital collections.

11- Library's collection is the heart of its service building a collection to meet the needs of a community. They require collections that include popular materials information to support lifelong learning or course works on the job educational resource and books for always including for children and youth.

7. Conclusion

So finally we can say that Library is a social institution that serve information to each and every user equally without any discrimination, library is the hub of learning activity where users can explore the vast amount of information resources. As Dr. S R Ranganathan describe in his five laws of library science that information for all so that we should provide the information to every user in an equal way without any discrimination of caste, race, religion and sex. Library is a growing organism so every emerging technology should be adopted in the library for providing better services to the user.

References

1. "Guidelines for Library Service to Braille Users." *IFLA*. https://www.ifla.org/publications/guidelines-for-library-service-to-braille-users (accessed October 6, 2017).

2. McKinze, Jim, Ian Kikby, and Paul McaCloskey. "http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=4313&context=libphilprac." *CILIP.* https://www.cilip.org.uk/blog/improving-access-library-services-visually-impaired-people (accessed October 5, 2017).
3. Rayini, Junaid. "Library services for visually impaired." *Digital Coomn@ University of Nebraska.* http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=4313&context=libphilprac (accessed October 05, 2017).
4. "Sugamaya Pustakalaya – Online Library for Persons with print Disabilities ." *Press Information Bureau.* http://pib.nic.in/newsite/PrintRelease.aspx?relid=149147 (accessed September 19, 2017).

Mobile Applications for libraries Sub Title: An Overview By

Harpreet Kaur

Assistant Library Information Officer
Indian Institute of Technology Ropar
Nangal Road, Rupnagar, Punjab
E-Mail id: harpreet.iitrpr@gmail.com

Abstract: Mobile innovation holds extraordinary guarantee for empowering libraries to give improved administrations in a shape users progressively are requesting. To fulfill this need, many publishers are adding mobile access to their resources through an app etc. Portable innovations are utilized today to give social insurance administrations, convey training, sort out political occasions, showcase new items, give area benefits, and convey recreations, music and video. The purpose of this paper is to provide necessary guidance to understand the library services and mobile applications that may be provided for the benefits of users.

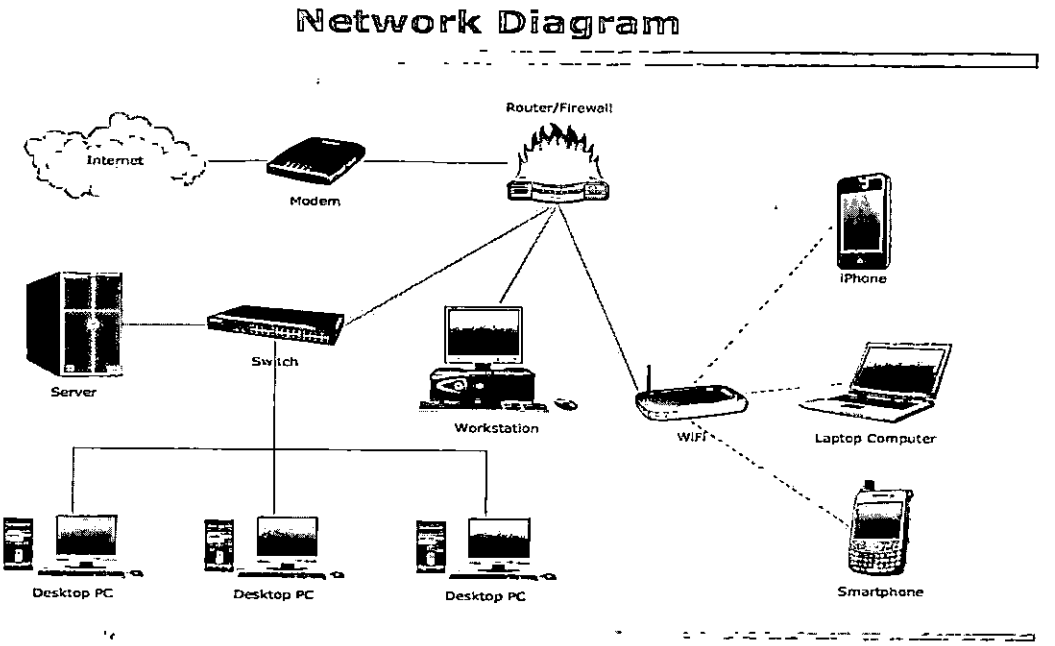
Keywords: Library services, Mobile devices, Information services, SMS alerts, Mobile application, Electronic resources.

1. Introduction

Mobile phones are assuming a key part in data correspondence. Use of portable innovation in library administrations is the need of the hour. Cooperation with the user can be accomplished because of the progression in portable innovation. Libraries can help get the message out about valuable Smartphone applications or tell users concerning the large number of free versatile prepared books accessible from such activities as Project Gutenberg. To pick up a full comprehension of the effect of portable advances, it is beneficial to analyze its history from a few alternate points of view. From the user point of view, the historical backdrop of portable innovations started with the utilization of two way radios and developed to the present condition of productive advanced cells, tablets and other cell phones.

From specialized viewpoint, the historical backdrop of portable innovations began with the restricted utilization of radio frequencies; where the capacity to set up synchronous two-way correspondence was viewed as a mechanical accomplishment. From the social viewpoint, portable advances started as an uncommon gadget utilized by restricted work force who expected to impart to others progressively crises, for example, police and the military. Mobile innovations are utilized today to give medicinal services administrations, convey instruction, compose political occasions, advertise new items, give area benefits, and convey

recreations, music and video. We for the most part bring with us wherever we go and are generally reachable through them. It store and record the absolute most individual data about us: who we converse with; where we go; what we purchase; where we bank; our family, companions and business contacts; and frequently manager data.



2. What is Library Mobile Application?

With progressions in innovation and the ascent in Smartphone utilize, individuals are exploiting being associated with information wherever they are. Mobile phones aren't simply telephones any longer. We can get to e-mail, look through Web, video visit and play recreations. Indeed, mobile phones like iPad and iPod touch can be used for web-based social networking, profitability devices, and amusement actually in your hand.

3. Mobile Applications for the libraries

Students and scholars are struggling, which application to buy to enhance their learning. A versatile application is a product program you can download and get to straightforwardly utilizing your telephone or another cell phone, similar to a tablet.

- **Evernote-** Make content, video and sound updates. Makes it simple to recollect things from your regular day to day existence utilizing your PC, telephone, tablet and the web. Every one of your notes, web clasps, pictures and documents can by synchronized on each gadget and PC you utilize.
- **CloudOn-** Another office tool that will provide the service like MsOffice. You can synchronize the gadget with Google Drive, SkyDrive, Box and Dropbox, open, alter and spare to the drives records.
- **Classics-** Substantial accumulation of free exemplary writing bundled in an exquisite and natural interface. Creators incorporate Aristotle, Charles Dickens, Plato and Oscar Wilde.
- **Dropbox-** Download documents for offline survey and match up photographs and recordings to your Dropbox from your cell phone. Dropbox works with iPhone, iPad, Android and BlackBerry.
- **Library of Congress (LOC) -** Official application for LOC offers a virtual voyage through the Main Reading Room, Great Hall, and Thomas Jefferson's Library, and also show features that incorporates photographs, video and sound.
- **ISSRN-** Made by the Social Science Research Network (SSRN), iSSRN gives accessibility to more than 250,000 research papers in social sciences from researchers around the world. Articles can be messaged or seen on the gadget. iSSRN works with iPhone and iPod touch.
- **History-** Maps Series is the best way to see and learn historical geography. This app is designed for both iPhone and iPad to download the free of cost that has the information from the fourth to the twentieth century's by Seungbin Cho. Highlights incorporate classification/period perspectives and watchword look.
- **Shakespeare-** Application given by Readdle offers the full-content of 40 Shakespeare plays, 6 lyrics and 154 pieces. It works with iPhone, iPod touch and iPad.
- **TED-** Application given by TED and Conferences contains the whole TED-

Talks library of more than 700 video introductions. Capacity to sort by fame, labels or subjects. Spare talks for disconnected survey, TED works with iPad.

- **USA Fact book Free-** Highlights actualities about every one of the 50 U.S. states, maps with state names, U.S. Song of devotion with verses, U.S. Reports and that's just the beginning. By ADS Software Group, Inc.USA Fact book Free works with iPhone, iPod touch and iPad.
- **WordWeb Dictionary-** Broad English lexicon and thesaurus that incorporates more than 285,000 words, states and inferred frames. A different sound adaptation is likewise accessible for $1.99.

4. Mobile Technology and library services

- **Location of the library-** Librarians can give virtual voyages through the library segments and their administrations. For example, Library of Congress gives an application arranged to the iPhone clients which gives a virtual voyage through Library of Congress.
- **SMS Alert Service-** Libraries can utilize SMS administrations to gather the requested books; reminding library users if, book,is expected in users record, advising students about the fine, recognizing the user concerning restoration of a book and OPAC administrations.
- **Suggest a purchase-** Through mobile phones librarians can get the recommendations from the users. In such cases users require not to go the libraries and compose the necessities in an enroll.
- **Audio Tour-** Librarians even can give sound voyage through a library. College of Limerick library, Ireland gives sound rules to the library clients.
- **New Title Preview-** With Mobile Current awareness services may be provided. Mobile devices can be utilized to disseminate the information about recently procured documents.
- **Image Services-** Image Services in a library may offer various free or expense based photographic imaging services including digitized photos,

charts, maps, photographs of spots of national significance.

- **Research Consultation and instruction-** Researchers may have an interaction with the library staff to get the counsel and recommendations by means of mobile phones.
- **Wi-Fi - Internet Access-** 3G and 4G mobile phones are available. Libraries can give Wi-Fi service so that users can access electronic resources easily.
- **Mobile online public access catalog (OPAC) -** Library catalogue can be provided on the cell phones by libraries.
- **Journal finder-** Library Journal Finder gives access to full content journal, magazine and daily paper content and in addition links to titles. American University library has giving choice to seek articles through cell phones.
- **News and Events-** Library occasions, for example, orientations program, stock check, book review, augmentation addresses on special topics and news in connection to researcher's work, conference/workshop can be given through cell phones to refresh the users knowledge and their education.
- **Reference Service-** Users of library can ask through live talk and messaging with mobiles. The reference administrations can be furnished with the assistance of sending and accepting SMS. Quick feedback is likewise conceivable from the student's side.

5. Features of library mobile sites

Following are some features of library mobile sites:

- Headings to the library
- Floor maps
- Versatile library index and inter-library loan services
- Opening hours
- Information on the best way to contact the library by means of various channels (visit/SMS/telephone/email)
- Connections to portable empowered databases
- Connections to portable empowered Web 2.0 records, for example, Twitter,

Flicker, YouTube and Facebook

- Data on accessibility of PCs and gathering discourse rooms
- A webcam
- News about library occasions

6. Conclusion

Mobile innovation offers benefits for organization and individuals. Mobile processing is made possible by smaller PC gear, programming, and correspondences structures that move with a non-convenient definitive information system tolerate a long way from the customary, settled workplace. The appropriation of mobile innovation modifies the customary connections amongst libraries and their users. With the help of Mobile technology the librarians can think about new services and also grow under financial constraints.

References

1. Aggarwal, S. (2014). Copying with plagiarism requires several strategies. Amritsar: Shree publishers and distributors. pp. 418-422.
2. Harmon, C. (2013). Mobile library services: best practices. Maryland: Scarecrow Press. pp. 90-96.
3. Rathore, M. and Aronya, D. (2016). Modern Technology used in mobile application and their implementation in library. New Delhi: Vidit Publication House. pp. 303-307.
4. Walsh, A. (2012). Using mobile technology to deliver library services: a handbook. Maryland: Scarecrow Press. pp. 23-25.
5. web.simmons.edu/-fox/pda
6. www.connectinglibrarian.com
7. www.emeraldinsight.com
8. http://en.wikipedia.org/wiki/Mobile_technology
9. www.library20.ning.com
10. http://www.slideshare.net/KatieSeeler/mobile-technology-and-the-academic-library#btn

Authors Profile



Ms. Harpreet Kaur is working as Assistant Library Information Officer in Indian Institute of Technology Ropar, Punjab. She has cleared UGC-NET in July 2016. She holds M.LISc. from Kurukshetra University, Kurukshetra and M. Phil. Degrees from Ch. Devi Lal University, Sirsa. She is pursuing PhD from OPJS University, Rajasthan. She has contributed many research articles in the peer reviewed journals. She has participated and contributed research papers in several National and International Conferences. Recently she also presented paper in COLLNET 2016 at Nancy, France. She is a life member of ILA. She is a Reviewer for the International Journal of Digital Library Systems (IJDLS), IGI, Global, USA.

E-mail: harpreet.iitrpr@gmail.com

Open Access scholarly communication in Indian Institutes of Technology

Mohammad Nazim

Assistant Professor
Department of Library and Information Science
Aligarh Muslim University, Aligarh- 202002
E-mail: nazim76@gmail.com
and

Ashiya Ahmadi

UGC- Junior Research Fellow
Department of Library and Information Science
Aligarh Muslim University, Aligarh- 202002
E-mail: ashiyamu2007@gmail.com

Abstract: The present study looks at the publication trends by the academicians in Indian Institutes of Technology (IITs), especially the publications of research papers in Open Access (OA) Journals. The data was extracted from the Thomson Reuters' 'Web of Science™ core collection' for the period 2007-2016. It was found that the contribution of India towards OA is outstanding as it contributes 9.3% research output in OA journals, while the contribution of publications in OA journals around the world is 7%. However, contribution of publications in OA Journals by IITs is 4.55%. IITs are considered as institutions of national importance but their contribution towards OA is quite low. It was found that being the holder of 1st rank according to NIRF, Ministry of Human Resource Development, Government of India, IIT Madras is lagging behind in the race of OA contribution. Instead, IIT Bombay is leading in terms of contribution of research output in OA Journals as well as share of research output published in OA journals. It was also found that major contributors in term of number of publications do not prefer to contribute their research output in OA journals.

Keywords: Open Access, IITs, Web of Science.

1. Introduction

Open access (OA) publishing has become a potential path for digital scholarly communication. OA increases visibility and use and thereby impact and status by maximizing the value of research. Advancement in OA leads to government and funding agencies to adopt or examining OA mandates. OA is free of charge, immediate access, and permanent online access to the full text of research articles for anyone, worldwide, without the severe restrictions on use commonly imposed by publisher copyright agreements (Arunachalam Subbiah and Muthu Madhan,

2012). There are two recognised mechanisms for making research articles openly accessible. The two roads to OA, viz. *gold* (provides OA to its peer-reviewed research articles, without delay), *green* (permits authors to deposit their peer-reviewed manuscripts in OA repositories) both are complementary. Gold model of OA uses a traditional journal publication system, but instead of paying for access (pay-to-read) to the final version of a peer-reviewed article, an author or sponsor pays an article-processing charge (APC) to publish the article, and reading the article is free to anyone wishing to do so (Mukherjee Bhaskar, 2014).

Green road refers to efforts of depositing pre and post print in an international network of OA repository (Torres-Salinas, Robinson-García and Aguillo, 2016). The green road to OA is a method of self-archiving, where authors provide OA to their own published articles, by making their own e-prints (the final accepted version) freely available to all by placing them in institutional or central repositories (Suber Peter, 2004). In green OA, the Collection and preservation of intellectual output of the institution's faculty and students, researchers and scientists in digital form, and make it accessible to end-users. It includes materials such as research journal articles, preprints, post-prints, articles undergoing peer review, and theses and dissertations (Sahu, Surendra and Arya, 2013).

The present study aims to examine the publication trend and contribution of research papers in OA journals by academicians of IITs. IITs are autonomous public funded institutes of higher education, learning and research in India, located across the country. They are founded and governed by the 'Institutes of Technology Act, 1961' which has declared them as "institutions of national importance" (http://www.aicte-india.org/iit.php).

The history of the IIT system dates back to 1946 when Sir Jogendra Singh of the Viceroy's Executive Council set up a committee whose task was to consider the creation of Higher Technical Institutions for post-war industrial development in India. The 22-member committee, headed by Nalini Ranjan Sarkar, recommended the establishment of these institutions in various parts of India. As a result of such recommendation, the first IIT was founded in May 1950 at Kharagpur. Subsequent to this, on 15 September 1956, the Parliament of India passed the IIT Kharagpur Act, declaring it as an Institute of National Importance (https://www.iitsystem.ac.in/html/page/history). Latter to IIT Kharagpur 1956 Act and in order to establish more number of similar institutes in the country, "Institutes of Technology Act, 1961" was passed by the Parliament of India. So, as of now there are 23 IIT institutes located at Chennai, Delhi, Guwahati, Kanpur, Kharagpur, Mumbai, Roorkee, Bhubaneswar, Gandhinagar, Hyderabad, Indore, Jodhpur, Mandi, Patna,Ropar, Jammu, Palakkad, Tirupati, Goa, Bhilai, Dharwad, Dhanbad and

Varanasi (http://mhrd.gov.in/iits). Each IIT is an autonomous institution, linked to the others through a common IIT Council, which oversees their administration.

2. Review of Literature

Some studies have analysed the pattern of OA publishing. Gasparyan, Ayvazyan & Kitas (2013) studied on OA as a strategy of changing the ways of scientific research, literature search, journal editing, publishing, and archiving and concluded that advances in digital publishing are forming the base for improved formatting, readability, and rapid distribution of research data. In the wake of changing the system of publishing, however, what concerns most is the quality of publications and unjustified rise of article-processing fees. Similarly, Xia *et al.* (2012) reviews the history of OA policies and examines the current status of mandate policy implementations. They found that hundreds of policies have been proposed and adopted at various organizational levels and many of them have shown a positive effect on the rate of repository content accumulation. However, it also detects policies showing little or no visible impact on repository development, and attempts to analyze the effects of different types of policies, with varied levels of success. It concludes that an OA mandate policy, by itself, will not change existing practices of scholarly self-archiving. Solomon & Bjork (2012) studied on Publication fees in OA publishing, sources of funding and factors influencing choice of journal by conducting a survey on 1,038 authors who recently published articles in 74 OA journals that charge APCs stratified into seven discipline categories. They found that there were large differences in the source of funding among disciplines. Journals with impact factors charged higher APCs as journals from disciplines where grant funding is plentiful. Fit, quality, and speed of publication were the most important factors in the authors' choice of a journal. OA was less important but a significant factor for many authors in their choice of a journal to publish. These findings are consistent with other research on OA publishing and suggest that OA publishing funded through APCs is likely to continue to grow. Antelman (2006) examined the self-archiving behaviour of authors publishing in leading journals in six social science disciplines. It has been found that authors self-archive their work according to the norms of their respective disciplines rather than following self-archiving policies of publishers, as a result, they self-archive significant numbers of publisher PDF versions. Authors also self-archive their work at multiple platforms like institutional repositories, personal websites and academic social networking sites. The study found several consequences of this behaviour. One is that, by self-archiving, an author is contributing (knowingly or not) to the body of OA scholarship. Another

is that, as these copies are distributed on the Internet, the reader is more likely to find versions of articles that may differ from the final published version. The study also found significant levels of self-archiving, as well as significant self-archiving of the publisher PDF version, in all the disciplines investigated. Publisher's self-archiving policies have no influence on author self-archiving practice. Kumar & Mahesh (2017) found that OA institutional repositories are lagging despite the availability of mandates and policies. Researchers and scientists continue to surrender complete copyright to journals and are not seemingly enthusiastic about depositing pre-prints or post-prints in institutional repositories. Increasingly they prefer to publish in APC-based OA journals. Even after more than a decade of being around, OA repositories have not caught on in India yet. Testa, James & McVeigh Marie E (2004) conducted a citation analysis study to know the Citation Pattern of OA Journals in the ISI Citation Databases. The number of OA journals is rising steadily, and new publishing models are rapidly evolving to test new ways to increase readership and access. They found that the number of OA journals identified as OA and covered in ISI databases is growing rapidly, partly because new journals are founded and older journals are changing their access models, but also because better lists of such journals are becoming available. The analysis suggests that, despite their wide distribution and free access, and even in a rapidly evolving subject like pharmacology, the articles in the OA journals are not cited appreciably more quickly than those in comparable, traditional journals.

Some studies have analysed availability of OA journals in different disciplines. Gunasekaran and Arunachalam (2014) conducted a study to know the impact factors of OA and subscription journals across fields. It was found that most of the subscription based journals have the backing of well-entrenched publishing firms who promote them through exhibitions at conferences, book fairs and mass mailing. Publishers also push their journals through 'bundling'. Most OA journals have to be content with merely claiming that they are freely accessible on the net. It would take a long time before these journals win the confidence of many authors and readers. OA has proven to be advantageous to developing country journals; it has helped a large number of Latin American and many Indian journals improve their IF. Kumar (2013) dealt with OA journals accessible from Directory of Open Access Journals (DOAJ) in the subject of library science. The analysis indicated that there was only one OA journal i.e. Bulletin of the Medical Library Association was available before 1990 in the field of library and information science (LIS). Only 19.04% journals have their EISSN. Almost one fourth journals were publishing on half yearly basis. Mahesh and Wadhwa (2012) ranked the Indian library and information science journals based on Web of Science and found that Annals of Library and Information Studies, DESIDOC Journal of Library and Information

Technology, SRELS Journal of Information Management, IASLIC Bulletin etc., are prominent Indian LIS journals. Mukherjee (2014) examines the characteristics of 462 OA journals being published in India under the green, gold and hybrid models. The gold road is the most popular form of OA publishing in the subcontinent. There is a great variation in the size of OA journals and in their publishers. One publisher has more than 77 journals, but 264 publishers publish a single journal only. Overall, the OA journal landscape is greatly influenced by a few key publishers and journals. While 43% of journals charge publication fees and the fees vary from as low as US$10 to as high as US$400, the highest impact factor of the gold OA journals has been noted as 0.58. The data suggested that publication fees are not a major barrier to authorship within the fields of computer science, pharmacy, and medicine.

Also, some studies have analysed contribution of research papers in OA journals in different countries. Torres-Salinas, Robinson-Garcia and Aguillo (2016) analysed the research output produced by Spain to determine if papers published in OA journals contribute to the improvement of citation impact and collaboration indicators in Spanish research. The results are shown by scientific areas and compared with 17 European countries. Spain is the second highest ranking European country with gold OA publication output and the fourth highest in OA output. In Spain, OA output is especially high in the fields of Arts and Humanities. Spain's normalized citation impact in OA (0.72) is lower than the world average and that of the main European countries. Singeh, Abrizah & Karim (2013) carried out a survey on academics in five Malaysian research-intensive universities, investigating their readiness to self-archive in OA institutional repositories. The study revealed that the majority of academics in this study have no or little knowledge of, or experience with, institutional repositories and are unfamiliar with self-archiving opportunities. However most of them endorse the principle of OA and are willing to contribute content to an institutional repository if an opportunity arises or if mandated by their funding institutions. Those who agree to self-archiving see it to be beneficial in the author's life as it enhances visibility and recognition of the author's work, but the main problem encountered is the fact that researchers feel it is time consuming. A survey report by Association of Universities in the Netherlands (VSNU) (2016) found that Netherlands is the fastest growing country in the world in terms of OA. Globally, the Netherlands is even considered a change agent, paving the way for other countries with OA ambitions. Abad et al. (2010) conducted a survey to determine the trend of OA in Southern European Countries. They found that among the Southern European Countries, the largest number of journals is found in Italy, followed closely by Spain and France. The three countries together have nearly 90% of the titles in Southern European Countries. But in terms of OA journals, Spain has the highest number of journals i.e, 269 out of 1,846. France has 88 OA journals

and Italy has 123 OA journals out of 2,583 which are surprisingly low. Nazim (2017) analyzed the current state of gold OA in India on the basis of papers published in the Web of Science indexed journals. Finding showed an increasing trend of contribution of research papers in OA journals by Indian researchers. The study revealed that among the top 20 publishing countries, India ranks 10th place in terms of the general research output, but secures 8th place in terms of gold OA papers. However, India's position in terms of share of gold OA publications is relatively higher than other leading countries of the world. Researchers in India mostly prefer to contribute their gold OA papers in Indian journals rather foreign journals and the proportion of gold OA research output in Clinical, Preclinical, Health, Life Sciences and Physicals Sciences is much higher than other disciplines such as Arts & Humanities and Social Sciences.

Some study have analysed the OA publishing in different institutions such as the study carried out by Yang & Li (2015) found that TAMU (Texas A&M University) faculty are willing to consider publishing in OA publications, and almost half of them believe OA journal publications are acceptable for consideration of tenure and promotion in their departments. Despite their positive attitudes towards OA publishing, they are not so positive towards OA mandates. The survey also revealed a low awareness level of the TAMU IR, as well as of newer OA trends and resources.

Review of literature presented above shows that a large number of studies have been conducted on OA. Some studies have analysed the general pattern of OA publishing (Gasparyan, Ayvazyan & Kitas, 2013; Xia *et al.*, 2012; Solomon & Bjork, 2012; Antelman, 2006; Kumar & Mahesh, 2017; Testa & McVeigh, 2004) while Some studies have analysed availability of OA journals in different disciplines (Gunasekaran & Arunachalam, 2014; Kumar, 2013; Mahesh & Wadhwa, 2012; Mukherjee, 2014). Also, some studies have analysed contribution of research papers in OA journals in different countries as well as the availability of OA journals in different disciplines (Torres-Salinas, Robinson-Garcia & Aguillo, 2016; Singeh, Abrizah & Karim, 2013; VSNU, 2016; Abad *et al.*, 2010; Nazim, 2017). Some study have analysed the OA publishing in different institutions (Yang & Li, 2015). No study has, however, analysed the contribution of IITs towards OA. Therefore, the present study aims to analyse the contribution of researchers in IITs towards OA.

3. Objectives

The main objective of the study is to examine the publication pattern of research publications in OA journals by academicians in selected IITs in India. The specific objectives of the study are to:

1. identify the top IITs in terms of research output in India.

2. examine the trends of OA articles in IITs.
3. identify the prominent contributor towards OA.
4. explore research areas in which OA contribution is high.
5. identify the growth of total number of articles as well as the number of OA articles.
6. examine the year-wise growth of OA publications.

4. Methodology

The present study examines the contribution of IITs towards OA in India. List of top IITs were taken from NIRF (National Institute Ranking Framework). The data was extracted from the Thomson Reuters' 'Web of Science ™ core collection' for the period 2007-2016. The 'Advanced Search' feature of the Web of Science databases were used to search the articles of each of the selected IIT. Organization-Enhanced [Index] were used to include each IITs one-by-one. SCI, SSCI and A&HCI citation databases were used. The result shown like this:

(OG=(Indian Institute of Technology (IIT) - Madras)) AND DOCUMENT TYPES: (Article)

Indexes=SCI-EXPANDED, SSCI, A&HCI Timespan=2007-2016

The data obtained was noted in tabular form for analysis. It was found that the contribution of India towards OA is outstanding as it contributes 9.3% research output in OA journals while the contribution of world is 7%. There are 23 IITs and their contribution to OA is 4.55%. So, the researchers analysed the contribution of top IITs in OA, top research areas, most prominent authors and growth of OA research out put during 2007- 2016.

5. Results

Share in OA

Table 1 shows the OA publication pattern in IITs. Being the holder of 1st rank according to NIRF, Ministry of Human Resource Development, Government of India, IIT Madras is lagging behind in the term of OA contribution. From the table it can be seen that IIT Kharagpur contributed maximum number of articles, but its contribution in OA journals is quite low. Contribution of OA articles by IIT Bombay is much higher than other five IITs.

Table 1: Share of research papers in OA Journals

Rank	Institution	Total number of articles	Mode of Access		% of share in OA journals
			Closed	Open	
	IIT Madras	8, 912	8, 492	420	4.71
	IIT Bombay	8, 902	8, 434	468	5.25
	IIT Kharagpur	11, 605	11, 165	440	3.79
	IIT Delhi	8,709	8, 283	426	4.89
	IIT Kanpur	7,675	7,295	380	4.95

Ranking in terms of total research output, output in OA journals and share of research output published in OA journals

Researcher wants to compare and rank accordingly all the five selected IITs in terms of total research output, OA research output and share of research output published in OA journals. It was found that being the holder of 1st rank according to NIRF, IIT Madras doesn't rank first in all the three selected criteria for comparison. Instead, IIT Bombay ranks 1st in terms of OA research output gfggas well as share of research output published in OA journals.

Table 2: Ranking in terms of total research output, output in OA journals and share of research output published in OA journals

Rank	Ranking in terms of total research out put	Ranking in terms of OA research out put	Ranking in the share of research output published in OA journals
	IIT Kharagpur	IIT Bombay	IIT Bombay
	IIT Madras	IIT Kharagpur	IIT Kanpur
	IIT Bombay	IIT Delhi	IIT Delhi
	IIT Delhi	IIT Madras	IIT Madras
	IIT Kanpur	IIT Kanpur	IIT Kharagpur

Top research areas

There are a number of research areas in which IITs are doing research. It can be seen in table 3 that although maximum number of research output is in the field of engineering, followed by material science, chemistry, physics, mechanics, but maximum number of papers in OA journals are in Science Technology other topics.

Table 3: Top research areas

Sl. No.	Research Area	IIT Madras			IIT Bombay			IIT Kharagpur			IIT Delhi			IIT Kanpur		
		TP	OAP	% Share	TP	OAP	% Share	TP	OAP	% Share	TP	OAP	% Share	TP	OAP	% Share
	ENGINEERING	2,812	77	2.73	2,289	46	2.00	3,417	38	1.11	2,613	55	2.10	1,818	39	2.14
	MATERIALS SCIENCE	1,978	69	3.48	1,456	41	2.81	2,396	64	2.67	1,599	140	8.75	1,404	60	4.27
	CHEMISTRY	1,920	9	0.46	2,191	17	2.09	2,248	15	0.66	1,385	12	0.86	1,970	10	0.50
	PHYSICS	1,596	80	5.01	2,039	109	5.34	1,874	60	3.20	1,585	37	2.33	1,874	108	5.76
	MECHANICS	721	10	1.38	348	7	2.01	602	6	0.99	------	---- --	------	464	0	0
	SCIENCE TECHNOLOGY OTHER TOPICS	676	138	20.41	709	202	28.49	870	177	20.34	590	136	23.05	525	122	23.23
	THERMODYNAMICS	576	27	4.68	------	-----	------	------	---- --	------	------	---- --	------	------	---- --	------
	METALLURGY METALLURGICAL ENGINEERING	500	00	00	------	---- --	------	539	00	00	------	---- --	------	324	4	1.23
	MATHEMATICS	471	20	4.24	484	17	3.51	412	09	2.18	------	---- --	------	543	32	5.89
	ENERGY FUELS	446	03	0.67	314	4	1.27	------	---- --	------	542	1	0.18	------	---- --	------
	GEOLOGY	------	------	------	382	39	10.20	------	---- --	------	------	---- --	------	------	---- --	------
	COMPUTER SCIENCE	------	------	------	368	4	1.08	906	04	0.44	483	1	0.20	382	2	0.52

	POLYMER SCIENCE	------	------	------	------	------	------	751	17	2.26	454	4	0.88	------	------	------
	OPTICS	------	------	------	------	------	------	------	------	------	495	0	0	232	3	1.29
	BIOTECHNOLOGY APPLIED MICROBIOLOGY	------	------	------	------	------	------	------	------	------	317	25	7.88	------	------	------

TP= Total Publications *OAP= Open Access Publications*

6. Author's contribution

The researchers want to identify top contributors of research articles as well as authors who contributed maximum number of papers in OA journals. Table 4 shows name of authos with their total contribution as well as contribution in OA journals. It is interested to note that authors who contributed maximum number of papers (top contributors) do not prefer to contribute their research output in OA journals.

Table 4: Author's contribution

GHOSH S (155)	RAMAPRABHU S (179)	PRADEEP T (199)	MURTY BS (200)	**Top contributor**	**IIT Madras**
KIM JH (14)	JEONG YT (16)	PARTHIBAN P (19)	RAMKUMAR V (33)	**Top OA contributors**	
GUPTA A (225)	CHATTOPADHYAY S (228)	NANDI BK (236)	VARMA R (245)	**Top contributor**	**IIT Bombay**
GUPTA A (39)	NANDI BK (39)	DAS S (40)	VARMA R (42)	**Top OA contributors**	
ROY S (195)	GHOSH S (282)	DAS S (284)	CHAKRABORTY S (408)	**Top contributor**	**IIT Kharagpur**
GUPTA AK (11)	KUNDU SC (11)	MANDAL M (14)	DAS S (17)	**Top OA contributors**	
SHARMA RP (151)	KUMAR S (243)	SINGH B (265)	KUMAR A (324)	**Top contributor**	**IIT Delhi**
SINGH A (15)	KUMAR A (16)	DAS A (21)	SUNDAR D (22)	**Top OA contributors**	
BASU B (142)	CHANDRASEKHAR V (158)	SHARMA A (220)	KUMAR A (251)	**Top contributor**	**IIT Kanpur**
RAI DC (9)	GOSWAMI D (10)	TRIPATHI SN (16)	KUMAR A (18)	**Top OA contributors**	

DOBLE M (144)	HOU WS (14)	NAYAK TK (222)	ZHANG Y (38)	DAS AK (184)	BEHERA MD (11)	SHARMA S (147)	KOTHARI VK (15)	VERMA S (117)	BALASUBRAMANIAM R (9)

Year-wise growth of publications

It is essential to identify the amount of articles each of the selected IIT publishes in OA journals every year to identify the growth of publication. Table 5 shows year-wise growth of publications as well as the contribution to OA during the period of 2007- 2016. It can be seen from the table that growth in number of publications is increasing every year in each of the IITs but they are lagging behind in terms of making publicationa in OA domain except IIT Madras. In 2013, IIT Bombay share maximum number of research output in OA domain but after that, the percentage of share in OA journals was decreased.

Table 5: Year-wise growth of publications

Year	IIT Madras			IIT Bombay			IIT Kharagpur			IIT Delhi			IIT Kanpur		
	Total	OA	% share	Total	OA	% share	Total	OA	% share	Total	OA	% share	Total	OA	% share
2016	1,223	74	6.50	1,268	94	7.41	1,512	60	3.96	1,154	67	5.80	1,006	59	5.33
2015	1,110	71	6.39	1,183	104	8.79	1,402	70	4.99	1,032	50	4.84	913	64	7.00
2014	950	37	3.89	1,079	74	6.85	1,287	70	5.43	1,038	59	5.68	842	52	6.17
2013	851	31	3.64	956	44	12.35	1,180	48	4.06	932	46	4.93	771	47	6.09
2012	819	43	5.25	848	37	4.36	1,074	44	4.09	808	48	5.94	708	37	5.22
2011	884	49	5.54	790	28	3.54	1, 023	28	2.73	760	35	4.60	703	24	3.41
2010	856	38	4.43	751	24	3.19	1,098	33	3.00	788	33	4.18	659	25	3.79
2009	741	21	2.83	714	21	2.94	1,087	35	3.21	735	28	3.80	697	24	3.44
2008	770	37	4.80	657	22	3.34	1,005	29	2.88	742	26	3.50	728	36	4.94
2007	708	19	2.68	656	20	3.04	937	23	2.45	720	34	4.72	648	12	1.85
Total	8,912	420	4.71	8,902	468	5.25	11,605	440	3.79	8,709	426	4.89	7,675	380	4.95

7. Top OA Source titles

The researchers have always been interested in knowing the core journals in their subject. The journals publishing the maximum number of articles in any subject area are considered as core journals. Similarly, researchers may also be interested in knowing the prominent OA journals in which authors contribute their research papers more frequently. An attempt was made to identify the top journals in which author prefer to publish their research articles. It was found that there were 4550 journals in which reserachers in IITs prefer to publish their research articles of which 336 journals are OA. Current Science (India) is identified as one of the leading OA journals, followed by PLoS One (United States). It is important to mention that Current Science is identified as the top most OA journal which is published from India so it can be said that IIT professionals prefer to publish their OA articles in Indian journals.

Table 7: Top OA Source titles

S. No.	Source titles	Country	No. of OA papers	% share
	CURRENT SCIENCE	India	185	55.05
	PLOS ONE	USA	154	45.83
	SADHANA ACADEMY PROCEEDINGS IN ENGINEERING SCIENCES	India	125	37.20
	SCIENTIFIC REPORTS	UK	122	36.30
	JOURNAL OF EARTH SYSTEM SCIENCE	India	79	23.51
	BULLETIN OF MATERIALS SCIENCE	India	78	23.21
	INDIAN JOURNAL OF FIBRE TEXTILE RESEARCH	India	77	22.91
	AIP ADVANCES	US	77	22.91
	PRAMANA JOURNAL OF PHYSICS	India	74	22.02
	ACTA CRYSTALLOGRAPHICA SECTION E STRUCTURE REPORTS ONLINE	UK	54	16.07

8. Conclusion

This article aims to analyse the publication trend of the academicians in IITs with special reference to the publications of research papers in OA Journals for the period of 2007-2016. It was found that the contribution of India towards

OA is outstanding as it contributed 9.3% research output in OA journals, while the contribution of publications in OA journals around the world is 7%. IITs are considered as institutions of national importance but their contribution towards OA is quite low as it has contributed 4.55% of research articles. Being the holder of 1st rank according to NIRF, Ministry of Human Resource Development, Government of India, IIT Madras is lagging behind in the term of OA contribution as well as share of research output published in OA journals. IIT Kharagpur contributed maximum number of articles, but its contribution in OA journals is not much. Instead, IIT Bombay is leading in terms of contribution of OA research articles as well as share of research output published in OA journals. There are a number of research areas in which IIT professionals are doing research. It can be depicted from the tables that although maximum number of papers is in the field of engineering, followed by material science, chemistry, physics, mechanics but maximum number of OA articles are published in Science Technology other topics. Also, the study identified the top contributors of research articles as well as top contributors in OA journals. It was found that top contributors do not prefer to contribute their research output in OA journals except Verma R and Kumar A from IIT Bombay and IIT Kanpur respectively.

During the period of study, rate of growth of publication has got increased every year in each of the IITs but they are lagging behind in terms of making publications in OA domain except IIT Madras. In 2013, IIT Bombay share maximum number of research output in OA domain but after that, the percentage of share got decreased. The study identified the top journals in which author prefer to publish their research articles. It was found that there were 4550 journals in which reserachers in IITs prefer to publish their research articles of which 336 journals are OA. Current Science (India) is identified as one of the leading OA journals followed by PLoS One (United States). It is important to mention that Current Science is identified as the top most OA journal which is published from India so it can be said that IIT professionals prefer to publish their articles in Indian journals.

References

1. Antelman, Kristin. (2006). Self-archiving practice and the influence of publisher policies in the social sciences. *Learned Publishing*, 19(2), 85-95. Available at http://eprints.rclis.org/7420/1/antelman_self-archiving.pdf
2. Arunachalam, Subbiah and Muthu, Madhan. (2011). Open Access to Scholarly Literature in India — A Status Report (with Emphasis on Scientific

Literature), *Centre for Internet and Society,* 16. Available at http://cis-india.org/openness/publications/open-access-scholarly-literature.pdf

3. Association of Universities in the Netherlands (VSNU). (2016). The Netherlands: paving the way for open access. Available at http://www.vsnu.nl/files/documenten/Domeinen/Onderzoek/Open%20access/Ezine-Open-Access-ENG-mrch2016.pdf
4. Abad, Francisca *et al.* (2010). Open access in Southern European Countries. Available at http://www.accesoabierto.net/sites/accesoabierto.net/files/OASouthEurope.pdf
5. Gasparyan, A. Y; Ayvazyan, L & Kitas, G. D. (2013). Open access: changing global science publishing. *Croatian Medical Journal, 54*(4), 403–406. Available at http://doi.org/10.3325/cmj.2013.54.403
6. Gunasekaran, Subbiah and Arunachalam, Subbiah. (2014). The impact factors of open access and subscription journals across fields. *Current Science,* 107(3). Available at http://www.currentscience.ac.in/Volumes/107/03/0380.pdf
7. Indian Institute of Technology. Available at http://www.aicte-india.org/iit.php
8. Indian Institute of Technology. Council of Indian Institute of Technology. Available at https://www.iitsystem.ac.in/html/page/history
9. Indian Institute of Technology. Government of India, Ministry of Human Resource Development. Available at http://mhrd.gov.in/iits
10. Kumar, Parveen. (2013). A Bibliometric Study on Open Access Journals in Library Science discipline in DOAJ. *International Journal of Information Library & Society,* 2(1). Available at http://www.publishingindia.com/GetBrochure.aspx?query=UERGQnJvY2h1cmVzfC8xNTIxLnBkZnwvMTUyMS5wZGY
11. Kumar, Vijendra and Mahesh, G. (2017). Open access repositories in India: a lost opportunity? Current Science, 112(2). Available at http://www.currentscience.ac.in/Volumes/112/02/0210.pdf

12. Mahesh, G and Wadhwa, N. K. (2012). Web of Science based ranking of Indian library and information science journals. *Collnet Journal of Scientometrics and Information Management.* Available at http://tarupublications.com/journals/cjsim/FullText/new%20pdf/05_CJSIM6-2.pdf

13. Nazim, Mohammad. (2017). Bibliometric Analysis of Gold Open Access in India. *International Information & Library Review,* DOI: 10.1080/10572317.2017.1326246

14. Mukherjee, Bhaskar. (2014). Green and gold open access in India. *Learned Publishing,* 27(1), 21–32. DOI: 10.1087/20140104

15. Sahu, Surendra and Arya, Satish Kumar. (2013). Open access practices in India, *Library Hi Tech News,* 30(4) 6-12. Available athttp://dx.doi.org/10.1108/LHTN-03-2013-0011

16. Singeh, F. W; Abrizah, A & Karim, N. (2013). What inhibits authors to self-archive in open access repositories? A Malaysian case. *Information Development,* 29(1), 24-35. Available athttp://dx.doi.org/10.1177/0266666912450450

17. Solomon, D. J; Bjork, B. C. (2012). Publication fees in open access publishing: sources of funding and factors influencing choice of journal. *Journal of the American Society for Information Science and Technology,* 63(1), 98–107. Available at http://www.openaccesspublishing.org/apc/preprint.pdf

18. Suber, Peter. (2004). What is Open Access? An overview. Available at https://legacy.earlham.edu/~peters/fos/overview.htm

19. Testa, James &McVeigh, Marie E. (2004). Open Access Journals in the ISI Citation Databases: Analysis of Impact Factors and Citation Patterns: A citation study from Thomson Scientific. *Thomson Corporation.* Available a*thttp://ip-science.thomsonreuters.com/m/pdfs/openaccesscitations2.pdf*

20. Torres-Salinas, Daniel; Robinson-García, Nicolás and Aguillo, Isidro F. (2016). Bibliometric and benchmark analysis of gold open access in Spain: big output and little impact. *El profesional de la información,* 25(1), 17-24. Available athttp://dx.doi.org/10.3145/epi.2016.ene.03

21. Xia, Jingfeng *et al.* (2012). A Review of Open Access Self-Archiving Mandate Policies, *Portal: Libraries and the Academy*, 12(1), 85-102. DOI: 10.1353/pla.2012.0000

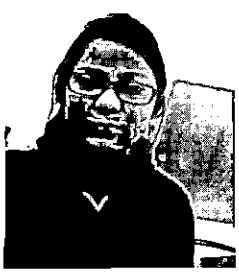
22. Yang, Z. Y & Li, Y. (2015). University Faculty Awareness and Attitudes towards Open Access Publishing and the Institutional Repository: A Case Study, *Journal of Librarianship and Scholarly Communication*, 3(1), eP1210. DOI: http://dx.doi.org/10.7710/2162-3309.1210.

Authors Profile



Dr. Mohammad Nazim is an Assistant Professor at the Department of Library and Information Science, Aligarh Muslim University. Prior to joining the Aligarh Muslim, he spent 10 years at Banaras Hindu University as Assistant Librarian. He has 35 publications to his credit besides many articles in Emerald and Elsevier Science journals and a book on knowledge management from Chandos Publishing. He is currently the Managing Editor for Journal of Indian Library Association (JILA) and a member of the editorial board of the Journal of Information. He is also a reviewer for Chandos Publishing (an imprint of Elsevier Science) and BMC Research Notes (an open access journal from BioMed Central). His research interests include open access to scholarly communication, knowledge management, Bibliometrics/ Scientometrics and information storage and retrieval.

Email: nazim76@gmail.com



Ashiya Ahmadi is persuing PhD from the department of Library & Information Science, Aligarh Muslim University. She is getting Junior Research Fellowship (JRF) from UGC. She holds M.L.I.Sc. from Babasaheb Bhimrao Ambedkar University, Lucknow. She also holds gold medal in M.L.I.Sc.

E-mail: ashiyamu2007@gmail.com

Re-Orientation of Digital Library Services with Mobile Devices: The Changing Landscape

B.P. SINGH

Dayalbagh Educational Institute (Deemed University), Agra-05
e-mail: bp.sing76@gmail.com

Abstract: This paper presents the re-orientation of digital library services with mobile devices and it how to change the way of information delivery in present scenario. In present scenario, the important characteristics of digital libraries are the storage, organise, sharing and disseminate the information in electronic form with applications of information and communication technology (ICT). Digital libraries enable managing very large amounts of digital data, preserve digital collections, provide faster access to information, and facilitate dealing with information 24x7 over the networks at global level. Digital libraries help to enhance distributed learning environments. In digital era, modern libraries are focusing only on re-orientation of digital library services and faster delivery of information on mobile devices. Currently, many mobile applications based tools/apps (Library Wiki, WhatsApp, LibraryApps and Digital Library Apps etc) are freely available to effectively delivery of information on mobile devices. Digital libraries provides the various digital services with mobile devices like Mobile websites, Mobile OPAC, Web discovery, Library orientation, Library floor plan, Library blogs, E-mail/SMS alert, Library exhibits, Library video tutorials, New arrivals, Shared library (LibraryThing) and E-resources accessibility etc. Also, this paper describes the use of Quick Response Code in re-orientation and effectively delivery of information services on mobiles devices.

Keywords: Digital Library Services, Mobile Library Services, Information Services, Mobile Devices, LibraryApps, Quick Response Code.

1. INTRODUCTION

With the **binging** of human society, libraries have always strived to collect, process, store, retrieve, and disseminate information. But today information exists in many forms than just as printed materials and this has lead to the evolution of Digital Libraries. The primary concept behind Digital Libraries has its roots in the basic philosophy of libraries of disseminating information for all. In digital era, Digital libraries break the all barrier of physical boundaries and made a new concept of library as "Library without Wall". Digital Libraries strive to give access to information across varied domains and communities. Though the term "Digital Library"' came into being with the popularity of the Web in the early 1990s, the inception of these can be traced back to the pre- 1990s in projects dealing with

automated storage and retrieval of information, library networks and online resource sharing efforts.

Today, Digital Libraries contain non-conventional books including electronic documents as against conventional publications. This obviates use of computers and special equipment for accessing the stored digital information, facilitating access by remote users over the internet. **Digital Libraries** facilitate large number of users at global level to access the contents from the repositories of electronic documents. Currently, digital Libraries enable the creation, organization, maintenance, management, access to, sharing and preservation of digital documents and collections in networking environment.

In the present scenario, important characteristics of digital libraries are the storage, organise, sharing and disseminate the information in electronic form with usage of communication networks, and copying by either downloading or online/off-line printing from a master file. Digital libraries enable managing very large amounts of digital data, preserve digital collections, provide faster access to information, and facilitate dealing with information 24x7 over the networks at global level. Digital libraries help to enhance distributed learning environments. They also help to perform searches that are manually not feasible or practical and offer to protect content owners' information, **Husler (1997)**. In past decade digital services like online catalogue search, renewing loan items, reserving items, access of e-books, e-journals and rooms reservation etc are more common than access to research material, databases and similar related content. Currently, there are a greater demand for 24x7 online services on mobile devices to users convenience and maximum usage of library collections and services.

2. Mobile Devices used in Libraries:

In the second decade of 21st century, mobile technologies, rapidly changed and facilitating communication and the transfer of information anywhere, anytime. The mobile technologies have made communication and access to information very speedily, convenient and timely to the users. Currently, use of mobile devices is increasingly widespread especially among the develop Various applications can be observed among the users, which ranged from telephone conversation and simple text mare used to messages (SMS), to multimedia messaging services (MMS) and internet access, depending on the capability of each mobile phone technology and services rendered. Currently, libraries are used mobile technologies to communicate with their users in such an effective manner. **Terplan, (2000)** describes that telephones and e-mail are important tools to facilitate prompt handling and response to the stream of users questions from within campus and

out campus of the library user community. The libraries mainly provides digital services on mobile devices include laptops, netbooks, notebook computers, tablets, smartphones, cell phones, audio players such as MP3 players and e-reader etc. The following mobile devices are describes below.

Personal Digital Assistant (PDAs):- Personal Digital Assistant (PDAs), is a mobile device and it's functions as a personal information management device. PDAs, also known as a handheld personal computer (PC). Its very useful mobile devices discover and access of e-resources and services by the users anywhere, anytime. The users can easily use it to access the information in various formats due to its touch screen features.

Tablets:- Tablet is a very popular and useful mobile device among the educated people. The usability of tablets in accessing of information in various formats includes text, audio and video etc. Today, Tablets are used to discovering and accessing the e-information resources (e-books, e-journals, databases, e-mails etc) anywhere and anytime over the internet. Also, Tablets are capable to playing audio and video materials in network environment. As many tablets currently developed on the based of advanced versions of smartphones operating system, they will have the same capabilities as smartphones and will run many of the same mobile apps. Tablets can also provide on-the-spot reference services.

MP3 players and iPods:- In the digital library services use of mobile devices should not be limited upto phones. The modern library implementing the audio and video based service using iPod or MP3 player to helps the users. The users are used an iPod/MP3 player—mobile devices for audio and/or video tours. With an iPod/MP3 player—mobile devices, teachers, researchers and students can explore the library at their convenience, concentrating on the parts of the collection most relevant to their interest.

Smartphones:- After the revolution of mobile technologies, in last five years smartphone popularity are increase rapidly and more than 60% users are used the smartphone to information access over the internet. The samrtphone is not only phone, also it's portal to mobile outreach. Today, Librarians provides more and more information on smartphones under their mobile outreach programs and enhance the usage of information resources in their libraries. With WhatsApp, Google Voice, QR code and library-based options such as MyInfoQuest and Mosio's Text a Librarian etc, library professional set up and quickly provides a reference service to the users.

E-book readers:- In the electronic era, the general public has only become aware of e-readers in the last decade due to the popularity of Amazon's Kindle and Barnes

& Noble's Nook. Today, almost youngster read e-information resources using e-readers on their devices. This can be an easy tool to start supporting e-readers on campus and off campus.

Cell Phones:- Afterwards the revolution of mobile technologies, the first device that comes to mobile phone has the cell phone. In the starting the libraries deliver SMS alert services to the users on their cell phone. The libraries provides the SMS alert about the check in/out of books, overdue date, due fine, new arrivals, OPAC search and library notices etc to library users on their cell phones.

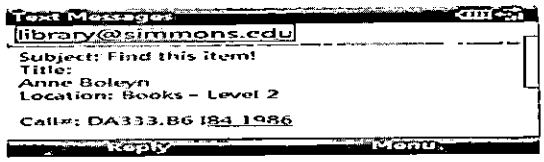
3. DIGITAL LIBRARY SERVICES ON MOBILE DEVICES:

Revolution of information and communication technologies (ICT) in the last decade of 20th century, changes the outlook of library services from print to digital library services. Ultimately, World Wide Web (WWW) has paved way for rapid proliferation of new information resources is stored in various manifestations like computer hard disks, digital video and audio tapes, flash memories, CD/DVD media, zip drives, online journals, e-books, e-zines, etc. In the era of digital information explosion, librarians have a greater role in identifying the information resources and how best the resources can be exploited for optimal use of information by users. Digital library services may include provision of E-journals, E-books, consortia based services, archives, e-learning content, multimedia content, E-Current Awareness Services, Institutional repositories and a plethora of similar services. Institutional repositories are emerging as one of the most popular digital library services, to which libraries are adapting to great effect. They are proliferation around the world quite at a smart pace and Indian has not been left behind.

The past decade has seen unprecedented growth in digital libraries across the world in domains like academics, research and publishing. The advance technologies at the core of digital libraries have shown tremendous maturity in terms of available software, network bandwidth, standards, protocols, content formats, access mechanisms and content management workflows. Currently, digital library technology has provided new avenues in sectors like Preservation of cultural heritage, Scholarly communication, publishing and E-learning, to the academia and research communities. In 21st century, modern libraries re-oriented the digital library services with social media and mobile device for effective services. Cummings, Merrill & Borrelli (2009) presents that surveys were often used to examined the demand for library services, in particular searching catalogue with small screen devices. Currently, more than 50% of smart phone owners use their phones to access maps and directions, Nielsen Company (2016). The social

media and mobile device based digital library services are describes as following.

- **SMS/e-mail alert Services:** Automated libraries provide the SMS and e-mail alert to users for check out/ in books, current contents and list of new arrivals on mobile device to the users.

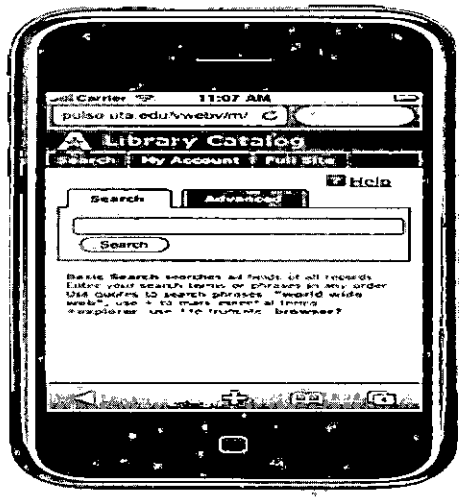


(Source: https://libraryh3lp.com/sms-reference-service)

Fig.1 SMS alert on Mobile Device

- **Real- time services:** Today, modern libraries provide real-time updates, online discussions with the users on mobile devices accessible platform.
- **Wikis:** It's use to capture knowledge and information for greater sharing
- **MOOCs:** It's especially develop to promote curriculum, seminars, programmes and online course etc to attract talent to their courses.
- **Social Networking Approach: In the social** networking environment many modern libraries provides the library services and latest information through Facebook, lislinks, instagram, twitter, RSS feeds and Blogging etc to access on mobile devices by the users anywhere, anytime.
- **Photo Gallery sharing (Flickr):** In the reputed organizations libraries manage the digital photo gallery lf organizational events and photo sharing using Flickr with users.
- **Instant messaging:** Today, library professionals provide the instant messaging services to the users.
- Shared library (LibraryThing):
- Streaming audio and video (YouTube)
- **Web publishing (Lulu):** Currently, modern libraries online publish the newsletter, CAS bulletin, list of new arrivals and magazines etc through web publishing software to open access by the uses.

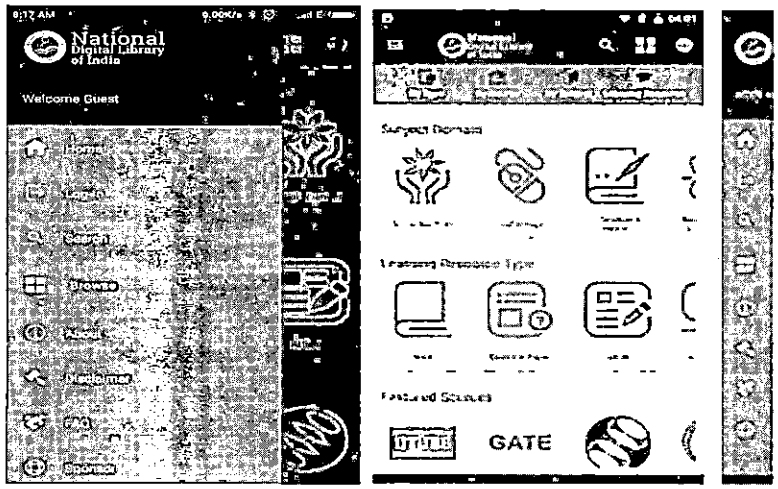
- **Mobile OPAC:** Currently, library professionals design and development of Mobile OPAC to facilitate the library catalogue searching remotely on mobile devices by users.



(Source: http://pulse.uta.edu/vwebv/)

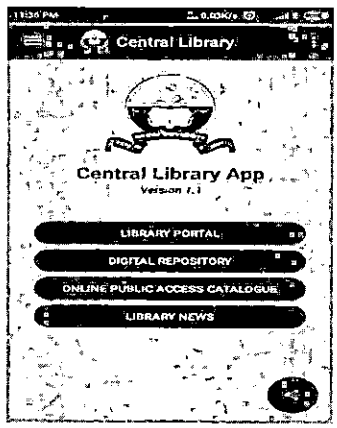
Fig.2: Library OPAC on Mobile Device

- **Digital Library App:** National Digital Library of India was design and developed by Govt. of India, Ministry of Human Resource Development (MHRD) under its National Mission on Education through Information and Communication Technology at Indian Institute of technology, Kharagpur. The NDL India is designed to hold content of any language and provides interface support for leading Indian languages. It has created repository for more than 65 lakh publications in more than 100 languages. IIT Kharagpur has launched a mobile app for National Digital Library (NDL), to provide the accessibility of India's largest library repository at fingertip. NDL App is freely available on Google Play Store to its downloading. Through this app users can be accessed from anywhere, anytime on the mobile devices. The NDL app has advanced features to search, browse, filter, tag, comment and metadata view. The NDL has approximately 9 lakh users with more than 1.5 lakh hits on the website. The App is expected to boost the accessibility and registered users.



(Source: https://ndl.iitkgp.ac.in)
Fig. 3 & 4: NDL Mobile App screenshots

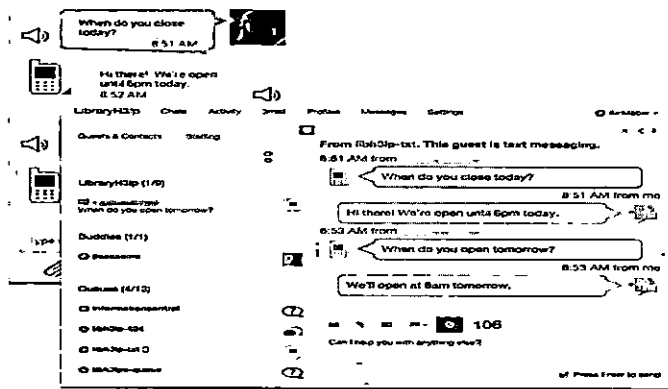
- **Library Apps:** Today, mobile apps made very simple and faster information sharing and delivering between the peoples using the mobile devices. Mobile applications, apps for short, are standalone, dedicated pieces of software or web sites. To easily provide the latest information on mobile devices, many libraries design and developed a library apps for information access by users on their mobile devices. Currently, mobile apps enhance the usage of information resources and create a new way to information delivery on mobile devices.



(Source: https://play.google.com/store)

Fig. 5: Library Mobile App screenshots

- **Library users orientations:** Many reputed libraries facilitate the users orientation on their mobile devices through a QR code link of library audio tours for library users.
- **E-Information Services with Social Media Tools:** In the changing ICT environment many librarians and information scientists are used the social media tools (Facebook, Twitter, WhatsApp, Flicker, YouTube, Instagram, and Wikimedia Mobile etc) to make a true 21st century information hub. Using the social media tools librarians delivered the library awareness programmes, outreach services on mobile devices over the internet.
- **Ask-a-librarian services:** The libraries are offering ask a librarian services to mobile users and mobile users the ability to text in their research questions from afar.

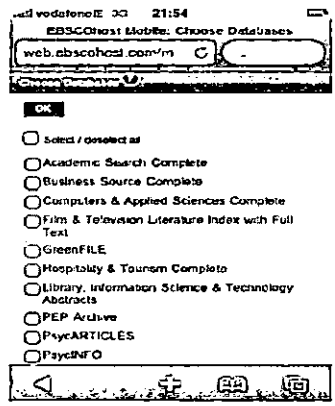


(Source: https://libraryh3lp.com/sms-reference-service)

Fig. 6: Ask-a-Librarian Service on Mobile Device

- **Library floor plan and Guide:** In libraries QR code is used to provide library floor plans on mobile device where library users directly open, MP3 audio tour on the respective subject floor.
- **Library and information video tutorials:** Many libraries are provides streaming audio and video tutorials to users on mobile device by individual video or create a QR code to a YouTube playlists of videos.

- **Library exhibits**: Today, modern libraries organise exhibits on mobile devices through a QR code link to songs, videos, websites, users survey, contests/quiz, etc. or other relevant information that augments the exhibits.
- **E-books on mobile devices:** To enhance the usage of e-books for the qualitative academic and research work, many libraries are provides e-books facilities on user mobile devices and users access the e-books using login ID and password on their mobile devices. E-readers, tablets and smartphone have advance features that allow teachers, researchers and students to read, highlight and add annotations to the text for further references.
- **Mobile database:** Currently, many reputed publishers and library developed a mobile accessible database by the users on their mobile devices. The EBSCO is highly usable mobile database to discover and access of knowledge on mobile devices anywhere and anytime over the internet.



(Source: https://web.ebscohost,com/m)

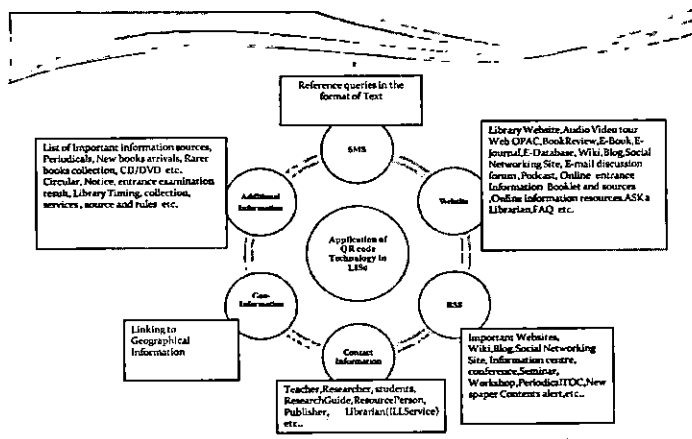
Fig. 7: Mobile database by EBSCO

4. Library Services on Mobile Devices using Quick Response Code (QR Code):

The QR Code is the trademark term for Quick Response Code and it was developed in 1994 by Denso-Wave Corporation, Japan. QR Code is approved as an ISO international standard (ISO/IEC18004) in 2000. Quick Response Codes are two dimensional barcodes which is generated by the QR Code generator and reading by the QR code readers by scanning using mobile devices. QR Code capable to be store

information (numbers, texts, hyperlinks, contact details, calendar information, e-mail addresses, phone numbers, SMS, maps, social network information etc in any direction i.e horizontally and vertically. A QR code store maximum information up to 7089 characters numeric only, 4296 characters of alphanumeric and binary (8 bit) 2953 bytes in single barcode and single code can be divided in to 16 portion of a code at maximum. A QR Code is capable to reading with high-speed in 360° (Omni-directional).

Singh (2015) describes QR code as a powerful tool to promotion of library products and services with mobile devices. QR codes are provided on library site/ products for easy access to download their mobile catalogue onto iPhones and Smaerphones. Today, users can also access and bookmark their library account page and interesting services on mobile devices using QR codes to easily access anywhere, anytime.



Applications of QR codes in Library and Information Center

(Source: Singh (2015), p.53.)

Fig.8: QR Code based Mobile Services

5. Impact of Mobile Technology on Library Users:

Though mobile technology implementing effects, increases the sharing of electronically/ digitally information in a variety of forms like machine-readable and online databases, bibliographic and full-text publications, multimedia products, e-books, e-journals, and electronic mail, bulletin boards, teleconferencing, etc has made people to think of digital and virtual library services. To promotion of library services a significant number of universities are using mobile technologies and have created mobile-optimized versions

of their websites or have built library apps that can be downloaded from mobile app stores, **Rellinger (2011).** The increasing number of publishers embracing e-publishing, the growing number of libraries around the world which acquire and the embracing mobile access to information on 24x7 basis by of users have catalysed the exponential growth in the number of e-publications.

Today, Mobile devices made faster access to cloud services, play rich multimedia content, and allow for advanced user interactivity. The advanced features hardware and technologies such as Bluetooth, accelerometers, and multi touch screens, as well as text messaging, smartphones apps applications, mobile websites, Wi-Fi support, and media creation and capture tools, are enhance the usage of library collections and services by users. Mobile devices based library services magnify the impact of *library content on mobile devices* (E-books, e-journals, e-articles, digital materials etc), *Digital Library Services from mobile devices* (reference services, ask a librarian, discovery/accessibility e-resources, OPAC search, etc) and *Mobile specific services* (URL services, QR codes based services). The positive impacts of re-orientation of digital library services with mobile devices on users are following.

- Information can share/deliver very quickly within limited time.
- 24x7 accessibility of library services anywhere, anytime.
- It attracts the users to maximum use of library collections and services.
- User friendly services.
- More actively deliver messages to users wherever they are at the right time.
- Mobile phones are seen as a key means for improving access to education, **Rhema & Sztendur (2013).**

6. CONCLUSION:

Currently, ICT totally changed the information delivery paradigms from print to digital and created new information superhighway to faster information delivery on mobile devices. In modern libraries, library professionals already implemented the mobile technologies in their library services to delivering the information on mobile devices. **Dresselhaus & Shrode (2012)** implemented the mobile technologies in library to explore the services which were delivering on mobile devices to outreach access by users, and describes that how mobile technologies may be useful to library patrons. In this paper I describes that modern libraries use mobile devices for library services in lack of telecommunication infrastructure,

fund, and lack of staffs training. Today, library professionals accepted the ICT challenges and try to delivering the useful information resources on mobile devices to easily discover and access the knowledge of the world. The scene in Indian libraries is definitely going under a metamorphosis with more and more libraries re-orienting their services with mobile technology. To design and development of mobile based digital library services, open source software's like Wiki, Greenstone, dSpace, Eprints, Fedora, RSS tools, Blogging software and mobile apps are a great help in delivery of digital information services on mobile devices. Also, to delivering information on mobile devices, many library resource providers like EBSCO, ScienceDirect, Westlaw and RefWorks etc, have mobile apps or mobile sites that library can offer to your more wired users. The author observed that mobile technologies are very helpful in libraries to outreach programme and enhance the usage of library collections and services through smartphones.

References:

1. Ademodi, D. T., & E. O. Adepoju (2009). Computer skill among librarians in academic libraries in Ondo and Ekiti States, Nigeria. *Library Philosophy and Practice.* Retrieved from: http://unllib.unl.edu/LPP/ademodi-adepoju.htm.
2. Cummings, J, Merrill, A & Borrelli, S (2009). The use of handheld mobile devices: their impact and implications for library services. *Emerald, Library Hi Tech*, vol. Vol 28 (1), pp.22-40,
3. Dresselhaus, A. & Shrode, F. (2012), Mobile technologies & academics: do students use mobile technologies in their academic lives and are librarians ready to meet this challenge?. *Information Technologies and Libraries*, Vol. 31 (2), pp.82-101.
4. Library apps, (2017). Retrieved From: https://play.google.com/store)
5. National Digital library of India App, (2017). Retrieved From:http://alumni.iitkgp.ac.in/content/iit-kgp-launches-android-app-national-digital-library
6. Rellinger (2011). Impact of mobile devices on universities. *Campus Technology,* Vol 24(5), pp. 28-32.
7. Rhema, A. and Sztendur, E. (2013), Using a mobile phone to support learning: experiences of engineering students in Libya, *Proceedings of the Informing Science & IT Education Conference (InSITE)*, pp.215.

8. Singh, B.P. Applications of Quick Response Code in Libraries and Information Centres, *Electronic Resources and Digital Services.* Delhi: DESIDOC, pp.51-56.
9. Terplan, K. (ed.) (2000). *The telecommunications handbook.* Boca Raton: CRC Press.
10. https://libraryh3lp.com/sms-reference-service
11. https://libraryh3lp.com/sms-reference-service
12. http://pulse.uta.edu/vwebv/)
13. https://web.ebscohost,com/m

RFID Technology Applications In Libraries

Praveen B Hulloli

Research Scholar, Rani Channamma University, Belagavi -Karnataka
E-mail: praveenbhulloli@yahoo.com +91-9916144802

Dr. Kiran P Savanur

Asst. Professor, Dept. of LIS, Rani Channamma University, Belagavi -Karnataka
E-mail: kiranpsavanur@gmail.com +91-9986948035

Abstract: A library is a growing origination, the data has gone through four transformational phases of improvement, the most radical stage beginning at the last part of the twentieth century. This stage has brought a ceaseless transformation, especially with the presentation of data and correspondence college advancements with the development of Information and ICT, college libraries now utilize different sorts of advances to help the administrations the render. Every day new innovative advances influence the technique data is taken care of in libraries and data focuses. The effects of new innovations are felt by college libraries in each perspective. In this paper, we talked about the ICT application write to RFID.

Keywords: Digital Technology, applications, Libraries, Information and Communication Technology, RFID and E-Resources.

1. Introduction

Radio Frequency Identification (RFID) invented in 1969, patented in 1973, first used in harsh industrial environment in 1980s', and standards presented in 2001, is the latest addition of technology to be used in the libraries for a combination of automation and safety actions in the well safeguarding of documents either inside the library or goes out-of library. Radio Frequency Identification (RFID) technology is being used by the few of the academic libraries in India for smooth functioning of housekeeping operations (such as self check-in/check-out/self renewal/physical stock verification/tracing of missing books, etc.) RFID technology is a wireless use of electro-magnetic fields to transfer data, for the purpose of automatically identifying and tracking tags attached to the objects. Dissemination and end clients association in the Libraries and data administrations prepare. RFID can be used library circulation operations and theft detection systems. RFID based systems move beyond security to become tracking systems that combine security with more efficient tracking of materials throughout the library, including easier and faster charge and discharge, inventorying, and material handling. (Boss 2004).

The effect of data and Communication Technology described on data benefits by changes in organization, substance and technique for creation and substance sand strategy for generation and conveyance of data items. Rise of web as the biggest vault of data and learning, changed part of Libraries and data science experts from middle person to facilitator, new devices for dispersal of data and move from physical to virtual administrations condition and loss of some ordinary data administrations and development of new and innovational online.

2. What is the Digital Technology?

The idea of RFID (Radio Frequency Identification) innovation was created in 1948 yet it has needed to hold up fifty years before it has possessed the capacity to convey on its unique guarantee. This is a well ordered guide, which will clarify what RFID is, the manner by which it is utilized and the advantages which can accumulate. It will likewise give a reasonable perspective of the issues around RFID, it will take a gander at how it is best sent and caution of any pitfalls so libraries can get to the essential data to have significant discussions with providers. Libraries will then have the capacity to put resources into RFID innovation properly to suit their necessities and to boost the accessible advantages. Look into writing all through the previous decade has demonstrated that innovation can upgrade proficiency, advancement, affect dialect obtaining, give more prominent access to data, bolster learning, persuade understudies, and enhance their confidence. Truly, specialists have affirmed that PC innovation gives rich chances to understudies to fabricate or change their own insight through the rich encounters that innovation bears.

3. Application of RFID Digital Technology to Libraries

In college libraries, a few frameworks have been produced for their different house-keeping tasks all the more, still are being arranged and refined, because of the innovation of extensive scale coordination. These are known as microcomputers; intended to deal with any of the Libraries forms like acquisitions, indexing, serials control, dissemination control, bibliographic control, or Selective conveyance of Information. IT is connected is opportune, right, exact and pertinent. The thought, Library Automation, consequently wound up plainly well known and of which clarified that "in the typical manual library framework, staff play out the different undertakings important to finish each procedure, yet in the event that a PC issued to play out some preparing operations, a mechanized library comes about". Characterized library mechanization as "the utilization of PCs and related innovation to do precisely what has been done in college libraries with

the avocation of minimized cost and additionally expanded execution. Along these lines, computerization helps in the acquisitions, association, stockpiling and dispersal of data in college libraries. For the most part, IT applies to library benefits in various ways, which include: Acquisitions, Cataloging, Circulation, Serials and User Services

4. Advantages of RFID systems in Libraries

1. Quick charging/releasing
2. Simplified benefactor self-charging/releasing
3. High unwavering quality
4. High-speed electronic reviewing
5. Interfaces with materials taking care of frameworks
6. Long tag

RFID has many favorable circumstances over standardized tags, however scanner tags have turned into a standard in numerous ventures for some advantageous reasons. Contingent upon the application, either framework will have its qualities and shortcomings. When it comes time for you to settle on a choice between either frame works, remember the underlying and repeating costs, and the potential profit for your ventures. In years past, actualizing a full-scale RFID framework was cost restrictive for little to moderate size organizations, however today, the distinction in the cost of another standardized tag framework versus a RFID framework might be negligible in specific applications. Additionally, putting resources into a RFID framework may pay for itself after some time because of potential increments in productivity and declines in blunders. (Narayanan, A, and Sanjay Singh)

5. Disadvantages of RFID Systems in Libraries

1. High cost
2. Vulnerability to trade off
3. Removal of uncovered labels
4. Exit sensor issues
5. Perceived Invasion of Patron Privacy

RFID ends up being excessively costly for some applications when contrasted with other following and distinguishing proof techniques, for example, the straightforward scanner tag. It is troublesome for a RFID peruser to peruse the data on the off chance that the labels are introduced in fluid or metal items. The issue here is that, fluid and metal surfaces have a tendency to reflect radio waves, which makes the labels mixed up. In such applications, they must be set in different arrangements and plots for taking legitimate readings, which might be excessively unwieldy and tedious. Obstruction has been seen to happen in RFID frameworks, when gadgets, for example, forklifts and walkies-talkies are in the region. The nearness of cell phone towers too has been found to meddle with these radio waves. The retail division mammoth Walmart, which has introduced billions of RFID labels in their items all through the world, have revealed such issues in their frameworks. (Anasane, Milind,A and Gorde,Diapk,P 2013)

RFID flag frequencies over the world are non institutionalized. For example, the US and Europe have an alternate scope of frequencies at which RFID labels work. This makes it compulsory for worldwide transportation organizations and different associations to know about the working example in different countries. RFID is considered by many to be an intrusive innovation. Customers tend to stress over their security when they buy items with these labels, as there is a conviction that once radio chips are introduced in an item, it keeps on following a man, and his own data can be gathered by it and transmitted to the peruser. So while many stores assert that they deactivate the labels after the item has been acquired, purchasers still keep on remaining uncertain of this innovation.

6. Digital Technology Reference Services

Today electronic computerized reference administrations are being given by a system of Digital Technology libraries. The clients make their question on an enquiry page and it is consequently directed to one of the taking an interest college libraries which record it as an email message to the client containing important and accessible data.

7. Conclusion

The advanced Technology Libraries development in India is rapidly expanding and the conventional college libraries are currently on their approach to digitization in a staged manner. RFID is one of the most recent trends in modern academic libraries because of its helpful features like faster, required less manpower, time saving

device, providing security to the documents etc. As we know, RFID technology is also being used in many other areas also such as healthcare, army, security, sports, marketing and industrial area to tracking the moveable item and providing speedy services. Its applications are being used by various foreign and Indian libraries because it has been proved that this technology has reduced the cost, manpower, time and give quick and excellent result to the user and provide greater economy in library services. RFID is increasing in popularity among libraries, as the early adopters of this technology have shown that, it makes good economic sense, both for large and small libraries.

References

1. Boss, R. W. "RFID Technology for Libraries" ALA Tech Notes (Prepared may 14, 2004), Available: http://www.ala.org/printertemplate.cfm
2. Narayanan, A, and Sanjay Singh "Implementing RFID in Library: Methodologies, Advantages and
3. Disadvantages" URL: http://www.libsys.co.in/download/implementing_rfid_in_Libraries.pdf
4. Anuragi, Matadeen. "An Dengineering Technology (IJRASET) RFID Technology For Libraries : An Indian Sce- nario." *nternational Journal for Research In Applied Science And Engineering Technology (IJRASET)* 2, no. II (2014): 60-65.
5. Anasane, Milind,A and Gorde,Diapk,P "Applications of Radio Frequency Identification
6. (RFID) Technology's In Libraries" International Journal Of Computer Science and Applications, 6, No.2, 2013: 24-27, URL: http://researchpublications.org/IJCSA/NCAICN-13/110.pdf
7. Balog, Michal, Erik Szilagyi, and Miroslav Mind. "Using of RFID Technology in Maintenance Management." *International Scientific Journal about Logistics* 2, no. 2 (2015): 1-4.
8. Dhanalakshmi, M, and Mamatha Uppala. "RFID Based Library Management System." ASCNT: 227-234.
9. Gheorghe, Simona. "Integrated solutions for libraries : implementation of

RFID system." *Studii de Biblioteconomie Information*, 2011: 120-126.

10. Kavulya, Joseph,M. "Use of RFID technology in Libraries: A perspective from the Catholic University of Eastern Africa (CUEA), Nairobi." *The 7th UbuntuNet Alliance annual conference,*, 2014: 133-142.
11. Khanna, Sunaina. "Impact of RFID Technology on library services : A Case study of A.C. Joshi Library , Panjab University , Cchandigarh." *International Journal of Digital Library Services* 4, no. 2 (2004): 117-126.

Authors Profile

	Dr. Kiran P. Savanur presently working as an Asst.Professor, Dept. of Library and Information Science, RCUB from the past 5 and half years. Previously, he served as Asst. Librarian for 8 years in the Raman Research Institute, Bangalore founded by Sir CV Raman. He completed his Masters degree in Library & Information Science from KUD in 2003, similarly, awarded Doctoral degree from the same University in 2011 with the specialization in Bibliometrics and Scientometrics. He is recipient of "Best Research Paper" award at the "National Conference on Scientometrics and Knowledge Management", held at KUD in April 2013. Currently 4 research scholars are pursuing their doctoral degree under his guidance.
	Mr.Praveen B. Hulloli, he has experience of 12 years as Librarian in Medical College, Engineering College and Management College. He has earned several master degrees in varying specialization from Dharwad and Mysore Universities. Master's degree in Master of Library Science, M.Sc Information Technology, M.A. in Sociology and M.A in Psychology also. He is currently pursuing Ph.D Library Science at Rani Channama University, Belgaum - Karnataka

Understand MOOC for future libraries

Ruchi Srivastava

Assistant Librarian (SG)
Indian Institute of Science Education and Research Bhopal
ruchi@iiserb.ac.in

Abstract: The standard of education of any organization can be reflected from the quality teaching of faculty and quality of collection in the library of the institute. Any progressive librarian of the institute would love to implement new technological ideas and new methods of education in the library. Despite of all scarcity of resources he wish to disseminate knowledge to each member of the community. The quality and feature of MOOC is all about this only and librarians can make use of this quality for marketing of the best features of their library. To fulfill this aim, a librarian should know about MOOC to use it as a tool to invite users to the library. This article discusses about the MOOC and its bonding with library.

Keywords: MOOC, Define MOOC, MOOC in India, MOOC platforms

1. Introduction

Librarians can be very good teachers, as they know which information is useful for their user community. The community include not only the students but also the faculty members who teaches them in class. A man with bundles of knowledge wish to share it with as many people as he can and by doing this only, he earns more knowledge and a person who keeps his/her knowledge restricted to himself/herself, he/she gets rust on the surface of the brain as per an old saying by ancestors. In my opinion, this what MOOC all about. As MOOC is in continuous process of transformation and development, no one exactly categorize what MOOC is all about.

MOOCs are the natural evolution of Open Courseware, first created by the Massachusetts Institute of Technology (MIT) in 2001. Therefore, the MIT also leads the development of MOOCs, first with MITx, and then with edX. The term MOOC was coined during the course "Connectivism and Connective Knowledge" by Dave Cormier, from the University of Prince Edward Island (Canada). [1]

2. Definitions of MOOC

According to Wikipedia, a massive open online course (MOOC) is an online course

aimed at unlimited participation and open access via the web. [2] In addition to traditional course materials such as filmed lectures, readings, and problem sets, many MOOCs provide interactive user forums to support community interactions among students, professors, and teaching assistants (TAs). MOOCs are a recent and widely researched development in distance education which were first introduced in 2006 and emerged as a popular mode of learning in 2012. [3,4]

According to Barnes, Cameron (2013), the term Massive Open Online Course (MOOC) refers to a specific type of online course. The main features of such courses are that:

- there are no formal entrance requirements;
- participation is free;
- they are delivered entirely online; and
- they are massively scalable, being designed for thousands of users.[5]

According to Gore, Hannah (2014), a MOOC is denoted as:

- Massive: as registration is not capped (with enrolment in some cases exceeding 100,000 students);
- Open: to take advantage of widely available OER and open registration(though some MOOCs have prerequisites, and for-fee registrations, examinations or certificates of completion);
- Online: with no requirement for face-to-face attendance; and
- Course: the concept of a pedagogically designed learning journey.[6]

3. Short Background about MOOC for librarians

During 1890-1920, i.e. before the beginning of the digital age, distance learning mode emerged in the form of correspondence courses which in later times took shape of early e-learning forms through radio and television broadcast of courses. But the problem was that hardly less than five percent of the students would complete a course.[7] Then the beginning of 2000s welcomed many developments and changes in online, or e-learning and distance education, with increasing online presence, open learning opportunities, and the development of MOOCs.[8] The first one was launched in 2008. It was called 'Connectivism and Connective Knowledge/2008' (CCK8), created by educators Stephen Downes and George Siemens. Building off a for-credit course at the University of Manitoba, Canada,

this was the first class designed behind the acronym of 'MOOC' and used many different platforms to engage students with the topic, including Facebook groups, Wiki pages, blogs, forums and other resources.[9]

In 2011, Sebestian Thrun , the celebrated Stanford professor left his classroom, went home, and using a hastily-put- together digital camera set-up and napkins, started teaching a course on artificial intelligence. Within the period of three months his online course attracted more than 150,000 students from around the world as the students of his online course received every bit of material that his Stanford students got: lectures, assignments and exams and history was made. The MOOC (Massively Online Open Course) was born, and Thrun's company Udacity played a huge role in making American higher education catch MOOC fever. Nearly every university in the US started offering a few courses on at least one of the major MOOC platforms that sprung up. In 2012, the New York Times ran a story declaring 2012 to be the "Year of the MOOC" as several well-financed providers, associated with top universities, emerged, including Coursera, Udacity, and edX.. [10]

List of MOOC providers

MOOC Provider	Year founded in	Type	Headquarters
Stanford Online	2006	Non-profit	USA
Coursera	2012	Commercial	USA
Khan Academy	2006	Non-profit	USA
WizIQ	2007	Commercial	India / USA
Canvas Network	2008	Commercial	USA
Peer to Peer University	2009	Non-profit	USA
Udacity	2012	Commercial	USA
Eliademy	2012	Commercial	Finland
openHPI	2012	NA	Germany
FutureLearn	2012	Non-profit	UK
OpenClassrooms	2007	Commercial	France
OpenLearning	2012	Commercial	Australia
edX	2012	Non-profit	USA
iversity	2013	Commercial	EU
One Month	2013	Commercial	USA

NovoEd	2013	Commercial	USA
Coursmos	2014	Commercial	USA
Open2Study	2013	Commercial	Australia
Kadenze	2015	Commercial	USA
POLHN	2005	Non-profit	Western Pacific Region
ALISON	2007	Commercial	Ireland
Lynda.com	1995	Commercial	USA
Shaw Academy	2013	Commercial	Ireland
Udemy	2010	Commercial	USA
NPTEL	2015	Non-profit	India

4. MOOC in India

In India, various higher education providing institutes in collaboration with the governing authorities are working hard to cater the grown educational needs of the students, faculty, researchers and whole community they are serving to. MOOC is the best solution of all such desires. Top institutes like IITs, IIMs, IISC and higher education authorities like UGC, AICTE, MHRD have always been involved in the initiative of serving quality education to learners in India, which includes traditional as well as e-learning.Some of projects serving currently for providing online education are NPTEL, mooKIT offered by IIT Kanpur, and IITBX of IIT Bombay. The most recent initiative started by the government is "SWAYAM", started with a goal to serve at a very large scale and to cope with the increased needs of the learner's. India is second to US, which accounts for 27 per cent with 8,8,400 users of the edX learner base and 1.5 million registered users on Coursera from India, as of December 2016.[11]

5. Initiatives by the Indian Government

Indian government has taken several initiatives to uplift the concept of open education. The initial focus was with the objective to provide open resources in the form of repositories, libraries, educational media files, e-books, etc. which can be made accessible and reachable to all the community members. To gain this objective efforts resulted and started as National Digital Repository of IGNOU, Sakshat providing e-content, Shishya for XI-XII Standards by CBSE Board, and Vidya Vahini integrating IT into the curriculum of rural schools by providing interactive training and developmental communication. Then emerged education

and research network known as ERNET connecting various colleges and schools by providing network connectivity; EDUSAT, a satellite launched for education in India, Consortium for Educational Communication (CEC), use the power of television to act as means of educational knowledge dissemination; Information and Library Network Centre (INFLIBNET) autonomous InterUniversity Centre for connecting university libraries, also it has started several other programs. But these all are the initiatives towards open education and education with Information technology still MOOC was out of their reach.

In 2013, government launched e-PG Pathshala run especially for postgraduate course and it is managed by INFLIBNET of UGC. But it is more of a repository of e-content and assessment than a MOOC. Then the government set off to offer online courses on developing their own platforms. Currently, in India very few institutes and universities have the facilities to start or support such initiative out of which some are mentioned below-

- NPTEL stands for National Programme on Technology Enhanced Learning which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science (IISc) for creating course contents in engineering and science. NPTEL as a project originated from many deliberations between IITs, Indian Institutes of Management (IIMs) and Carnegie Mellon University (CMU) during the years 1999-2003. A proposal was jointly put forward by five IITs (Bombay, Delhi, Kanpur, Kharagpur and Madras) and IISc for creating contents for 100 courses as web based supplements and 100 complete video courses, for forty hours of duration per course.

Web supplements were expected to cover materials that could be delivered in approximately forty hours. Five engineering branches (Civil, Computer Science, Electrical, Electronics and Communication and Mechanical) and core science programmes that all engineering students are required to take in their undergraduate engineering programme in India were chosen initially. Contents for the above courses were based on the model curriculum suggested by All India Council for Technical Education (AICTE) and the syllabi of major affiliating Universities in India. It is one of the fundamental goals of the project to bring in all the best teachers in the country under the umbrella of NPTEL and record their lectures/seek their collaboration with IITs/IISc and make their courses available for the community under free and open sources agreement.

There is already a move to create open virtual laboratories in the Internet for engineering subjects initiated by IIT Delhi which is extremely important for our country. Another primary objective is to forge strong ties with major academic initiatives worldwide such as MIT OCW, Commonwealth of Learning, British Open University, Australian Open Universities and Digital Library initiatives (to mention a few) and with industry for developing new technological tools for learning and dissemination.[12]

- mooKIT Indian Institute of Technology Kanpur is well known for its excellence in education and research and has been offering MOOCs since 2012. mooKIT, a MOOC Management System has been built ground up at the Computer Science department at IIT Kanpur with best-of-breed features and state-of-art technology.
- mooKIT is a system that instructors, learners and system administrators find easy to work with - designed for "Internet Novices". Its unique architecture makes it highly customizable and cost-effective at any scale. As per latest information available on the website, mooKIT has been used in 18 courses with about 120,000 registered students.[13]
  Key features of mooKIT1131

  Adaptable to Varying Bandwidth- Bandwidth Indicator to choose the delivery mode from video (when high), audio (when modest) or via phone.

  Discussions - Forums for in-depth discussion, Hangouts for quick and real-time interactions.

  Social Network Integration-Access and Participate in the forums from Facebook and Twitter.

  Internationalization - Select preferred language for navigation menu. Integrate new languages easily.

  Assessments - Quizzes and Assignments for evaluation.

  Certification - Generate certificates from templates.

  Analytics - Monitor and gain interesting insights as the course progresses.

  Customizable - Adapt to the local needs. Addition of new features is easy.

  Cost Effective - Handles high-traffic on low-end servers. Huge savings in hosting costs.

- IITBombayX offers interactive online classes and MOOCs. IITBombayX is a non-profit MOOC platform developed by IIT Bombay using the open-source platform Open edX, in 2014. It was created with funding from National Mission on Education through Information and Communication Technology (NME-ICT), Ministry of Human Resource Development (MHRD), Government of India. Currently, it is offering 63 courses on different subjects from multiple disciplines.[14]
- SWAYAM short for Study Webs of Active Learning for Young Aspiring Minds. It was supposed to be launched in October 2014, and with three MOOCs. But it was never launched. SWAYAM is finally moving forward again, and it might even be launched on August 15 2016 , India's Independence Day. The courses hosted on SWAYAM will be in 4 quadrants - (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) selfassessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology. In order to ensure best quality content are produced and delivered, seven National Coordinators have been appointed: They are NPTEL for engineering, UGC for post-graduation education, CEC for under-graduate education, NCERT & NIOS for school education, IGNOU for out of the school students and IIMB for management studies. Courses delivered through SWAYAM are available free of cost to the learners, however students wanting certifications shall be registered, shall be offered a certificate on successful completion of the course, with a little fee. At the end of each course, there will be an assessment of the student through proctored examination and the marks/grades secured in this exam could be transferred to the academic record of the students.[15]

UGC has already issued the UGC (Credit Framework for online learning courses through SWAYAM) Regulation 2016 advising the Universities to identify courses where credits can be transferred on to the academic record of the students for courses done on SWAYAM. SWAYAM platform is indigenously developed by Ministry of Human Resource Development (MHRD) and All India Council for

Technical Education (AICTE) with the help of Microsoft and would be ultimately capable of hosting 2000 courses and 80000 hours of learning: covering school, undergraduate, post-graduate, engineering, law and other professional courses. [15}

6. Technology behind MOOC

In two ways the interested institutions can initiate for MOOC. One, they can go for a proprietary platform for instance, Coursera , Udacity etc. Secondly, if they wish to have their self-hosted platform they can either develop their own such as IITK has developed for their moocKIT or they can go for open source platforms like Coursebuilder, Drupal, Open edx, etc. available on internet.

Google Course Builder is an open source, online education platform created by Google in 2012 that can be used to create online courses, whether it's for an entire university offering, professional training, or a corporate product. It is part of Google Open Online Education. Course Builder is built on Google Cloud App Engine, and is supported on Linux, Mac OS X and Windows. It uses Python 2.7 under the hood, but no knowledge of the language is needed to create the courses themselves.[16]

Drupal a free and open source content-management framework written in PHP and distributed under the GNU General Public License. Drupal provides a back-end framework for at least 2.3% of all web sites worldwide - ranging from personal blogs to corporate, political, and government sites. Systems also use Drupal for knowledge management and for business collaboration. Drupal provides a back-end framework for at least 2.3% of all web sites worldwide - ranging from personal blogs to corporate, political, and government sites. Systems also use Drupal for knowledge management and for business collaboration. As of April 2017, the Drupal community is composed of more than 1.3 million members including 106,650 users actively contributing ,resulting in more than 37,110 free modules that extend and customize Drupal functionality, over 2,445 free themes that change the look and feel of Drupal, and at least 1,116 free distributions that allow users to quickly and easily set up a complex, use-specific Drupal in fewer steps. The standard release of Drupal, known as Drupal core, contains basic features common to content-management systems. Drupal runs on any computing platform that supports both a Web server capable of running PHP and a database to store content and configuration.[17]

edX is a massive open online course (MOOC) provider. It hosts online university-level courses in a wide range of disciplines to a worldwide student body, including

some courses at no charge. It also conducts research into learning based on how people use its platform. EdX differs from other MOOC providers, such as Coursera and Udacity, in that it is a nonprofit organization and runs on the free Open edX open-source software platform. The Massachusetts Institute of Technology and Harvard University created edX in May 2012. More than 70 schools, nonprofit organizations, and corporations offer or plan to offer courses on the edX website. [18]

7. What can a Librarian do?

As far as I can understand a librarian should take some practical steps which are as follows-

1. To sign up for a MOOC. Experiencing MOOCs from the learner perspective will give librarians a better personal idea of what MOOCs are and where libraries may play a role.
2. Dive into the conversation. Talk with your peers, with educators, and with the community you serve. This conversation would be enhanced by more scholarly research into MOOCs, and more research into the role of libraries and librarians in MOOC development and delivery.
3. If your institution is already involved in MOOCs, or is considering getting involved, strive to be included in the development phase so expectations of future library support are realistic.
4. Librarians should be included in MOOC project teams, we must actually implement this suggested practice.

8. Conclusion

No doubt MOOC is getting its importance globally and in my opinion almost everyone can agree today that academic education of the future cannot be restricted within the boundaries of the physical campus environment but also in a virtual learning environment. If that is to be the case, then we as libraries need to embrace it and do our best to be part of the future and find ways to be an academic partner, in the same way as we always have been, throughout history. This can of course be done in other ways and many libraries have chosen other means for a long time but, at least at our University, the MOOCs seem to provide a great opportunity for us to create new collaborations and new ways of getting more involved in faculty work.

References

1. http://desarrolloweb.dlsi.ua.es/moocs/what-is-a-mooc
2. Kaplan, Andreas M.; Haenlein, Michael (2016). "Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster". Business Horizons. 59 (4),pp. 441-50
3. Pappano, Laura(2012). "The Year of the MOOC". The New York Times. Available at http://www.nytimes.com/2012/11/04/education/edlife/massive-open-online-courses-are-multiplying-at-a- rapid-pace.html?pagewanted=all&_r=0
4. Lewin, Tamar (2013). "Universities Abroad Join Partnerships on the Web". New York Times. Available at http://www.nytimes.com/2013/02/21/education/universities-abroad-join-mooc-course-projects.html
5. Barnes, Cameron (2013). MOOCs: The Challenges for Academic Librarians. Australian Academic & Research Libraries, 2013,Vol. 44(3),pp. 163-175.
6. Gore, Hannah(2014). Massive Open Online Courses (MOOCs) and Their Impact on Academic Library Services: Exploring the Issues and Challenges. New Review of Academic Librarianship, 20,pp.4-28, 2014
7. Saettler, L. Paul (1968). A History of Instructional Technology. New York: McGraw Hill. ISBN 0070544107
8. Yuan, Li(2015). MOOCs and Open Education Timeline (updated!). Available at http://blogs.cetis.org.uk/cetisli/2015/05/11/moocs-and-open-education-timeline-updated/
9. Marques, Juliana (2013).A Short History of MOOCs and Distance Learning. MOOC news and reviews, Commentary, April 17, 2013. Available at http://moocnewsandreviews.com/a-short-history-of-moocs-and- distance-learning/
10. Srivastava, Anuj (2016). Sebastian Thrun, Modi and the Forgotten Promise of MOOCs. The Wire, Business, 26-04-2016. Available at https://thewire.in/31539/sebastian-thrun-modi-and-the-forgotten- promise-of-moocs/

Usage of Whatsapp by The Students of the Department of Library & Information Science Kurukshetra University Kurukshetra

Anil Kumar

Jawharlal Nehru Library
Kurukshetra University Kurukshetra
E-mail: anillgujjar7@gmail.com

Abstract: Social networking sites are the most powerful media for finding and sharing information in a short time. There are a lot of tools and applications for social networking sites like Facebook, Twitter, Skype, IMO, Tango, Line, We-chat, BBM, WhatsApp, Viber and Hike etc. WhatsApp is a widespread mobile application for providing instant messaging service for communication between individuals and groups. This study explains the importance of WhatsApp in educational way by the students of the Department of Library & Information Science Kurukshetra University Kurukshetra. To collect the data questionnaire design and circulated among students. This paper explains the frequency, purpose, satisfaction level of WhatsApp features and services, reasons of left groups and advantages of using WhatsApp etc.

Keywords: WhatsApp, Social Network, Library and Information Science Students.

1. Introduction

It is no hidden fact that mobile technology has taken over the society in last few years. Everyone is using mobile technology from children to elders. Mobile technology is vital in today's world and makes everything's easier. Now we are living in the digital age. Through INTERNET and WWW we can find required information on one click. Social networking is the biggest platform to find and share information among people without any physical boundaries. WhatsApp messenger is a proprietary cross platform instant messaging application. The WhatsApp messenger was created by Brian Acton and Jan Koum (both the employees of Yahoo!) in 2009 to make communication and the distribution of multimedia messaging more easily and faster (Bouhnik & Deshen, 2014). This application is available for different mobile platforms like, Android, Blackberry OS, Blackberry 10, iOS, series 40, symbian (S60), and Window Phones. WhatsApp is a free application for users after download in smartphones need a verification code on your mobile number and received this message we communicate people through internet connectivity.

According to Smith (2017) in DMR WhatsApp report, 56 percent Indian used internet and 200 Million have WhatsApp Messenger. WhatsApp supported 10

Indian languages (like Hindi, Bengali, Malayalam, Kannada, Urdu, Gujarati, Punjabi, Telugu, Marathi and Tamil). Average 50 Million minutes are spent on WhatsApp by Indian per-day.

Social media also effect in educational activities and discover new ways of learning in easy access. Now WhatsApp is become the communication gateway for social networking. Through WhatsApp students find and share educational information between individuals and groups. If anyone have information he will be spread it to fulfilled others requirement. Students are shared information related to exam notes, current affairs, classroom activities, information related to assignments and reports, sharing websites links and URLs. They share information in multiform (formats like audio, video, picture and document) through WhatsApp between groups and individuals. The study was based on these objectives:

- To know the period of using WhatsApp.
- To know the frequency of using WhatsApp.
- To know the purpose of using WhatsApp.
- To know the satisfaction level of WhatsApp features.
- To know the positive or negative impacts of using WhatsApp.

2. Review of literature

This paper explain some previous study to establish is need interlink between present study with past. Yeboah and Ewur (2014) conducted a study entitled on "impact of WhatsApp Messenger usage on students' performance in tertiary institution in Ghana". For the purpose of data collection this study include 50 students for interviewed and 500 questionnaires were distributed from five tertiary institution of Ghana in which 418 were return back. Distribution by gender majority of female student were 66 percent while male was 34 percent. The main purpose of using WhatsApp is chatting with friends and Majority of the students said that WhatsApp effected their study in negative way.

Minhas, Ahmed and Ullah (2016) conducted a study on "usage of WhatsApp: a study of university of Peshawer, Pakistan". Total of hundred questionnaire were distributed among the students and response rate is 84 percent that was very high. Majority of age group was 37 percent and they used WhatsApp below two hours daily. The main purpose of using WhatsApp was for chatting 38 percent, sharing picture and video 22 percent, sharing academic information 21 percent, communication with family members and aboard 13 percent and current affaires

news 4 percent.

Sharma and Shukla (2016) find in his study 80 percent students were access regularly WhatsApp and 88 percent students were satisfied with WhatsApp. This study also revealed that purpose of using WhatsApp majority of students were 87 percent chatting and they converse more than ten people per day, 7.2 percent sharing picture and videos, 3.2 percent for voice calling, 1.4 percent voice message, while 1.2 percent sharing documents. In the reply of the question 'Is WhatsApp affecting the academic performance?' Majority of the 65 percent participants was replied yes WhatsApp affecting the academic performance while 23 replied no.

Jisha & Jeba Kumar (2014) find in his study that majority of the students spent eight hours on WhatsApp per-day. The main purpose of using WhatsApp was friends and exchange images, audios and videos. This study further revealed that majority of the students rated 5 on a 5 point scale for the features of WhatsApp like instant messaging, group texting and updating profile image and status on regular basis. The usage of unlimited audio files and video files were given 3 on 5 point scale.

3. Research methodology

To collect data a structure questionnaire was designed and distributed among the students of of the Department of Library & Information Science Kurukshetra University Kurukshetra. The data was fed into computer using MS- Excel for simple frequency calculation and for analysis of data. It explains in chart form using percentage. The response rate is high i.e. 77 percent in which males are 54.55 percent while female are 42.86 percent.

Data Analysis

Part one of the questionnaire is provided information about age, gender and qualification. Majority of the participant are male i.e. 54.55 percent while female 42.86 percent. 42.86 percent of the participants are 31-35 years age group, 31.17 percent are 26-30 years age group, 14.28 percent are below 25 years age group and 11.69 percent are above 36 years age group. Maximum number of the participants i.e. 32.47 percent are post graduate 24.67 percent are graduate, 23.88 percent are Ph.D. research scholar while least number of participants 19.48 percent are Master of Philosophy in Library Science.

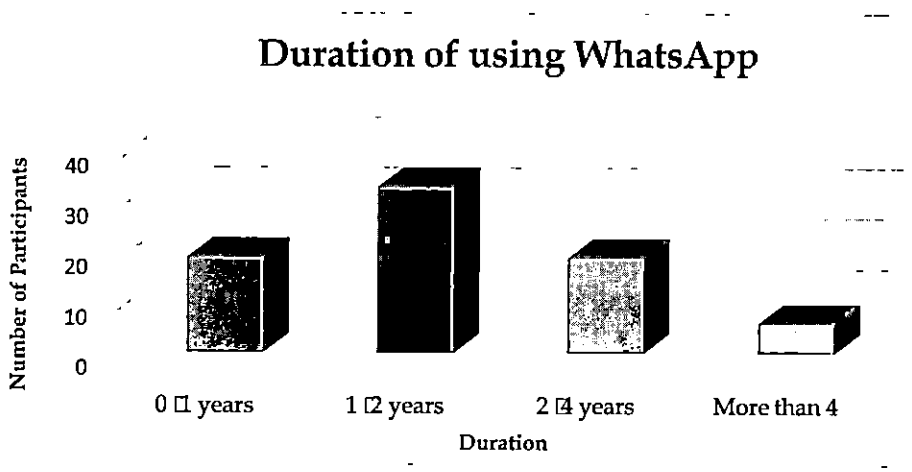
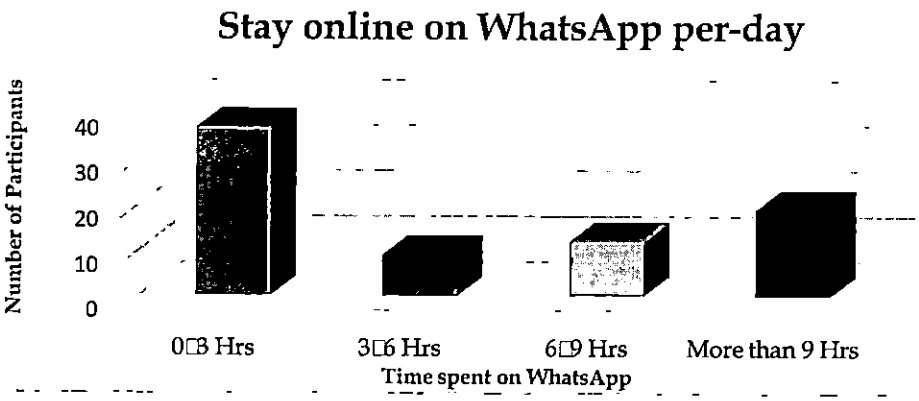
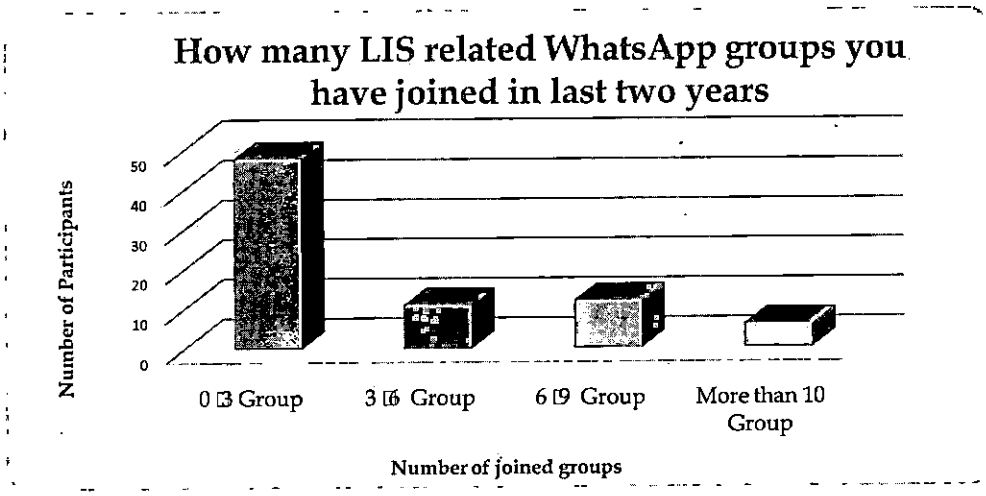


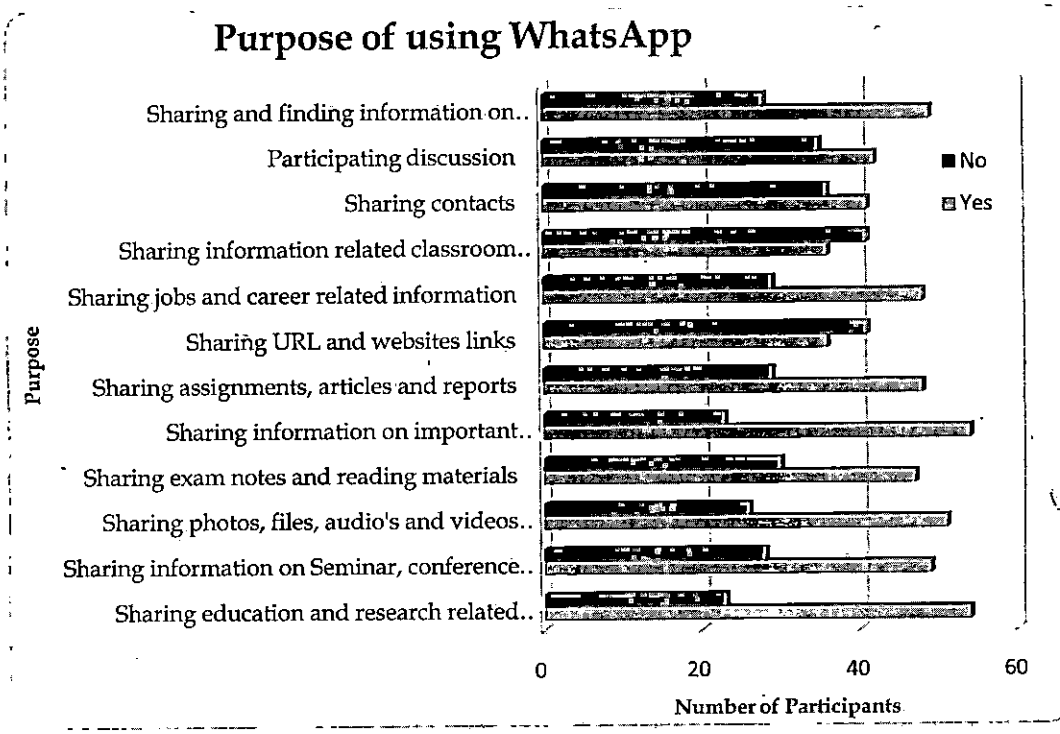
Chart 1 shows that 42.87 percent participant are used WhatsApp last 1-2 years, 24.67 percent participant are used WhatsApp below one year and 2-4 years while 7.79 percent of participants use more than 4 years.



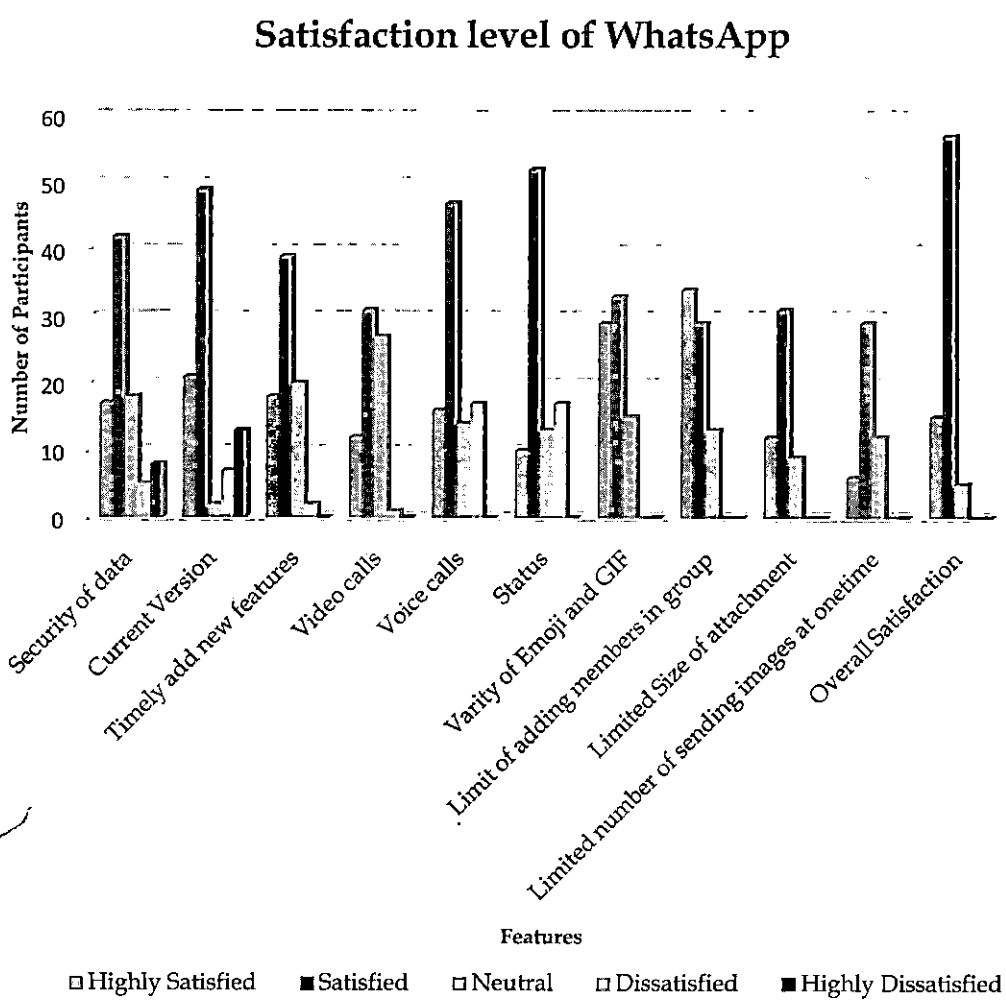
This chart shows that average time stay online on WhatsApp by students. 48.05 percent students are used WhatsApp below 3 hours, 24.68 percent more than 9 hours. 15.58 percent are used it below 6-9 hours while 11.69 percent use it 3-6 hours daily.



Out of 77 participants, 62.35 percent participant were joined 0-3 LIS related WhatsApp group in last two years, 15.58 percent joined 6-9 and 14.28 percent joined 3-6 group while 7.79 percent joined more than 10 WhatsApp group related to LIS. It is evident from the data that majority of the student were joined 0-3 WhatsApp group in last two year related to LIS.

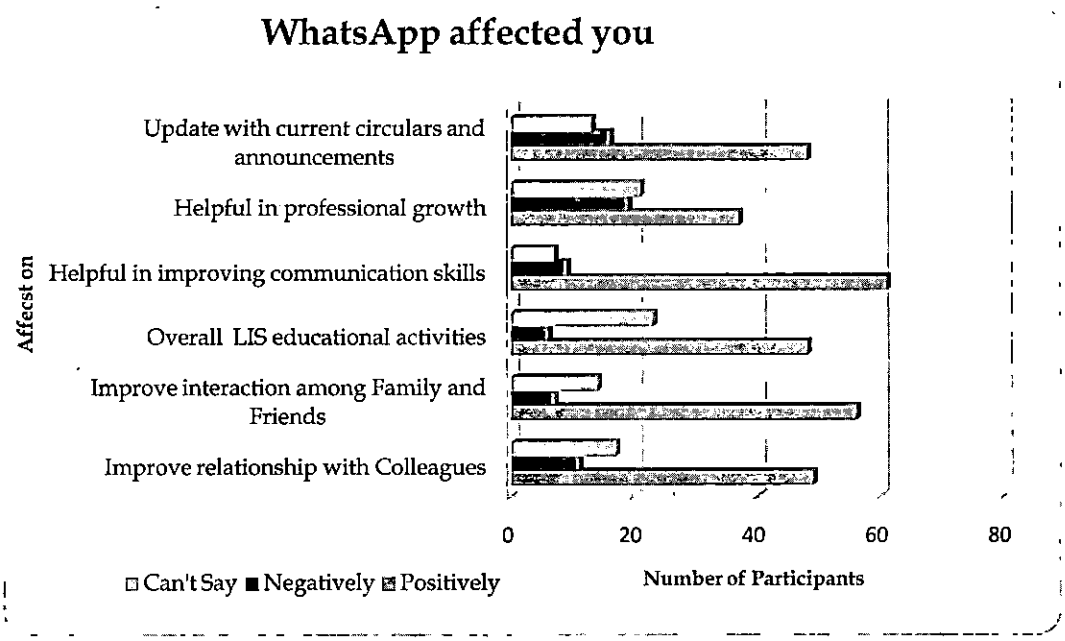


It is important to elicit the opinion on for what purpose the students and research scholars are using the WhatsApp. Out of 77 participants surveyed, majority of participants use it for followed by Sharing education and research related information and Sharing information on important notification and circular 70.13 percent, Sharing photos, files, audio's and videos related to LIS 66.23 percent, Sharing information on Seminar, conference and workshops and Sharing and finding information on competitive exam 63.64 percent, Sharing exam notes and reading materials and Sharing jobs and career related information 62.34 percent, participating discussion 54.55 percent, sharing contacts 53.25 percent while least no of participants use it for sharing classroom activities, URL and websites link.



The finding of this study reveals that majority of the participant are satisfied

with WhatsApp features i.e. update status 76.53 percent, current version 63.64 percent, voice calls 61.04 percent, timely added new features 50.65 percent, security of data 54.55 percent, video calls and limited size of attachment 40.26 percent, variety of emoji and GIF 42.86 percent, limited number of sending images at one-time 37.66 percent. The above table shows that 74.03 percent participant are satisfied, 19.48 percent participant are highly satisfied while least number of 6.49 percent participants neutral with the features of WhatsApp.



The finding of this study reveals that majority of the students and research scholar are agreed that WhatsApp affected him positively in different ways like helpful in improving communication skills 79.22 percent, improving interaction between family and friends 72.73 percent, improving relationship with colleagues 63.64 percent and helpful in overall LIS related educational activities and update with current circular and announcements 62.34 percent. 48.05 percent participants is replied that WhatsApp affected him a negative way like WhatsApp not helpful in profession growth 27.27 percent and 20.78 percent participants replied that they have not received any update and current circular and announcements.

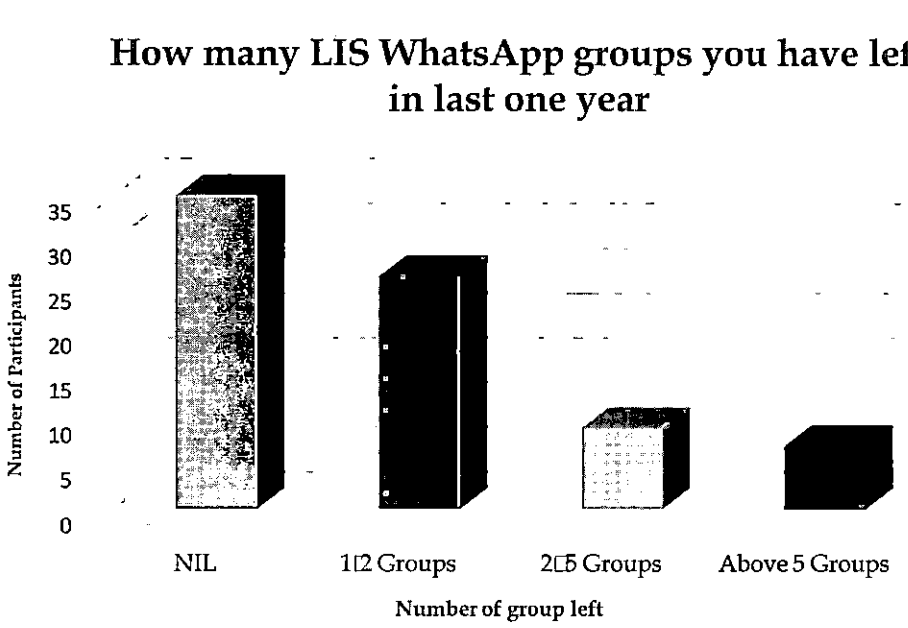
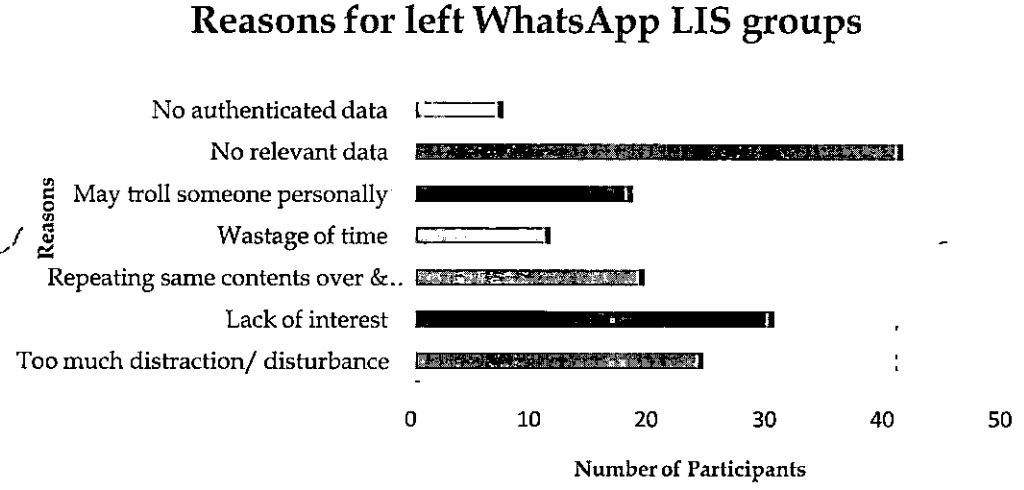
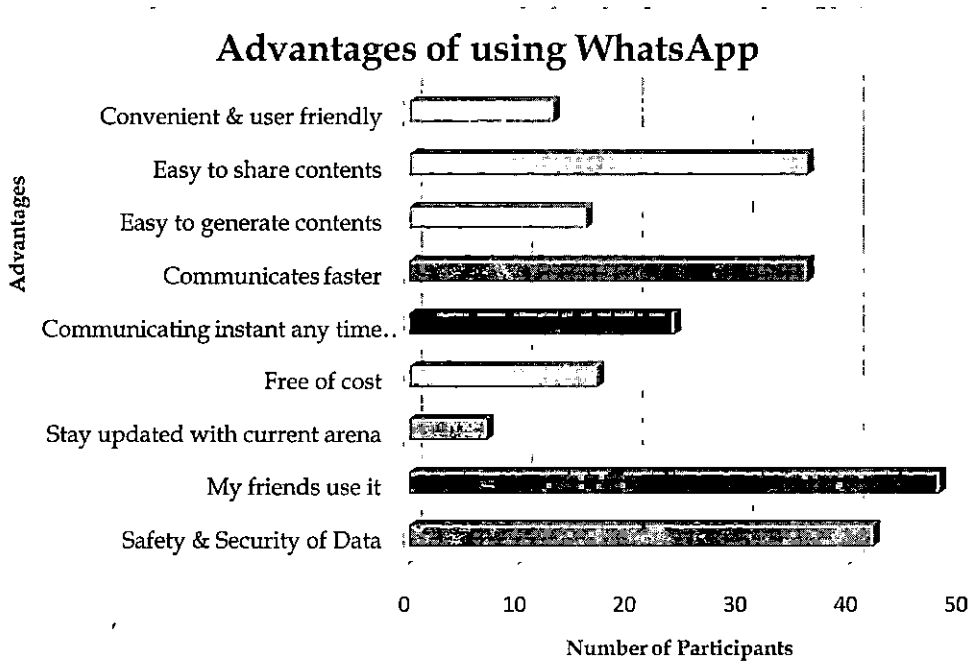


Chart 8 shows that majority of the participants i.e. 45.45 percent said that in last one year they were not left any WhatsApp group related to LIS. 33.77 percent replied that they leave 1-2 group, and 11.69 percent replied that they left 2-5 WhatsApp group while least number of the participants left more than 5 WhatsApp group related to LIS.



Majority of the 55.55 percent participants were left the WhatsApp group related

to LIS in last one year. The main reason of leaving groups are no relevant data 27.33 percent, lack of interest 20 percent, too much distribution/disturbance 16 percent, repeating same contents over and again 12.67 percent, may troll someone personally 12 percent, wastage of time 7.33 percent and no authenticated data 4.67 percent.



Every smart phones user have been installed WhatsApp and there are many advantages of using WhatsApp. Chart 10 shows that majority of 20.08 percent participants is used it because their friends and relatives use it. Major advantages of using WhatsApp according to the participants are safety and security of data 17.57 percent, communication faster and easy to share contents 15.06 percent, communicating instant anytime anywhere 10.04 percent, free of cost 7.11 percent and convenient and user friendly 5.44 percent.

4. Major Findings

- Majority of the participant are male i.e. 54.55 percent while 42.86 percent female.
- 42.86 percent of the participants are 31-35 years age group, 31.17 percent are 26-30 years age group and 11.69 percent are above 36 years age group.

- Maximum number of the participant i.e. 32.47 percent are post graduate 24.67 percent are graduate, 23.88 percent are Ph.D. research scholar while least number of participants 19.48 percent are Master of Philosophy in Library Science.
- 42.87 percent participants use WhatsApp last 1-2 years and they are average time spent on WhatsApp below 3 hours per-day.
- Majority of participants use it for sharing information related to education and research, important notification and circular, Sharing photos, files, audio's and videos, Seminar, conference and workshops and competitive exam.
- The finding of this study is revealed that majority of the participants are satisfied with WhatsApp features i.e. update status, current version, voice calls, timely added new features, security of data, video calls.
- The reasons of left groups is no relevant data, lack of interest and too much distribution/disturbance.
- Major advantages of using WhatsApp according to the participants are safety and security of data, communication faster and easy to share contents.

5. Conclusion

WhatsApp is an effective and affordable communication application. Now a day's mostly students and researchers use it frequently to remain in touch with their friends and family members. Due to the multifaceted functions like messaging, audio and video media format supported by WhatsApp, it has been used widely now. This study has played a key role to let us know about the preferences of the student of the department of LIS Kurukshetra University, Kurukshetra. Students and research scholar use it for sharing information related to education and research, important notification and circular, Sharing photos, files, audio's and videos, Seminar, conference and workshops and competitive exam. They also enjoyed the features of WhatsApp are update status, current version, voice calls, timely added new features, security of data, video calls, variety of emoji and GIF etc.

Reference

1. Army, A. B. (2014). Impact of WhatsApp mobile social learning on the achievements and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal.* 10(22), 116-136.
2. Bansal, T., & Joshi, D. (2014). A study of students experiences of WhatsApp mobile learning. *Global Journal of Human-Social Science Research.* 14(4), 1-8.
3. Bouhnik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research, 13,* 217-231. Retrieved from http://www.jite.org/documents/Vol13/JITEv13ResearchP217-231Bouhnik0601.pdf
4. Chipunza, C. & Rambe. P. (2013). Using mobile devices to leverage student access to collaboratively-generated resources: A case of WhatsApp instant messaging at a South African University. *International Conference on Advanced Information and Communication Technology for Education ICAICTE,* 331-337.
5. Fayaz, H., & Khalique, A. (2016). Review on sociological impacts of social networking. *International Journal of Engineering, Applied Sciences and Technology. 1,* 6-12.
6. Ibrahim, J. & Others (2014). Positive impact of smartphone application: WhatsApp & Facebook for online business. *International Journals of Scientific and Research Development,* 4(12), 1-4.
7. Jisha K & Jebakumar (2014). WhatsApp: a trend setter in mobile communication among Chennai youth. *IOSR Journal of Humanities and Social Science. 19((9)VII), 1-6.*
8. Kenchakkanaver, A. Y. & Hadagali, G. S. (2015). Use of WhatsApp among the research scholar of Karnatak University, Dharwad: a study. *International Research: Journal of Library & Information Science.* 5(3), 548-61.
9. Kumar, N., & Sharma, S. (2017). Survey Analysis on the usage and impact of WhatsApp Messenger. *Global Journal of Enterprise Information System.*

8(3), 52-57.

10. Minhas, S., Ahmed, M. & Ullah, Q. S. (2016). Usage of WhatsApp: a study of University of Peshawer, Pakistan. *International Journal of humanities and Social Science Invention.* 5(7), 71-73.
11. Montag, C., & Others (2015). Smartphone usage in the 21st century: who is active on WhatsApp?. *BMC research notes. 8*(1), 331.
12. Patil, S., Deepthi & Tadasad, P. G. (2015). Usage of WhatsApp messenger amongst post-graduate students in a university environment: A study of Karnataka state women's University, Vijayapura. *International Journal of Multidisciplinary Research and Development.* 2(11), 591-94.
13. Shanmugapriya, S. & Priya, A. (2016). A study on impact of using WhatsApp on reduction of stress. *International Journal of Current Research and Modern Education,* 1(2), 66-79.
14. Sharma, A., Shukla, A. K. (2016). Impact of social messengers especially WhatsApp on youth: a sociological study. *International Journal of Advance Research and Innovative Ideas in Education.* 2(5), 367-375.
15. Sudharani, Y. & Nagaraju, K. (2016). WhatsApp among the students of SVU College of Engineering, Tirupathi. *Journal of Advances in Library & Information Science.* 5(4), 325-29.
16. Susilo, Adhi (June, 2014) *Exploring Facebook and WhatsApp As Supporting Social Network Applications For English Learning In Higher Education.* PDE Professional Development in Education Conference.
17. Willemse, J. J. (2015). Undergraduate nurses reflections on WhatsApp use in improving primary health care education. C*urationis, 38*(2), 1-7.
18. Yeboah, J., & Ewur, G. D. (2014). Impact of WhatsApp messenger usage on students performance in Tertiary Institutions in Ghana. *Journal of Education and Practice, 5*(6), 157-164.

Use Of Internet By Students In Amar Shahid Chandrashekhar Azad Govt. Post Graduate College Niwari (M.P.): User Survey

Dr. Niranjan Singh

Librarian, Kendriya Hindi Sansthan, Agra, (Ministry of HRD, Govt. of India)

Ms Vineeta Jain

Asstt.Librarian, College of Law and Governance Mody University, Laxmangarh (Raj.)

Abstract: The aim of this study was to analyze the use of the Internet and related issues towards the students of Amar Shahid Chandrashekhar Azad Govt. Post Graduate College Niwari, Distt Tikamgarh. A well structured questionnaire was distributed to 75 students out of 120 of the college. The response rate was 62.5%. The present study discuss the various aspects of Internet use such as, Internet browsing places of the respondents, availability of the computer facility along with the internet connectivity in the respondents' house, Motivational source to use internet, Distribution of frequency of using the internet by the , purpose of using the internet. It was found that the Internet became a vital instrument for teaching, research and learning process of these respondents. Internet is the concept which is to be regular in their life like food & shelter.

Keywords: Internet, Network, Information, User study.

1. Introduction

In the age of electronic era university college libraries are transforming its services for the betterment of the user's demands. Now days every most percentage of population are demanding and using internet in his/her routine life like marketing, reservation, social relationship by using mail, whatsApp, education and research. Internet is the world's largest computer network, the network of networks, scattered all over the world. From a handful of computers and users, today the Internet has grown to thousands of regional network that can connect million of users. This global network is not owned by any single individual company or country. Internet browsing behavior is rapidly increasing day to day by all sorts of people in India, as well as in the world. It is very much useful for all the people. In this article we will discuss the internet browsing behavior of college students.

2. Literature Review

An abundance of information is available on the topic of use of Internet of students. This literature review is collected through periodicals, edited books and Internet.

This part is concerned with the review of literature directly related to the present study Researcher has divided literature review into two parts. One related to the foreign authors Literature and the other is Indian authors Literature related to the Use of Internet pattern of various professions that is scientist, journalist, and agriculture students, is scientist, journalist, agricultural students, and engineering students. A review of the literature reveals that the teachers and the students are the most frequent users of Internet. They use Internet for teaching, learning and for the research purposes.

3. Review of Foreign Literature

Becker (1998) conducted a study on the Internet use by 2250 teachers from public and private schools in the U.S. The study revealed that 90% of the teachers had Internet access. More than half of the teachers (59%) had Internet access at home. A majority of the teachers (68%) used Internet to find information resources for preparing their lessons. **Singh** (1998) conducted a research study on the use of Internet by the librarians in Malaysia. The main findings of the study indicated that 90% of the respondents used the Internet for work related purposes. Most of the respondents were recent users. **Voorbij** (1999) examined the use of the Internet amongst students and academicians in the Netherlands. A questionnaire was distributed among 1000 members of the academic community and three focus-group interviews were also held with faculty members. The study revealed that the Web was being used primarily to search general, factual, ephemeral or very specific information. The study also revealed that students and academicians faced many problems while searching the Web. **Williams** (1999) reported the use of information technology and the Internet in his project entitled "Information Technology in Michigan: Adult and Teen Survey Report." The results indicated that the majority of the respondents (72%) used the Internet at least once a week and 45% at least once a day.

Moreover, **Laite**(2000) surveyed 406 graduate and undergraduate students from Shippensburg University. The survey showed that 57.6% of the undergraduate students used the Internet 1-2 times per week and another 37.1% used it 1-2 times daily. More than 50% of the graduate students used Internet 1-2 times per week and 37.7% used it 1-2 times daily. The survey showed that the most used Internet service was e-mail. A hundred percent of the graduates and undergraduate students used e-mail service. **Nicholas et al.** (2003) conducted a study in the UK to examine the use of the web for health information and advice. More than 1300 people were surveyed. The study showed that 66% of the respondents accessed the Internet from home, 28% from work place and the

remainder (6%) used a combination of both work place and home. **Hanauer et. al.** (2004) surveyed a diverse community college to assess the use of the Internet by the students for health-related information. The survey showed that although all the students surveyed had free Internet access through their community college, yet only 97% of the students reported having access to the Internet. The survey showed that 83% Internet users had access to the Internet at their home and 51% of the respondents accessed Internet at college or library. Eighty-one percent of the students reported to access the Internet most for college work and 80% for e-mail/chat. Men and women searched for health information in almost equal numbers.

4. Review of Indian Literature

Bavakutty and Salih (1999) conducted a study at Calicut University, which showed that students, research scholars, and teachers used the Internet for the purpose of study, research and teaching respectively. The purposes of Internet use were: sending and receiving e-mails in connection with academic requirements, making a search on library catalogues, downloading images and communication with the peer. **Kooganurmath and Jange** (1999) conducted a study, which revealed that a majority of the users used the Internet for communication, followed by the access to information. More than 70% of the users used it for higher studies and only 39% used it for discussions with peer groups. The most used services of Internet were e-mail, the Web, discussion forums, FTP and Telnet.

A study conducted by **Mahajan and Patil** (1999) revealed that the purpose of using Internet by research workers at Pune University was to conduct literature search; for students was to know curriculum based information; for teachers to find supporting information to write articles. **Naushad Ali** (2000) conducted a study at Aligarh Muslim University, Aligarh. The study showed that more than 50% of the study population was satisfied regarding the timings of the Internet service, but were not satisfied with staff's cooperation, and reservation facility. Majority of the respondents were not happy with the number of nodes available. **Chandran** (2000) conducted a study at S V University, Tirupathi, which showed that more than 25% of the respondents used the Internet for 2-3 times a week and more than 56% used it for accessing information. A majority of the respondents used the Web and e-mail services of Internet. The purposes of using Internet included communication and information gathering. The sources used for identifying information about Internet included website itself, journals and magazines, staff and newspapers. A majority of the respondents used general websites as compared to recreational and discipline oriented websites. Recently, **Mishra**

Yadav and Bisht (2005) conducted a study to know Internet utilization pattern of the undergraduate students of G B Pant University of Agriculture and Technology, Pantnagar. The findings of the study indicated that a majority of the students (85.7%) used the Internet. Out of the Internet users 67.7% were male students and 32.3% female students. The findings of the study also showed that 61.5% of the males and 51.6% of the females used Internet for preparing assignments. A majority of the respondents i.e. 83.1% male and 61.3% female respondents indicated that they faced the problem of slow functioning of Internet connection.

Kanaujia and Satyanarayana (2003) conducted a study of the Science & Technology community of Lucknow city to assess the level of awareness and demand of web based learning environment among Science & Technology information seekers. The major findings of the study revealed that 49.2% users browsed the Web for more than 2 to 4 hours and 14% for more than 5 hours a day. The study further showed that 36.6% users consulted e-journals regularly on the Internet, 40.4% used Internet for consulting technical reports, 24.8% to find online databases and 10.4% for telnet service.

5. Need for the Present Study

The overall so many number of people using Internet coupled with recent techniques of information resources on the Internet may have considerable implications for teaching, learning and research. Students have depending more and more on the Internet for their various educational purposes. The present study is, focused the effectiveness and use of Internet for various purpose with special reference to the students of Amar Shahid Chandrashekhar Azad Govt. Post Graduate College.

The Internet is an inseparable part of today's daily life as well as other educational system. UGC invest a good deal of amount on providing this facility to both the all users. It is, therefore, important to find out up-to what extent they are utilizing this facility.

For this purpose it expects them to utilize it for education purposes, it is necessary to conduct a study to determine whether Internet is used for academic activities and how the Internet has influenced the academic efficiency of the target users. The study also explores the satisfaction level of the users with the Internet facility provided by the Amar Shahid Chandrashekhar Azad Govt. Post Graduate College under study. The study has particularly been taken up to assess the benefits of Internet over conventional documents.

6. Scope and Limitations of the Study

The Present study is only concentrated Students on Amar Shahid Chandrashekhar Azad Govt. Post Graduate College Library users under the jurisdiction of Dr. Hari Singh Gaur University, Sagar Madhya Pradesh. The study is also limited for the period of 2015-16.

7. Objectives

The present study is an attempt to find out the pattern of using the Internet by the students of Amar Shahid Chandrashekhar Azad Govt. Post Graduate College Library Users. The study was conducted with the following objectives:

1. To study the use of the Internet by the students in College under study.
2. To study the Internet Browsing places of the respondents
3. To identify the availability of the computer facility along with the internet connectivity in the Respondents' house.
4. To examine the impact of Internet for the Motivational source to use internet
5. To Distribution of frequency of using the internet by the respondents, Purpose of using the internet.

8. Methodology

The structured questionnaire was framed and circulated to the randomly selected students of Amar Shahid Chandrashekhar Azad Govt. Post Graduate College by using the simple random sample method. All the filled questionnaires has been collected, tabulated and discussed by using charts are also used to focus the results clearly.

Discussion: All the '75' questionnaire were collected out of 120. The response rate was 62.5 % .Response, compiled, tabulated and calculated in the following manner.

Table - 1: Gender wise Distribution of the Respondents

Sex	No. of respondents	%
Male	23	30.7
Female	52	69.3
Total	75	100.00

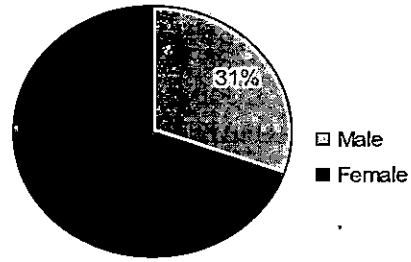


Figure I

From the table I, **69.3%** of the respondents are from **female** population and the remaining **30.7%** from the **male** population.

Table - 2: Internet browsing places of the Respondents

Browsing place	No. of respondents	%
House	2	2.7
University	38	50.7
Browsing Centre	33	44.0
Friend's House	1	1.3
Relative's House	1	1.3
Total	**75**	100.00

From the table 2, 50.7% of the students are browsing the internet in the college itself. 44% of the respondents are browsing the internet in the internet centre. Only 2.7 % of the students are browsing in the house. 1.3 % of the students browsing in the friend's house and also another 1.3% of the students are browsing in their relative's house.

Table - 3: Availability of the computer facility along with the internet connectivity in the Respondents' house

Computer facility available in the home		Internet facility available in the home	
Yes	**No**	**Yes**	**No**
30 (40%)	45 (60%)	11 (36.7%)	19 (63.3%)

From, the table 3, only 30 students (40%) has the computer facility and 45

students (60%) do not have the computer in their home. From these 30 students, only 11 (36.7%) students got the internet connectivity and 19 (63.3%) students do not have the internet connectivity in their computers.

Table - 4: Motivational source to use Internet

Motivational Source	Frequency	%
Friends	14	18.70
Relatives	3	04.00
Teachers	16	21.30
Parents	4	05.30
Media (TV, Radio, Newspapers etc.,)	2	02.70
Self	36	48.00
Others	-	-
Total	75	100.00

In the above mentioned table 4, 48% of the students not getting any motivation/ introduction about the internet from other sources. 21.3% of the students were motivated to use the internet by their teachers. 18.7% of the respondents were motivated by their friends. 4% of the students were motivated by their relatives other than parents. 5.3% were motivated by their parents and 2.7% of the respondents were motivated to use the internet by the media like TV, Newspapers, and Radio etc.

Table 5: Distribution of frequency of using the Internet by the Respondents

Time	No. of frequencies	%
Once in a day	17	22.70
Twice in a day	4	05.30
Weekly once	21	28.00
Weekly twice	19	25.30
Monthly once	8	10.70
Rarely	5	06.70
Not yet	-	-
Others	1	01.30
Total	75	100.00

From the table 5, 28% of the students are using the internet once in a week, 25.3% of the students are using the internet twice in a week, 22.7% of the

students are using the internet daily, 10.7% students are using the internet once in a month, 6.7% of the respondents are using the internet very rarely and 5.3% of the students are using the internet twice in a day, 1.3% students are not coming under any category.

Table - 6: Purpose of using the Internet

Purpose	Frequencies
Education	45
Entertainment	8
Research	30
E-Mail	36
Latest News	15
Product awareness	4
Chatting	2
Others	1

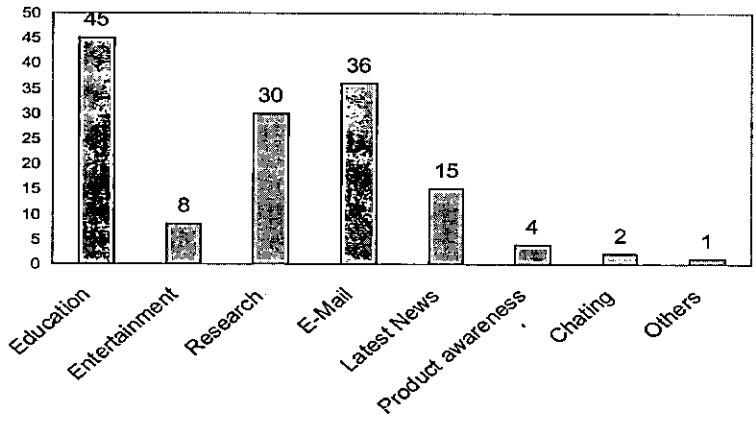


Figure II: Purpose of using the Internet

From the table 6, **45** respondents are using the internet for **education, 36** students for **e-mail , 30** students for **research, 15** students for **latest news & 8** students for **entertainment**, **4** students for **product awareness**, **2** students for **chatting** and 1 student is not coming any category. Here one respondent may one or more option like education and entertainment etc.

9. Conclusion

It has been with the conclusion drawn under the study by analysis of Data to find out the real position of **Use of Internet of Students in Amar Shahid Chandrashekhar Azad Govt. Post Graduate College, Niwari: A User Study Survey** and attempt has been made by way of the recommendations and suggestions to solve the problem find during the study. From the above analysis, in this article 40% of the students have the computer facility in their home, but majority i.e. 60% of the students not having this facility in their homes. More than 21.3% students accepted that the introduction of internet is from their teachers. 28% of the respondents are browsing the internet once in a week. 45 % users browsing the Internet for the education purpose, from this study, it is very much impressed about the awareness and knowledge of the internet concept by the students. Also, majority of the students (more than 50%) are browsing the internet at least once in a week or daily. So, internet is the concept which is to be regular in their life like food & shelter.

References:

1. Alexis Leon, Mathews Leon, (1997). Internet for everyone, Vikas Publishing House, New Delhi
2. Asemi, A. (2005). Information searching habits of Internet users: A case study on the Medical Sciences University of Isfahan, Iran. *Webology*, 2(1). Retrieved May 21, 2015, from http://www.webology.org/2005/v2n1/a10.html
3. Bavakutty, M., & Salih Muhamad, T. K. (1999). Internet services in Calicut University. *National Convention Academic Libraries in the Internet Era.* Organized by INFLIBNET, 18-20 February 1999, Ahemdabad, p.37-44.
4. Becker, H.J. (1998). Internet use by teachers. Retrieved May 21, 2015, from http://www.crito.uci.edu/TLC/findings/Internet-Use/startpage.html
5. BPB publications, (2007). Internet Complete, BPB publications, New Delhi
6. Chandran, D. (2000). Use of Internet resources and services in S. V. University, Tirupathi environment. *Conference on Information Services in a Networked Environment in India.* Organized by INFLIBNET, 18-20 December 2000, Ahemdabad, p.3.124-3.127.

7. Hanauer D., Dibble E., Fortin, J., & Col, NF. (2004). Internet use among community college students: Implications in designing healthcare interventions. *Journal of American College Healt*, 52(5), 197-202.
8. Kanaujia, S., & Satyanararayana, N.R. (2003). Status of awareness and demand of web-Based learning environment among the S&T information seekers. *International Conference on Mapping Technology on Libraries and People*, Organized by INFLIBNET, 13-15 February 2003, Ahemdabad, p.587-593.
9. Kaur, A. (2000). Internet facility at GNDU: A survey. *National Seminar on Academic Libraries in the Modern Era*, Organized by IASLIC, 4-6 December 2000, Bhopal, p. 119-124.
10. Kooganurmath, M. M., & Jange, S. (1999). Use of Internet by social science research scholars: A study in academic libraries in the Internet era. *National Convention Academic Libraries in the Internet Era.* Organized by INFLIBNET, 18-20 February 1999, Ahemdabad, p.478-483.
11. Laite, B. (2000). Internet use survey: analysis. Retrieved May 21, 2015, from http://www.ship.edu/~bhl/survey/
12. Mahajan, S.G., & Patil, S.K. (1999). Internet: Its use in university libraries in India. *National Convention Academic Libraries in the Internet Era.* Organized by INFLIBNET, 18-20 February 1999, Ahemdabad, p.483-488.
13. Mary Lojkine, (2004). Internet in easy steps, Dream-tech Press, New Delhi – 2
14. Mishra, O.P., Yadava, N., & Bisht, K. (2005). Internet Utilization Pattern of Undergraduate Students. *University News*, 43(13), p.8-12.
15. Naushad Ali, P.M. (2000). Internet and its use in Aligarh Muslim University: A survey. *Conference on Information Services in a Networked Environment in India.* Organized by INFLIBNET, 18-20 December 2000, Ahemdabad, p.1.78-1.82.

About Authors



Dr. Niranjan Singh (born on January 01, 1970 at Fatehpur, U.P., India) did M. Com. (1990) from Bundelkhand University, Jhansi, MLISc. (1993) PGDCA (2001) from Jiwaji University, Gwalior, M.P., Ph.D. (2000) from Dr. Bhim Rao Ambedkar University, Agra. Presently he is working as Librarian at Central Institute of Hindi, Agra (Ministry of HRD, Govt. Of India). Earlier, he has worked as a Librarian at KLSD College, Ludhiana (Punjab). He is Managing Editor, Journal of Library and Information Communication Technology (JLICT), Associate Editor, International Journal of Digital Library Services (IJODLS) -Electronic, Associate Editor, International Journal of Library and Information Management (Previously known as Journal of Library and Information Management) and Member, International Journal of Professional Development. He has published 46 articles in National, International journals and Conference Proceedings and seven important books. He is a life member of ILA and UPLA.

E-mail: niranjan_19702004@yahoo.co.in,



Ms. Vineeta Jain is presently working as Assistant Librarian in Mody University of Science and Technology, Lakshmangarh (Rajasthan). She holds a graduation in Science and Masters in Library and information Science from SOS, Library & Information Science, Jiwaji University, Gwalior and pursuing a Ph.D. from Pacific university Udaipur (RJ). She has a post graduate diploma in computer applications. Ms. Jain started her carrier as a librarian in RSC College, Gwalior. She has been working in the field of library, since last 12 years. She has a good knowledge of Librarianship. She has organized a successful National seminar in the month of November 2012 at College of Life Sciences, Gwalior. One Edited Book in her account.

E-Mail: vineetajain.clg@modyuniversity.ac.in

Use of Mobile Apps & Devices by the Students and Research Scholars in the Department of Library and Information Science, University of Delhi

Ritu Rana

M.L.I.Sc (University Of Delhi)
SPA(Aryabhatta College, DU)
Email.rituraana1@gmail.com

Abstract: The study is based on the Use of Mobile Apps and Devices by the Students (BLISc. & MLISc.) And Research Scholars (MPhil. & PhD) pursuing their respective courses in the Department of Library and Information Science, University of Delhi during the 2016-2017 academic year. The main objectives of the present study is to Know the purposes for using and impact of mobile phones on LIS students' , Know the place of access of mobile phones and time spent on the use of mobile phones, Analyze use of mobile services such as mobile Internet, E-mail, WhatsApp, and allied applications, Understand awareness about techniques and methods of accessing information through mobile phones, Find out the information accessed by LIS students; and Know the impact of mobiles on behavior and ascertain the diverse effect of mobile technologies on learning and Understand the mobile phone description used by the students of the Department of Library and Information Science (DLIS), University of Delhi.

1. INTRODUCTION

The technologies have made communication and access to information very convenient. Internet and mobile access are the two major attractions amongst the younger generation. However, with the advent of wireless communication technologies, the internet and its allied technologies are accessed from portable hand held devices like mobile phones (M-phone), Personal Digital Assistance (PDAs) etc. It is observed that in the recent years the use of such portable devices has increased phenomenally. So the concepts like virtual network, virtual library, M-library etc are in force. There are different brands, models and public networks are available in the market for m-phone services, each of them having distinct features and operating styles. Only users can find which devices and network services are best suited for their work and interest.

2. MOBILE TECHNOLOGY

Mobile technology is exactly what the name indicates – technology that is portable; it refers to any device that you can carry with you to perform a wide variety of

"tasks". It is technology that allows those tasks to be performed via cellular phone, PDA, vehicles, laptops, etc. A standard mobile device has gone from being no more than a simple two-way pager to being a cellular phone, a GPS navigation system, a web browser, and instant messenger system, a video gaming system, and much more. It includes the use of a variety of transmission media such as: radio wave, microwave, infra-red, GPS and Bluetooth to allow for the transfer of data via voice, text, video, 2-dimensional barcodes, QR Codes and more.

3. Mobile Apps

A mobile app is a computer program designed to run on a mobile device such as a smartphone or tablet. According to Google Play, the official app store for the Android operating system, mobile apps can be classified into various categories. The rise of mobile devices and mobile apps brings people convenience and more entertainment. For users of social networking sites (SNSs), mobile devices and mobile apps enable them to contact family, friends, and colleagues anytime and anywhere. Using smartphones can improve users' social status, increase the frequency of social interaction, and provide opportunities to know other person, which has caused social apps to become one of the most popular types of entertainment. To date, many researchers have investigated the issues surrounding various applications of mobile device technology..

4. LITERATURE REVIEW

A Research has been conducted with combination of term such as: "Smart phones and students", "Mobile Apps", "Mobile Phones and LIS students", "India" in Library and Information Science Abstracts (LISA), Emerald Database, Library and Information Science Technology Abstract (LISTA), SAGE, Google scholar, print journal were also scanned to complete the review of literature for the proposed study, including a search of some general search engines. The review of literature is presented in the preceding section on different aspect. Hsiao, Kou-Lun (2017) Compulsive usage of mobile applications may have a negative effect on people's health and social interaction. Past studies have indicated that personality traits were related to compulsive usage of technologies, but most of them have explored the factors from the system and interface design perspectives, specifically.

Ma, Dandan, et. al. (2016) The purpose of this paper is to identify enablers and inhibitors to the adoption of mobile internet services by socioeconomically disadvantaged people: an understudied population adversely affected by digital inequality.

Mansour, Essam A. H. (2016) Smartphones are one of the most common devices accessed and used by people worldwide. They have become one of the main tools to get quick access to information. A smartphone is one of the most ubiquitous, dynamic and sophisticated trends in communication.

Potnis, Denendra Dilip, et. al. (2016) Mobile applications and mobile websites (MAMW) represent information systems that are increasingly being developed by libraries to better serve their users. Because of a lack of in-house IT skills and the knowledge necessary to develop MAMW, a majority of libraries are forced to rely on external IT professionals who may or may not help libraries meet users' needs but instead may deplete libraries' scarce financial resources. Wu, Dan (2016) Mobile users increasingly employ location-based map searches in their daily lives. However, it is still relatively unknown about mobile users' map related search behaviors.

Canuel, Robin and Crichton, Chad (2015) The purpose of this paper is to assess the response of Canadian academic libraries to the rapid proliferation of mobile application (apps), many of which are useful for research, teaching, and learning.

Dukic, Zvjezdana, and Chiu, K. W. (2015) The purpose of this paper is to provide an overview of higher education students' experiences in using smartphones for learning purposes, and their perceptions of the suitability of smartphones for learning. A qualitative research method is applied to data collection and analysis by following the grounded theory approach.

Elahi, Hasinul, and Islam, Shiful (2014) This research paper aims to present an overview of the perception of the students regarding possible use and implementation of mobile phones in library services for Dhaka University Library (DUL).

Nowlan, Gillian (2013) The purpose of this paper is to determine how students at the University of Regina would like to interact with the library on their mobile devices and how to best construct a mobile site to suit the university community's needs.

Madhusudhan, Margam (2012) The main purpose of the paper is to explore how research scholars of University of Delhi integrated Social Networking Sites (SNSs) into their daily communication for research work.

5. METHODOLOGY

The method followed for the study is survey method with the help of Structured Questionnaire was design keeping in view of the stated objectives consisting of

open ended and closed ended questions. The questionnaire consists of 13 main questions in addition to demographic characteristics (4 questions) with many of the main questions having a number of subsidiaries. The questions are designed for users to elicit their experience with the following main factors: (i) use Mobile devices (ii) Internet-enabled mobile devices (iii) type of Internet network connectivity (v) period of using Mobile App(s) (vi) Sources Mobile Apps skills (vii) frequency use the mobile Apps (viii) time spent daily in visiting mobile Apps (ix) downloading mobile device (x) use of mobile apps for different activities (xi) Name top five apps (xii) affected by Mobile Apps (xiii) benefits of mobile Apps, and (xiv) problems faced while using mobile Apps.

The sample size of the study is 60 taken from all. B.LI.Sc. M.LI.Sc., MPhil. & PhD students of the DLIS, University of Delhi.

6. LIMITATION OF THE STUDY

Major limitation of the present study is restricted to use of Mobile Apps and Devices by students and research scholars. The study does not contain a significantly large enough sample from across the departments to draw meaningful widespread conclusions. Second limitation is the geographical area is restricted to Student and research scholars of Library and Information Science, University of Delhi (BLISc., MLISc., M.Phil., and PhD.).

7. DATA COLLECTION AND ANALYSIS

The collected data is organized and tabulated by using simple statistical method. Data was input in MS-Excel for analysis and interpretation and the findings of the study have been put into the following successive tables and charts with their interpretations. The questionnaires were distributed to the users and library professionals of respective institutions and therefore the collected data has been analyzed. Overall 60 questionnaires were distributed out of which 50 were received back i.e. the total response rate is 83.33%.

1. Demographic Information

1.1 Age – Wise Distribution of Students

Table 1.1 Ages – Wise Distribution of Students

Course	20-25	26-30	31 and above
BLISc	12	8	

MLISc	15	9	
MPhil	1	4	
PhD		1	

From the table it can be seen that use of mobile apps between age group of 20-25 is more as compare to other age groups

1.2 Total number of Male and Female students using mobile technology

Table 1.2 Total number of Male and Female students using mobile technology

Course	Male	Female	Total
BLISc	8	12	20
MLISc	11	13	24
MPhil	2	3	5
PhD	1		1

From the Table it can be seen that mobile technology used by females is more as compare to males especially in BLISc and MLISc courses

1.3 Comparison of Respondents of BLISc , MLISc, MPhil and Phd Students

Table 1.3 Comparisons of Respondents of BLISc, MLISc, MPhil and PhD Students

S No.	Course	Respondent	Percentage
1	BLISc	20	100
2	MLISc	24	100
3	MPhil	5	100
4	PhD	1	100

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, PhD Scholar N=1)

From the above table it can be seen that total number of 20 questionnaire were distributed to BLISc and 100% response were given by them same in MLISc , MPhil and PhD 100% response was obtained from them.

1.4 Mobile Devices used by the Students

The utilization of mobile device services in the educational environment, explores the nature of mobile device use among students, and investigates the perception of departmental students on mobile devices uses in library.

Table 1.4 Mobile Devices used by the Students

Mobile Device	BLISc Students	MLISc Students	MPhil Students	Phd Scholars
Laptop	12	16	5	1
Smartphone	14	18	5	1
Tablet		1		
E-Book Reader				

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, Phd Scholar N=1)

Mobile Devices used by the Students

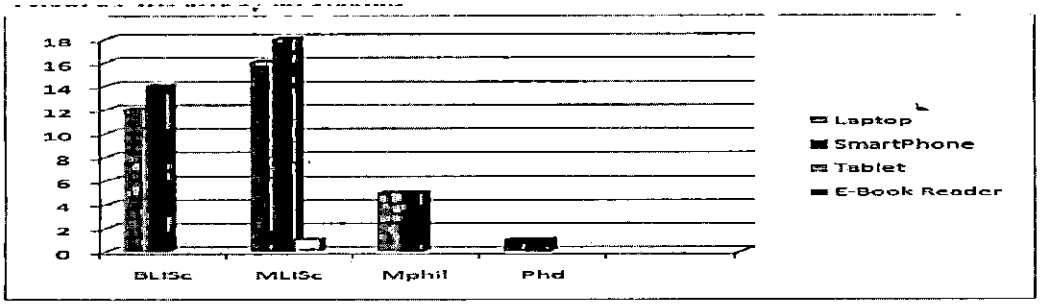


Fig 1.4 Mobile Devices used by the Students

Table 1.4 shows that smart phones and laptops are more popular between students and research scholars rather than tablet and E – Book Reader.

1.5 Internet –Enabled mobile devices currently used by the students

Student's uses smartphones, laptops etc. which works on various operating system platforms like IOS, Android, Blackberry and Windows

Table 1.5 Internet –Enabled mobile devices currently used by the students

Operating System	BLISc Students	MLISc Students	MPhil Students	PhDScholars
IOS	2	3		
Android	16	19	5	1
Blackberry				
Windows	2	2		1

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, PhD Scholar N=1)

Internet –Enabled mobile devices currently used by the students

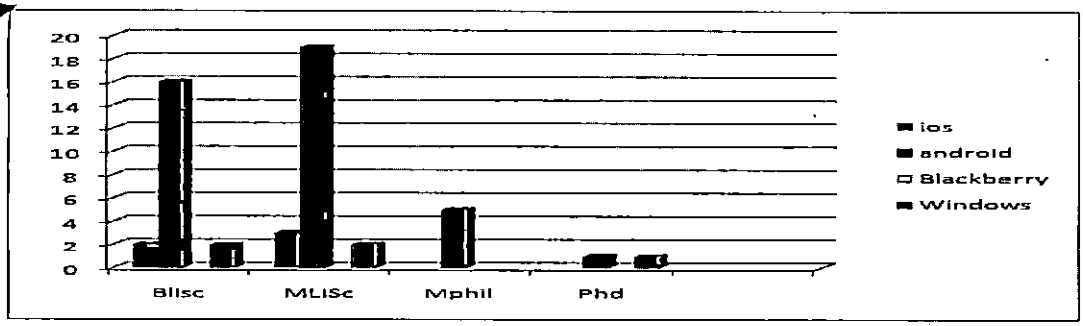


Fig 1.5 Internet –Enabled mobile devices currently used by the students

From the figure it can be seen that there more number of Android users as compare to other operating systems. As android users feel that there are variety of apps are available as compare to other operating systems.

1.6 Internet network connectivity used for mobile services by the students

Internet is much needed tool in this century. Student's Mobile devices should be compatible with 3G, 4G networks and to Wi-Fi networks.

Table 1.6 Internet network connectivity used for mobile services by the students

Network	BLISc Students	MLISc Students	MPhil Students	Phd Scholars
Cellular Networks (3G, 4G Data)	13	17	3	1
University Wi-Fi Network	10	9	3	1
Home Wi-Fi Network	9	13	2	

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, Phd Scholar N=1)

Internet network connectivity used for mobile services by the students

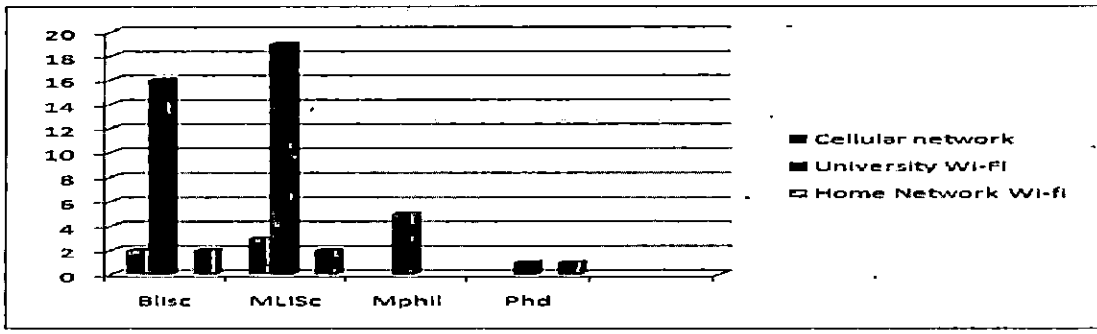


Fig. 1.6 Internet network connectivity used for mobile services by the students

Figure can be seen that students and researchers are using cellular networks more widely as compare to Wi-Fi networks because most of the students and researcher find cellular networks rates are cheaper and provide accessibility anywhere to the network. But Wi-Fi students are limited to one area only for accessing the internet they are unable to move far from the range of Wi-Fi network.

8. Knowledge of Mobile App Skills

For Using Mobile devices skills are very important to efficiently use the device apps.

Table 1.7 Knowledge of Mobile App Skills

App Skills	BLISc Students	MLISc Students	MPhil Students	Phd Scholars
Guidance From Friend	20	24	5	1
Guidance From supervisor				
Trial and error method				
Guidance from Library staff				

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, Phd Scholar N=1)

Knowledge of Mobile App Skills

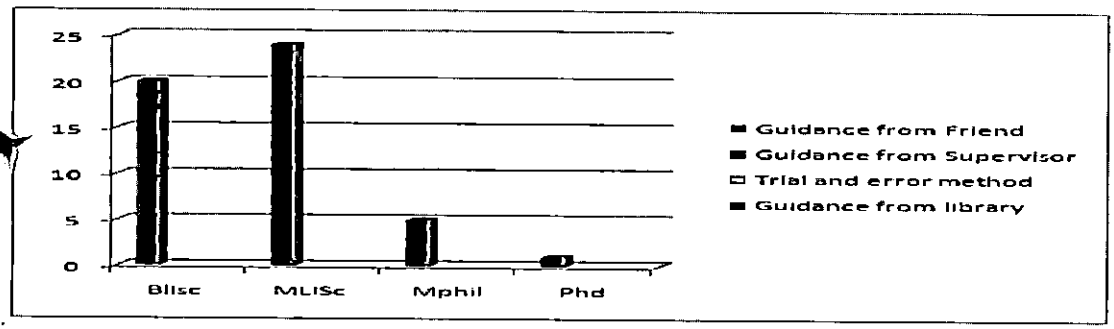


Fig 1.7 Knowledge of Mobile App Skills

From the table it can be seen the most of the students are guided from their friends. As youngsters are regularly day today updated and are very curious about new technologies.

9. Frequency of Using Mobile Apps

As there is tremendous growth in mobile technology. People are slowly becoming bound of using Mobile devices. Example today students and scholars are bound to pay their examination fees online and there are various mobile apps for payment transactions.

Table 1.8 Frequency of Using Mobile Apps

Frequency	BLISc Students	MLISc Students	MPhil Students	Phd Scholars
Daily	20	24	4	1
Twice in a week			1	
Fortnightly				
Monthly				
Occasionally				

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, Phd Scholar N=1)

Frequency of Using Mobile Apps

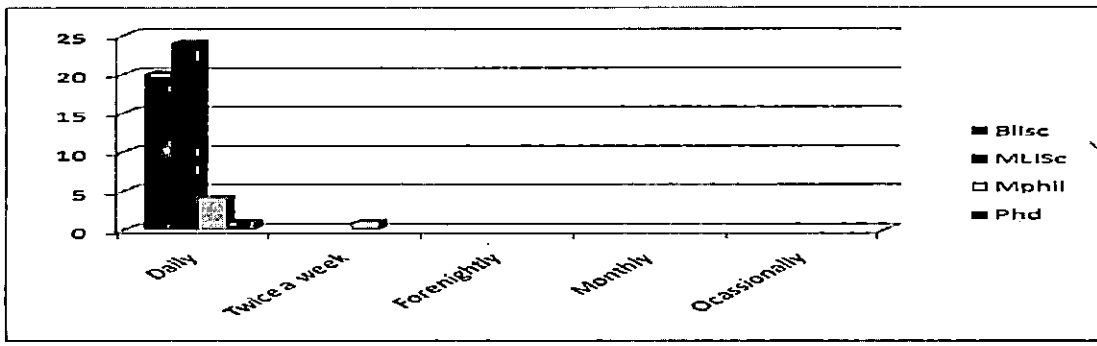


Fig 1.8 Frequency of Using Mobile Apps

From the figure it can be seen that daily users of mobile are increasing tremendously as today information about anything can be accessed via internet app of the mobile app.

10. Time Spent Daily in Visiting Mobile Apps

Students are investing lots off time in mobile apps as apps regularly update them whatever new going on in the society or in technology.

Table 1.9 Times Spent Daily in Visiting Mobile Apps

Time	BLISc Students	MLISc Students	MPhil Students	Phd Scholars
Less Than one hour	5	3		1
One Hour	11	15	3	
2-3 Hour	4	6	2	

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, Phd Scholar N=1)

Time Spent Daily in Visiting Mobile Apps

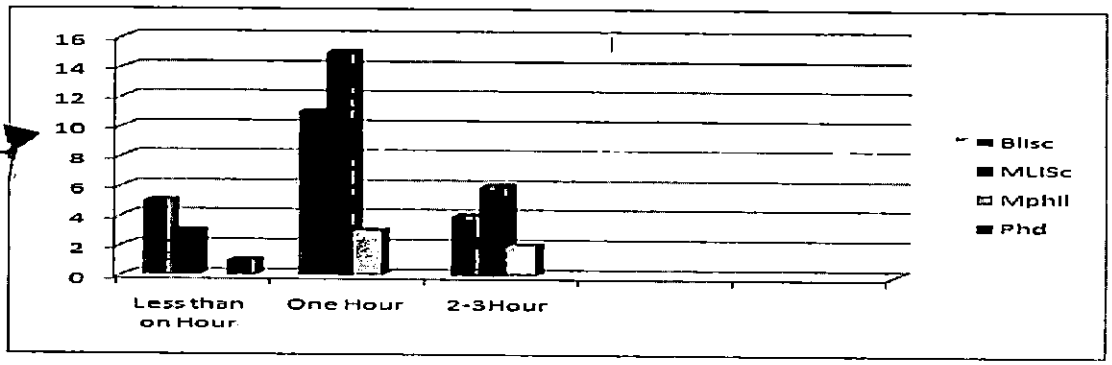


Fig 1.9 Time Spent Daily in Visiting Mobile Apps

From the figure it can be seen that most of the students spent minimum one Hour on mobile apps.

11. Affection by Mobile Apps

With the advancement of technology sand its attractiveness students are getting addictive to mobile apps as from the previous table it has shown the time spent by user on the mobile

Table 1.10 Affection by Mobile Apps

Affection	BLISc Students	MLISc Students	MPhil Students	PhD Scholars
Addiction to Mobile Apps	1	3	1	1
Affecting Academic Performance	11	2	3	
Stay up and lack of sleep	6	15	1	
Unable to concentrate on Study	2	2		

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, PhDScholar N=1)

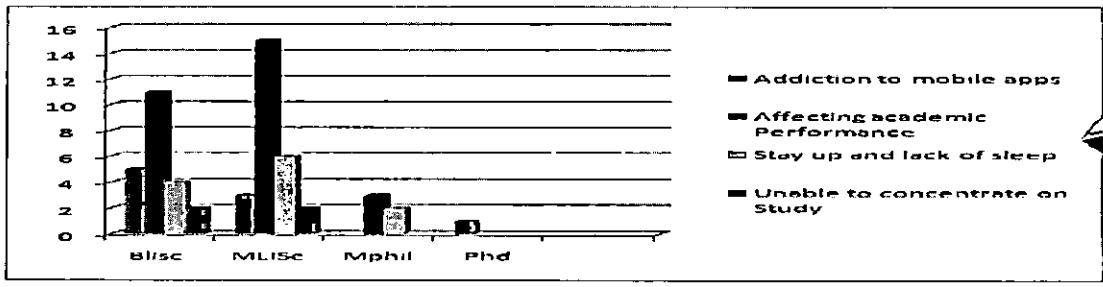


Fig 1.10 Affection by Mobile Apps

From the Figure it can be seen that mobile Apps has greatly affect the student's academic performance and mental illness increased among them due to lack of sleep.

12. Use of Mobile Apps, a waste of time?

As number of apps launched day today some are useful or some wasteful apps.

Table 1.11 Use of Mobile Apps, a waste of time?

	BLISc Students	MLISc Students	MPhil Students	PhD Scholar
Yes	8	6		
No	9	14	2	
May Be	3	4	3	1

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, PhD Scholar N=1)

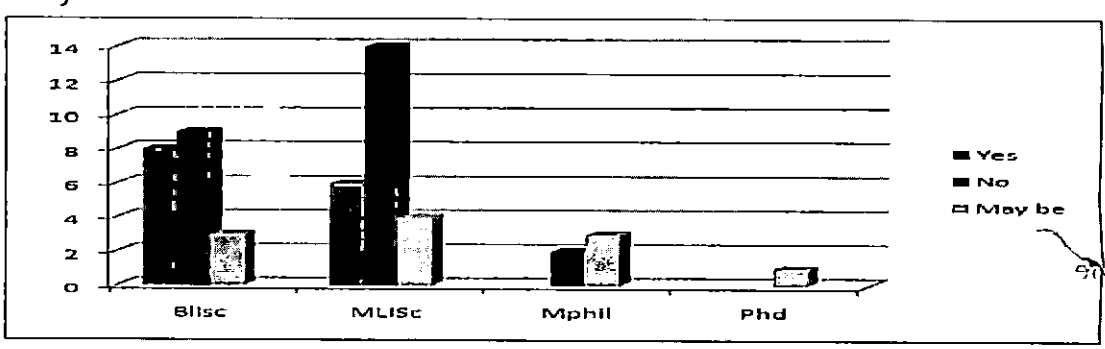


Fig 1.11 Use of Mobile Apps , a waste of time?

From the Figure it can be seen that mobile apps are very useful. It is the medium to information within a time.

13. Mobile Apps influence student's academic/research efficiency

Mobile apps are very helpful for someone who can develop read and write web skills, Increase self-esteem and well being

Table 1.12 Mobile Apps influence student's academic/research efficiency

	BLISc Students	MLISc Students	MPhil Students	PhD Scholar
Develop read and write web skills	5	6	3	
Help in academic/reading and learning	15	18	1	
Increase selfesteem and well being	1			1

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, PhD Scholar N=1)

Mobile Apps influence students' academic/research efficiency

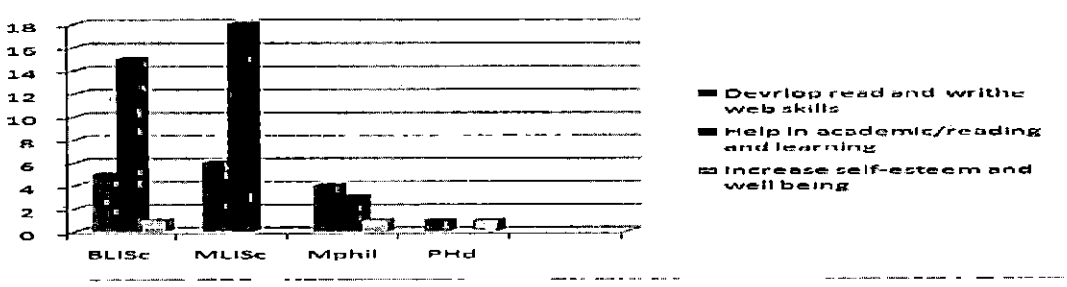


Fig 1.12 Mobile Apps influence students' academic/research efficiency

Above figure shows that most of the students use mobile apps for reading and learning and to increase their knowledge skills.

14. Most Used Mobile Apps by the Students

Most of the popular apps are used by students and scholars who are described below in the figure

Table 1.13 Most Used Mobile Apps by the Students

Mobile Apps	BLISc Students	MLISc Students	MPhil Students	PhD Scholars
Whats App	20	18	5	1
Facebook	20	21	5	1

Instagram		1		1
Twitter	13	13		
Pdf Reader	18	4		
Gmail	18	19	3	
Opera				
Uc Browser	5	8		1

(BLISc Students N= 20, MLISc Students N-24, MPhil Students N=5, PhD Scholar N=1)

Most Used Mobile Apps by the Students

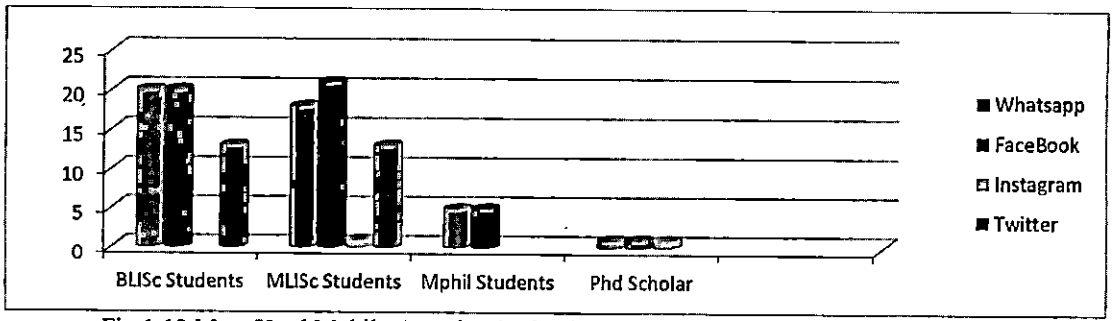


Fig 1.13 Most Used Mobile Apps by the Students

From the figure we came to know that in current trend Whats app and Facebook are most usable Apps by Students and research Scholars.

15. FINDINGS

It has been observed from the study that Users and Research Scholars have greater use of mobiles to strengthen their various academic and research activities by accessing internet on mobiles.

- Findings also showed that 100% of respondents who owned mobile phone used two or more of its functions continuously or by need.
- This study shows that mobile services are already ubiquitous among the students and Research Scholars and are likely to grow.
- Mobile phones are inevitable tools of ICT. Application of mobile phones to provide library and information services will open new pathway towards this trend.

16. CONCLUSION

Due to the advancement of ICT, new technologies devices and tools are emerging day by day to fulfill the demand of the users. Mobile phones are inevitable tools of ICT. Application of mobile phones to provide library and information services will open new pathway towards this trend. This can be an astonishing means to outreach the users, enabling them to access library resources and services from anywhere any time even when they are on move. For this purpose the use of technology is very essential. Mobile technology has become boon to the libraries. A library may reach the remote users effectively by adopting of mobile technology in its services.

REFERENCES

1. Abdul Karim, N. S., Darus, S. H. and Hussin, R.(2006), "Mobile phone applications in academic Library services: a students' feedback survey", Campus-Wide Information Systems, Vol. 23 No. 1, pp. 35-51.
2. Bilawar, Prakash Bhairu. "Use of Mobiles by Library and Information Science Professionals: A Survey."DESIDOC Journal of Library & Information Technology 35.6 (2015): 422-26. WeB..
3. Bomhold, Catharine. "Mobile services at academic libraries: meeting the users' needs?" Library Hi Tech 32.2 (2014): 336-45. Web.
4. Chang, Chiao-Chen. "Library mobile applications in university libraries." Library Hi Tech 31.3 (2013): 478-92. Web.
5. Dukic, Zvjezdana, Dickson K.w. Chiu, and Patrick Lo. "How useful are smartphones for learning? Perceptions and practices of Library and Information Science students from Hong Kong and Japan." Library Hi Tech 33.4 (2015): 545-61. Web.
6. Elahi, Md. Hasinul , and Md. Shiful Islam. "Go Fast, Go with Mobile: Students perception on implementing mobile based library services at Dhaka University Library." Library Philosophy and Practice (2014): 1-14. Web.
7. Gerlich, Nicholas R., et. al. "App Consumption: An Exploratory analysis of the uses &Gratifications of Mobile Apps", 19.1 (2015): 69- 81. Print.

8. Hsiao, Kou-Lun. " compulsive mobile application usage and technolostress: the role of personality traits", Online Information Review, 41.2 (2017): 2-35. Print.
9. Madhusudhan, Margam. "Use of social networking sites by research scholars of the University of Delhi: A study." The International Information & Library Review 44.2 (2012): 100-13. Web.
10. Malathy S and Kantha P. Application of Mobile Technologies to Libraries. DESIDOC Journal of Library &Informaton Technology. 2013 (Sept);33(5): 361-366
11. Mansour, Essam. "Use of smartphone apps among library and information science students at South Valley University, Egypt." The Electronic Library 34.3 (2016): 371-404. Web.
12. Scott La Counte, "Introduction," In Mobile Library Services: Best Practices, ed. Charles Harmon And Michael Messina. (Maryland: Scarecrow Press, 2013), v-vii.
13. Sharma, Dhara and Sahoo, Dipti Ranjan. " application of mobile technology in library services: an overview", International Journal of Information Technology and Library Science, 3.1 (2014)
14. Sudesh Kumar Sood and Ipsita Mukherjee. Mobile technology in emerging library and information services. Conference Papers; 1st SPL Annual Convention (NCLTDP-2013) , Agra, Y K Publishers, 2013, 211-218
15. SudhirRamdasNagarkar. Use of Mobile Technology in Library services. Indian Streams Research Journal. 2011 (Dec); 3(11): 1-4 ISSN No : 2230-7850

Wireless Technology In Academic Libraries: A Case Study Of Bangalore University Library

Podili Anjaneyulu

II Year, MLISc
Bangalore University
anjaneyulu.podili07@gmail.com

Abstract: The provision of Wi-Fi in colleges has now become essential due to increasing availability of educational materials online. It acts as an extension of classroom learning. The present survey aims to understand the wireless information access among postgraduate students of Bangalore University. Questionnaires were distributed among postgraduate students of various departments to collect data. The survey highlights that students mostly accessed Wi-Fi in hostels and the most preferred medium being laptop. Various problems faced by students in accessing Wi-Fi include poor infrastructure, lack of experience in using Wi-Fi as well as lack of technical assistance. Adequate steps can be taken by the university based on the suggestions given by students to improve the Wi-Fi infrastructure.

Keywords: Wireless access, Wi-Fi, PG Students, Wi-Fi infrastructure, Bangalore University.

1. Introduction

The rapid development in Information & Communication Technology (ICT) and increasing availability of digital content has resulted in many universities providing Wi-Fi connection for its students. It provides several advantages and acts as an extension of classroom learning. It provides access to wider variety of educational material available online and facilitates distant learning. Wireless internet is essential to align learning with current technology trends. Provision of wireless access in university campus is no longer a luxury but a key ingredient among the facilities provided by the university.

2. About the University Library:

Came into existence in the year 1966 by inheriting document collection of about 58000 books and several bound volumes of periodicals held by Central College Library then affiliated to University of Mysore. The Library was shifted to Jnana Bharathi Campus in the year 1975. It has a rich collection of more than 4 lac volumes and subscribes to >200 print journals. The career information resources

center helps hundreds of students to prepare for competitive Examinations likes UGC-NET, UPSC, KPSC, Banking and Railway Recruitment. All the housekeeping activities of library have been automated using OSS Koha. OPACs of multiple libraries of BU have been hosted on a single cloud platform. The OPAC gives direct links to full texts of licensed e-books and chapters. The library has set up an E-resources portal giving single point access to thousands of E- Journals, E-Books, E-Theses, etc., both subscribed and Open Access. Remote access facility enable students, research scholars and faculty 24*7 access to e-resources outside the university campus. Digital Repository of BU Scholarship has been set up using OS digital software. E-prints giving access to about 6000 publications. More than 1100 BU Theses have been uploaded to National Repository of ETDs, Shodhganga. BU Question Paper Bank has been set up using OSS Dspace.

3. Review Literature

Mangkhollen Singson (2012) looks into the level of Wi-Fi awareness and the problem face by the student community in the campus and their level of competence. The study involved a questionnaire survey of students (n=100) and revolves around the students residing in the campus hostel and as such the off campus students were ignored for the study. The parameter for the research was ICT literacy, Wi-Fi awareness, connectivity problem, usage, gadget preference. The outcomes of the finding suggest that although the calls for radical transformations in educational approaches may be legitimate it would be misleading to ground the arguments for such change solely in students' opinion and that the infrastructure indeed shows a great deal of benefit to the student in the way they connect online. The finding also identified the problem in Wi-Fi hotspots and the coverage. **Veena G (2015)** conducted a study is to find out the awareness and use of Wi-Fi infrastructure among students community of Mangalore University for different academic purposes. The result of the study shows that majority of students are aware of the existence Wi-Fi facility, and they are satisfied with present Wi-Fi facility. The research study suggested that University Library should arrange different user awareness programme /orientation and training programs to educate the learners how to use the new technologies to achieve their educational goals.

4. Objectives

- Identify the frequency of accessing Wi-Fi service by the students

- To find out the preferred place of accessing Wi-Fi
- To find out the most commonly used gadget to access Wi-Fi
- Evaluate the purpose of using Wi-Fi
- Analyse the problems associated with Wi-Fi access

5. Methodology

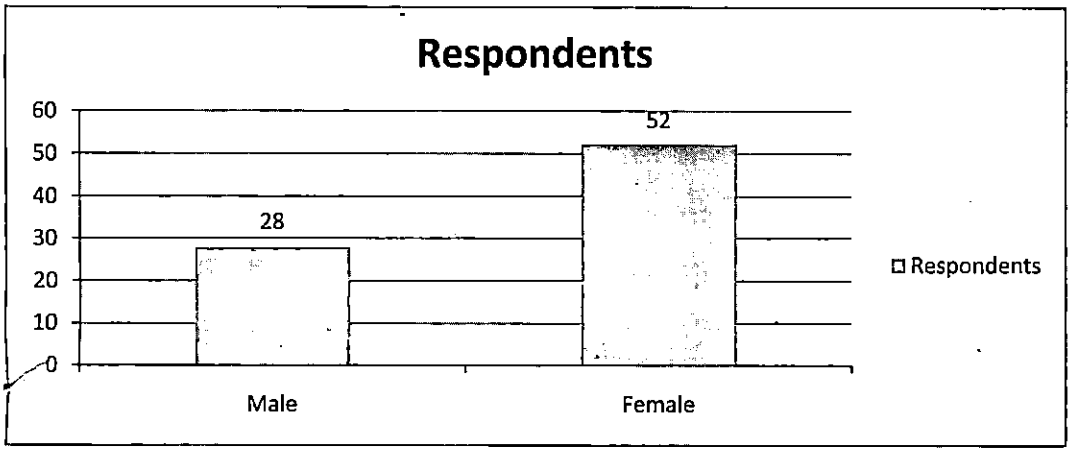
Questionnaire method was used to collect data in the present study. 100 questionnaires were distributed among post graduate students of various departments. The study received back 80 filled in questionnaires.

Data Analysis and Interpretation

Table 1 Gender wise distribution of the respondents

Gender	Respondents	%
Male	28	35%
Female	52	65%
Total	80	100%

Among the users considered for the study there were 28 (35%) males and 52 (65%) females.

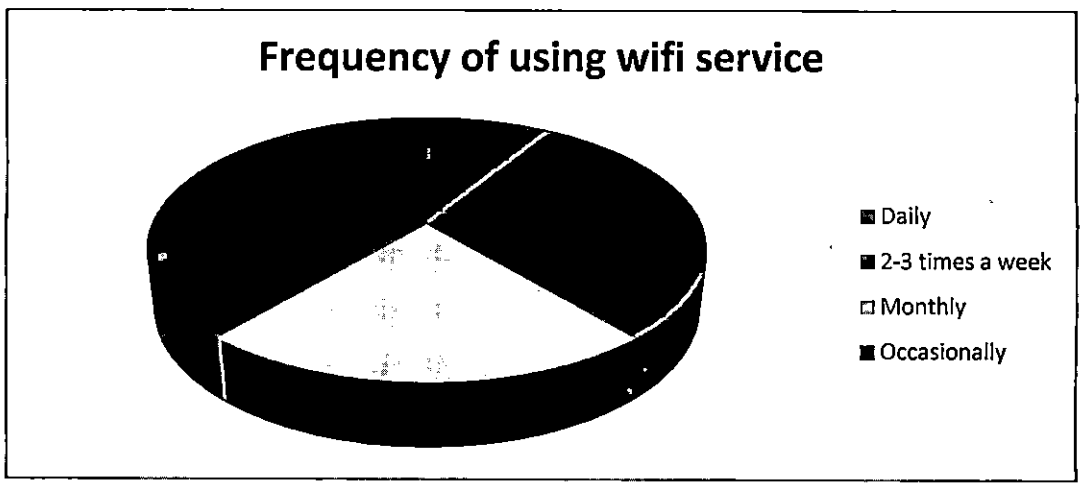


Graph 1: Gender wise distribution of the respondents

Table 2 Frequency of accessing Wi-Fi service

Frequency of accessing Wi-Fi service	No of students	%
Daily	7	8.75%
2-3 times a week	24	30%
Monthly	18	22.5%
Occasionally	31	38.75%
Total	**80**	**100%**

The above table indicates the frequency of accessing Wi-Fi by the students. 7 (8.75%) students said they accessed it daily, 24(30%) students accessed it 2-3 times a week, 18(22.5%) said they accessed it monthly while 31 (38.75%) responded that they accessed it occasionally.

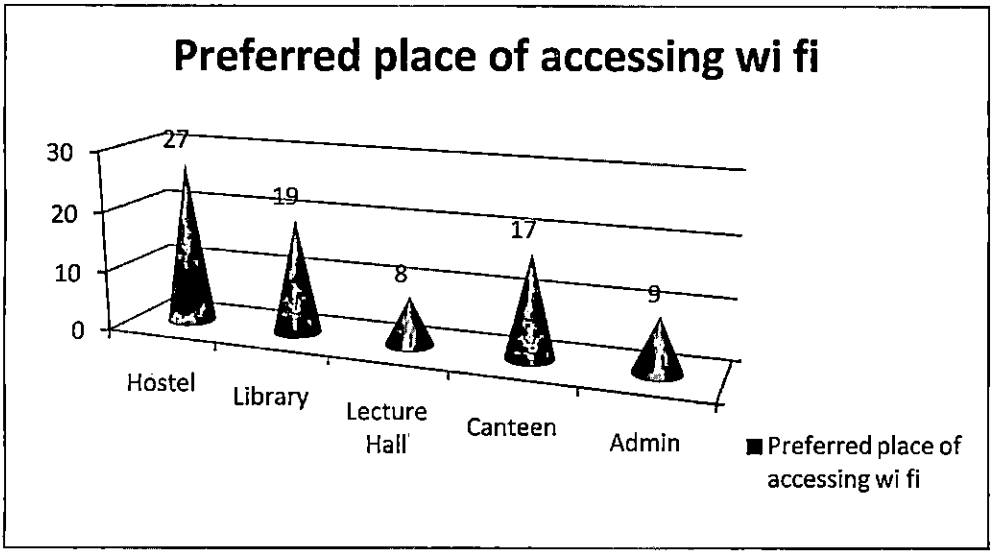


Graph-2: Frequency of using Wi-Fi service

Table 3 Place of accessing Wi-Fi

Place of accessing Wi-Fi	No of students	%
Hostel	27	33.75%
Library	19	23.75%
Lecture Hall	8	10%
Canteen	17	21.25%
Admin	9	11.25%
Total	80	100%

The above table indicates the preferred place of accessing Wi-Fi. 27(33.75%) students accessed it hostel, 19(23.75%) accessed it library, 8(10%) students accessed it in lecture hall, 17(21.25%) accessed it in canteens and 9(11.25%) preferred to access it in admin block.

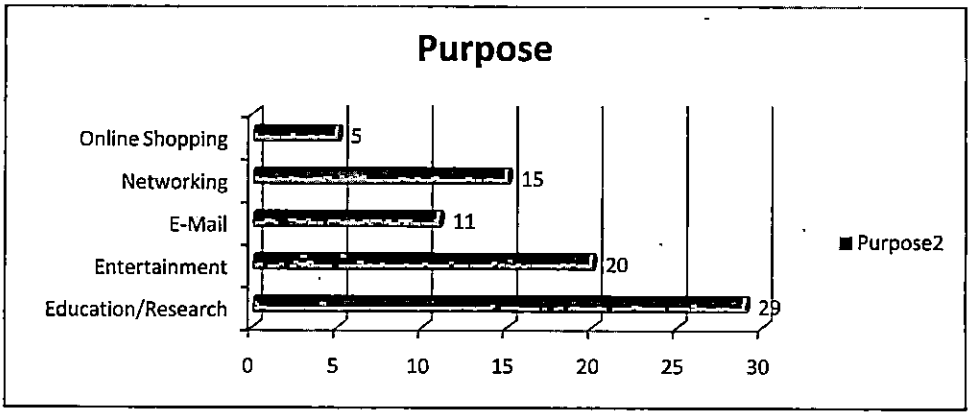


Graph-3: Preferred place of accessing Wi-Fi

Table 4 Purpose of using Wi-Fi

Purpose	No of Students	%
Education/Research	29	36.25%
Entertainment	20	25%
E-Mail	11	13.75%
Networking	15	18.75%
Online Shopping	5	6.25%
Total	**80**	**100%**

The above table indicates that 29(36.25%) accessed Wi-Fi for the purpose of education and research, 20(25%) students for the purpose of entertainment, 11(13.75%) for sending E-Mail, 15(18.75%) for networking and 5(6.25%) accessed it for online shopping.

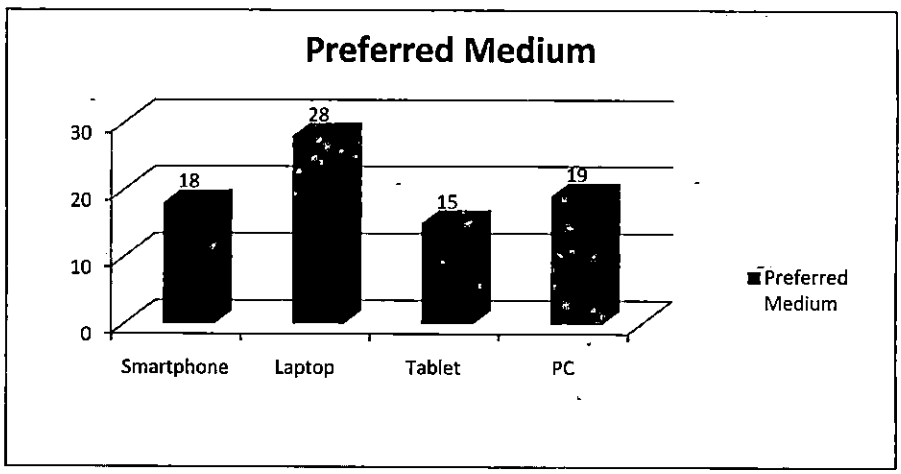


Graph-4: Purpose of using Wi-Fi

Table 5 preferred medium of using Wi-Fi on campus

Preferred Medium	No of students	%
Smartphone	18	22.5%
Laptop	28	35%
Tablet	15	18.75%
PC	19	23.75%
Total	80	100%

The above table shows that Laptop was the most preferred medium of accessing Wi-Fi (35%), followed by PC (23.75%), smart phone.(22.5%) and tablet (18.75%).

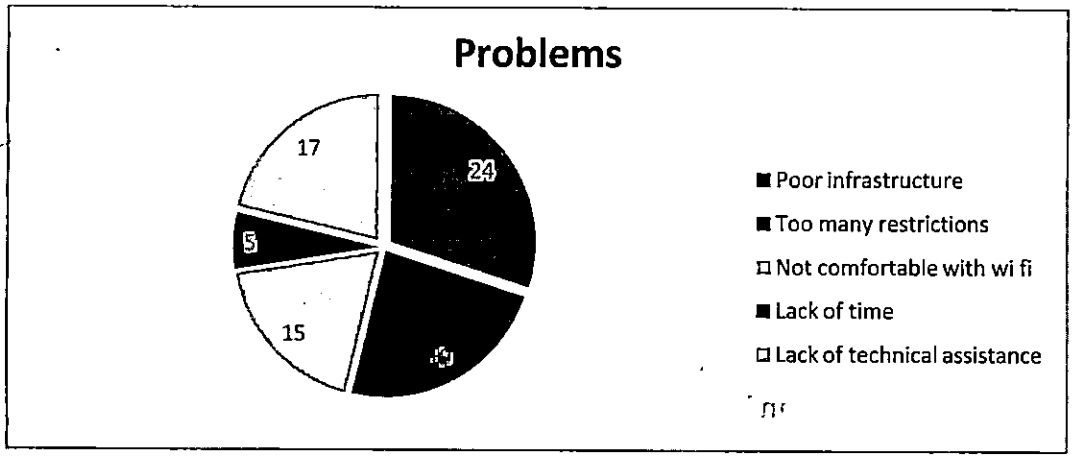


Graph-5: Preferred medium of accessing Wi-Fi

Table 6 Perceived problems associated with Wi-Fi access

Problems	No of students	%
Poor infrastructure	24	30%
Too many restrictions	19	23.75%
Not comfortable with Wi-Fi	15	18.75%
Lack of time	5	6.25%
Lack of technical assistance	17	21.25%
Total	**80**	**100%**

The above table indicated the problems faced by students in accessing Wi-Fi. 24(30%) cited poor infrastructure as the problems in using Wi-Fi, 19(23.75%) said there were too many restrictions, 15(18.75%) said they were not comfortable using Wi-Fi, 5(6.25%) cited inadequate time and 17(21.25%) cited lack of technical assistance as the main problem in using Wi-Fi.

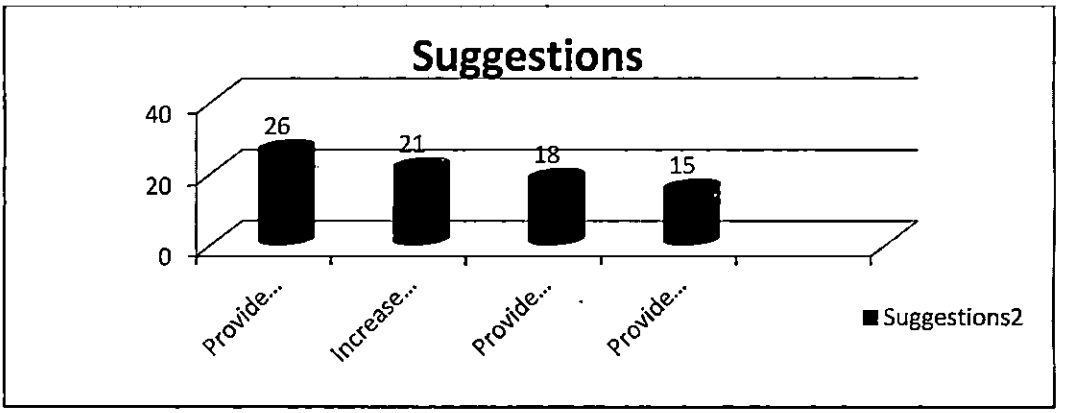


Graph-6: Problems faced in using Wi-Fi

Table 7 Suggestions for improving Wi-Fi

Suggestions	No of students	%
Provide more access points	26	32.5%
Increase Bandwidth	21	26.25%
Provide username/password	18	22.5%
Provide technical assistance	15	18.75%
Total	**80**	**100%**

The above table shows that 26(32.5%) students suggestion providing more access points for improving Wi-Fi, 21(26.25%) wanted increased bandwidth, 18(22.5%) requested that username/password be provided to them and 15(18.75%) revealed the need for technical assistance in case of problems faces in accessing Wi-Fi.



Graph-7: Suggestions for improving Wi-Fi

6. Conclusion

The study shows that hostels are the most common place of accessing Wi-Fi with laptop being the most preferred medium. Some of the common problems faces by students in accessing Wi-Fi include poor infrastructure and inability to use Wi-Fi. Hence steps can be taken to rectify the problems. The number of hotspots and the size of the bandwidth can be increased as suggested by the students.

References

1. Gururaj F. D. et.al. (2015) Wireless Network Use and Awareness Of Surana College Students: A Study. Knowledge Librarian, 3(2), 70-73.
2. Mangkhollen Singson & Rajesh (2012). Awareness and use of Wi-Fi infrastructure in student's community: a case study by Pondicherry University on campus students http://eprints.rclis.org/17514/6/Wi-Fi.pdf 2012
3. Ravindra M. Mendhe (2015) Use and Awareness of Wireless Network (Wi-Fi) By Students of Nmims (Deemed to be University): A Case Study Deputy Li-

brarian, NMIMS (Deemed to be University, Mumbai), Shirpur Campus (M. S.), India. Knowledge Librarian, 02(04), 337-339.

4. Veena, G (2015). Perception and Usage of Wi-Fi Infrastructure among Students Community. International Journal of Academic Library and Information Science 3(11), 336-341

Author Profile



PodiliAnajenyulu is 2nd MLISc Student in Bangalore University, Bangalore. He has Participated 34 National and International Conferences and Workshops and He has Presented 13 Papers in National and International Conference. He Has Participated 16 other Events.

A Study on Use of Electronic Resources by the Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India

Awadhesh Singh Gautam,

PhD Research Scholar,
Department of Library and Information Science,
Assam University (A Central University), Silchar-788011, Cachar, Assam, India
E-mail- awadheshgautam1987@gmail.com, awadheshdlisc@gmail.com

Dr. Manoj Kumar Sinha

Associate Professor and Head,
Department of Library and Information Science,
Swami Vivekananda School of Library Sciences,
Assam University (A Central University), Silchar-788011, Assam, India
E-mail: mksinha1965@gmail.com, dr_mk_sinha@yahoo.com, hod_lis@aus.ac.in

Abstract: Today`s world Internet, which is rightly a milestone in the history of information, is the best way to share and preserve information easily. The information which is available on Internet can be easily accessible through electronic resources and these electronic resources are very important for the advancement of the academic world. this perspective the libraries have no other option than to build collection on electronic resources. At present web-based electronic resources have become most popular tools for academic/educational research. The situation of Electronic Resources is an up-to-date source of information and they can be accessed from any computer, which is associated to the campus network and the internet. The impact of ICT including WWW and Internet is visible in every walk of life. The libraries are not the exception. Due to electronic publishing, many e-resources in the form of e-journals, e-books and on-line / off-line databases are being published. The academic libraries especially colleges and universities libraries have been procuring these resources for their libraries. Due to escalation in the cost of learning resources both printed and e-resources and financial problems the academic libraries are facing , the consortia models are being adopted and experimented for the procurement and access to e-resources by the colleges and universities.

The first part of paper introduces the e-resources and the second part of the paper describes the use of e-resources by the post-graduate students and research scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh. In order to ascertain the usage of the journals by the research scholars and teachers of Aligarh Muslim University, Aligarh, Uttar Pradesh, the present study has been conceived to find out the use of e-resources which have been given access to the post-graduate students and research scholars in the university campus mainly at Central Library and Departmental Libraries.

For this study survey method has been used using questionnaire as a data collection tool. This study has been carried out during the period January, 2016 to June, 2017. This is a preliminary pilot study conducted on smaller sample to ascertain the validity of the questionnaire. The simple random sampling technique has been adopted for the study.

The findings of the study reveals that the library users have adopted the Internet, online / offline electronic resources or web resources very quickly and at the same time the elderly library users are not comfortable using e-resources.

Keywords: Electronic Resources; Aligarh Muslim University; University Library; Uttar Pradesh, India

1. Introduction

Our world in 21st century is brimming with information which directly and indirectly influences our lives. For long period of time it has been a tendency of human being to preserve information and share it with others. This trend ultimately makes information permanent. In Today`s world internet, which is rightly a milestone in the history of information, is the best way to share and preserve information easily. The information which is available on internet can be easily accessible through electronic resources and these electronic resources are very important for the advancement of the academic world. In prior times libraries were considered to be the best place to preserve the books and access information. Persons had to visit the library and they have to search out the appropriate books from the number of books. This takes lots of time and human labor as well. But today the scenario has been changing. Using technology libraries have reached at every door steps. Just one click can open the whole world of information. With growing popularity of electronic resources libraries are leaving behind their traditional traits and absorbing modern computer and internet technology. It is very important in this technological world for the library to be updated and for this library should be redesigned. Previously most of the libraries acquisitions were limited to books, serials, microfilms and audio visual material but with the advancement of information communication technology, information explosions, availability of huge amount of documents in electronic gradually replaced by e-documents. In this perspective the libraries have no other option than to build collection on electronic resources. At present web-based electronic resources have become most popular tools for academic/ educational research. The situation of Electronic Resources is an up-to-date source of information and they can be accessed from any computer, which is associated to the campus network and the internet. Besides these Electronic Resources support

searching capabilities, timely access and other unique features like links to related articles, reference linking, etc.

Electronic resources distinguish a gradually important component of the resources development activities of libraries. "Electronic Resources" agree to those materials that require computer access, whether through a personal computer, mainframe, or handheld mobile devices. They may either be accessed remotely via the internet or locally. Completely that information which are available in electronic format and which can be accessed by the means of electronic gadget and World Wide Web or internet comes under the preview of Electronic Resources. Electronic Resources is a very comprehensive term and covers a variety of materials either published electronically or available electronically such as E-journals, E-books, CD-ROM, OPACs, Online databases, Email publishing, Electronic links, Multimedia presentation, Web publishing etc.

The University Library is the heart of academic searches, directly as regards its research work, and indirectly as regards its teaching work, which develops its life from research work. Therefore, high quality education and highly qualified faculty members is impossible without a quality library. One of the essential methods of improving the quality of research work is to facilitate and support the processes of creating, accessing and using information and knowledge.

2. E-Resources: Definition (Gautam & Sinha, 2017)

Electronic resource is an electronic information resource which can be accessed from anywhere, anytime and it breaks the barrier of time and physical boundary. These resources can be manifestation through online or offline. These e-resources contain different types of electronic documents like e-books, e-journals, e-databases, academic web resources official document, etc. These resources are available, 24x7 for the library users. These electronic resources are cost-effective as well as free of cost available for the library users. Electronic resources have different situation and comfortable like printed document but its current information or contents are available in the various format like image, audio, video, and multimedia designs.

3. Format of Electronic Resources

Electronic Information Resources can be classified in the following types **(Sinha 2011, 2015, Gautam &Sinha 2017)**:

- Electronic Journals (e-Journals);
- Electronic Books (e-Books);
- Electronic References Sources (e-dictionary, e-directory, e-encyclopedia etc.);
- e-browser /content;
- E-Zines / e-magazine;
- Electronic Theses and Dissertations (ETD) Repositories ;
- Online Databases / Offline Databases ;
- Contents available in Institution/Digital Repository; and
- Academic Web resources/ Open Access Resources.

4. Characteristics Feature of Electronic Resources (Gautam &Sinha 2015, 2017)

Electronic Resources have some distinct features which distinguish them from traditional resources. Electronic Resources on the web resources/Internet are further distinct by the nature of the information on the web itself:

- Advanced and multipronged searches through keywords, free text;
- Ease of broadcast, communication and storage;
- Ease of drive of contents from one medium to another;
- Ease of facsimile, multiplication, manipulation and transmutation;
- Electronic Resources are available in the various files and formats that can be available very fast as they are uploaded on the server which save time, money, place and environment;
- Electronic Resources can be access around the world without any geographical and time limitations;
- Electronic Resources can be search, browse , access, copy, download quickly and customize according to your requirements;
- High compact storage;
- Hypertext and multimedia;

- It can be subscribed though consortia or publisher or aggregator etc.;
- It has 24x7 access ;
- It is published instantly on the web before coming to printed document;
- It saves space ;
- Junction of technology, which is getting more powerful each day;
- Linking feature facilitates link with in the documents as well as outside of the documents;
- Many users can use electronic resources simultaneously;
- Modification, alteration and updating can be made easily with in fraction of second;
- Monitoring the usages of electronic information resources is possible in some extend.
- Some of electronic information resources available in electronic only and offers multimedia information which is not possible in the print format ;
- Students and faculty expect Electronic Resources to be instantaneous, accessible and all pervasive; and
- Without Wall libraries leading to the vision of multimedia global virtual.

5. Statement of the Problem

Access to resources is currently showing more important than collection building, especially if the access is continuous in location. The electronic resources facilitate the libraries to get the benefits of large number of resources at an inexpensive cost and in least time. Moreover, the technology has renovated views of researchers, their patience, and their willingness to accept services that are available on demand. The electronic resources are the answer to the expectations of the users. Many researchers abroad have attempted to (predict or) measure the impact of electronic resources on research and learning through surveys. In India, very few efforts have been made so far to study extensively the use of electronic resources by research scholars and the impact of e-services and their functioning. Keeping in view the previous aspects, the present study has been taken up to know the current use of electronic resources and its impact on the academic work of the post-graduate students and research scholars, and also problems faced while

accessing these resources by the Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

6. Objectives of the Study

The main objectives of the present study are as follows:

1. To find out the awareness of library users' about available Electronic Resources.
2. To know the purpose and use of Electronic Resources.
3. To find out the frequency of using Electronic Resources.
4. To find out the problems faced by the library users while accessing and using of Electronic Resources.
5. To study the level of satisfaction of users about availability of Electronic Resources.
6. To study the preferred format for using Electronic Resources.

7. Significance of the Study

In the current era of information explosion-more and more publications are becoming Web-concerned. Most of the science & technology, social science and humanities discipline libraries have changed the contemporary outlook towards functions and services. The situation is rapidly changing to an electronic one. The researcher decided to conduct this study for determining the usage of Electronic Resources by the Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

8. Scope and Limitation

The present study was limited to the Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India.

9. Review of Related Literature

Various studies have been carried out regarding to the exposure of computers and Electronic Resources to the students, research scholars and faculty members of various institutions and universities.

Gautam and Sinha (2017) ICT has brought the revolutionary changes in the functioning of libraries and information centres. The impact of ICT including WWW and Internet is visible in every walk of life. The libraries are not the exception. Due to electronic publishing, many Electronic Resources in the form of e-journals, e-books and on-line / off-line databases are being published. The academic libraries especially colleges and universities libraries have been procuring these resources for their libraries. Due to escalation in the cost of learning resources both printed and Electronic Resources and financial problems the academic libraries are facing , the consortia models are being adopted and experimented for the procurement and access to Electronic Resources by the colleges and universities. The first part of paper introduces the Electronic Resources, and its procurement under consortia models successfully implemented by INFLIBNET Centre since 2003. Under the UGC-INFONET Programme about 179 university libraries have been given access to Electronic Resources which comprises of e-journals and online databases. The second part of the paper describes the use of Electronic Resources by the research scholars and teachers of Allahabad University. In order to ascertain the usage of the journals by the research scholars and teachers of Allahabad University, the present study has been conceived to find out the use of Electronic Resources which have been given access to the research scholars and teachers in the university campus mainly at Central Library and Departmental Libraries. To what extent the available Electronic Resources are being utilized by the library users and what are their awareness level, usage pattern, preference of the publishers / journals etc. For this study survey method has been used using questionnaire as a data collection tool. This study has been carried out during the period of January, 2015 to June, 2015. This is a preliminary pilot study conducted on smaller sample to ascertain the validity of the questionnaire. The simple random sampling technique has been adopted for the study. The findings of the study reveals that the library users belonging to younger generation have adopted the Internet, online / offline electronic resources or web resources very quickly and at the same time the elderly library users are not comfortable using Internet , social media and Electronic Resources. They rely more on the traditional printed resources. In order to make the optimum use of the Electronic Resources available for the university library users through consortia, extensive and frequent user's awareness programmes needs to be organised by the library in collaboration with INFLIBNET and other agencies.

Kumar, Sonkar and Rajbanshi (2016)find out the information seeking behavior of research scholars of Babasaheb Bhimrao Ambedkar University, Lucknow. A well-defined questionnaire was used to collect data. The major findings

of the study shows that research scholars seek information for updating knowledge, research work and preparing articles for seminar and workshops. Scholars of BBAU feel more comfortable by asking teachers or friends and consulting library catalogue than asking to library staffs for accessing library resources. Research scholars are facing problems in using of old materials 50 (35.71%) and unavailable 28 (27.4%) of required materials in the library. All the research scholars 140 (100%) use the internet facilities for accessing the information. Majority of the research scholars spends time Daily 129 (92.14%) on the internet.

Hwang (et.al.), (2014) shows the usage of e-books by period and country. More importantly, the authors suggest strategies to boost e-book use based on user demands. Since the early 2000s, when e-books were first introduced, there has been a considerable change in perception and increase in usage of e-books at South Korean university libraries. Despite this progress, most functions of e-books are not fully utilized. The authors find the role of the library to be very important, as most users learn about and access e-books through the Web sites of university libraries, not through such portal sites as Google. The remarkable result is that users with higher education more easily recognize and have better experiences with e-book services.

Sinha, Bhattacharjee and Bhattacharjee (2014) discuss that many Electronic Resources are available to the university libraries of India under different consortia and many resources are available on Internet as open source resources. For the present study survey method was adopted using Questionnaire and Interview schedule as tools of data collection. The questionnaire was designed on the basis of previous study conducted by Sinha, Singha and Sinha (2011) and Sinha (2012) with some modification. The questionnaire was distributed to 200 media professionals and 156 respondents have returned the filled up questionnaire back to the authors. The important survey findings in respect of demographic profiles of media professionals working in universities and media houses highlighting their library visit pattern, Electronic Resources use pattern and their expectations from university, college and public libraries to utilize available resources for their academic and professional's endeavors have been enumerated. The media professionals have also highlighted some problems in accessing to information and put forwarded some suggestion for the overall improvements of the library services and usage of Internet facilities in the libraries.

Sinha and Chanda (2014) has describes about the usage of Electronic Resources available under the UGC-INFONET Digital Library Consortium and DeLCON Consortium by the scientific community Library Users of Assam University, Silchar representing from Bio-Medical Sciences and Ecology and Environmental

Sciences. The survey findings reveals that Electronic Resources available under UGC-INFONET is more popular and heavily utilized by the scientific community of Assam University Library and they prefer to access Electronic Resources mainly from their respective department and the evening is the preferred time among the teachers, scholars and students. The library users suggested to organized regular User Awareness Programme and enhance the infrastructural facilities in the departmental and university library.

Kumar and Manjunath (2013) investigated impact of internet use on academic performance of teachers and researcher in university setup. It further aims to know how the user compares the internet sources with traditional information sources. The study has demonstrated the high use of the internet sources and services by teachers and researchers in university setup. Study results also indicated that internet has made an impact on their academic performance

Nisha and Naushad (2012) in their study examines that most of the users are aware of e-journals and the reason to access journals to retrieve information regarding research, publishing papers, assignments, presentations, seminars and to update their knowledge

Mohammad and Parvez, (2011) found that most of research scholars and PG students find Internet-based information services easy to use. It is clear from the present study that most use the Internet for searching for subject oriented information. A majority of users are satisfied with the accuracy of the Internet-based information sources. These findings make it clear that the Internet is a good source of information and a good channel for accessing online information sources to research scholars and PG students of the science faculty in Aligarh Muslim University.

Kumar, Roy and Satija (2011) has conducted programmes as "How to search the online databases," while the Pondicherry library provides instructions in the use of library resources including Electronic Resources and effective online searching. BHU conducts programmes on Science Direct and ProQuest. DU provides need-based instruction and PU provides general instruction in effective search and the publishers also conducted such programmes to facilitate searching of their supplied databases. Database providers generally supply a slide show rather than hands-on training. Moreover, INFLIBNET should provide periodic training for library staff. Accessing full-text is also a problem at times. Some agency servers also create problem. In India we have seen that if the IFLIBNET server is not working properly, it creates problem in downloading full text. University servers may also create such problems. Universities need proper standalone servers with

proper power backup. All the universities use commercial as well as open source databases while DU and JNU have also their home grown databases. Open source databases are also available there, but the study found that only DU, BHU, IGNOU and JNU host important open source online databases on their websites.

Margam Madhusudhan (2010) has described the use of e-resources by research scholars of Kurukshetra University, Kurukshetra (India). The main aim is to determine the use of e-resources, users' skills in handling e-resources, and the purpose of their use. The survey was conducted through a structured questionnaire circulated among 60 research scholars (PhD and M Phil) taken from different departments of Kurukshetra University and the response rate was 83 per cent. Further, it finds that e-resources can be good substitutes for conventional resources, if the access is fast, and more computer terminalsare installed to provide fast access to e-resources. Google is the most widely used search engine for locating information electronically. Few attempts have been made to study the use of e-resources by research scholars and their impact in India. The paper highlights the use of e-resources in research at Kurukshetra University with some constructive suggestions for improvement of electronic resources and services.

Ahmad and Fatima (2009) find out the study of the social sciences researchers. Use of information and communication technologies (ICTs) in the Aligarh Muslim University (AMU). A well-structured questionnaire was used to collect the data. The study shows that researchers use a variety of ICT products and services for their research work as these products prove very helpful in finding needed information quickly and easily and also help the researchers to access, manage, integrate, evaluate, create, and communicate information more easily. The study also identifies lack of training and technical knowledge to use ICTs as the major hindrances faced by the researchers in AMU. The paper recommends proper training and guidance for use of ICT-based technologies for the optimum utilization of these services by the researchers.

Haridasan and Khan (2009) reveal the awareness of Electronic Resources among the faculty members and research scholars. The analysis shows that all respondents were aware of the online public access catalogue and it also shows that they were aware with internet; e-mail, discussion groups, e-journals', CD-ROM database, e-books' e-encyclopedia, e-thesis, e-dictionaries and e-newspapers also.

Margam Madhusudhan (2008) in his paper focuses on the use of UGC-Info net e-journals by research scholars and students. The main aim is to identify the needs and requirements of users in general and to know the use of UGC-INFONET

Library and Information Science e-journals in the University of Delhi by research scholars and students of DLIS in particular.

10. Research Methodology and Research Design

The present study Survey method of research has been employed using questionnaire as main data collection tool. The questionnaire method of the collection of data is found suitable for gathering data particularly from a large number of respondents representing a specific population. A structured questionnaire was designed to collect data from Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India keeping in mind the basic objectives of the study. A questionnaire survey was conducted to collect the information concerning to the awareness and use of electronic resources, frequency of use of electronic resources, purpose of using electronic resources, problems faced by the users while using electronic resources etc. The data was personally collected from Post-Graduate Students and Research Scholars of Aligarh Muslim University, Aligarh, Uttar Pradesh, India. A stratified random sampling method was adopted to collect the primary data for the selection of respondents and interaction with those who were available in the Aligarh Muslim University Library. For this study purpose a total of 200 questionnaires were distributed among Post-Graduate Students and Research Scholars, is being followed by observation and interview with respondents as and when necessary. The drafted questionnaire were come to be filled up by the concerned users in personal way, and the doubts that arose in conversion were clarified on the spot. Altogether 200 numbers of questionnaires were disseminated, a total of 193 questionnaires were received back from the respondents. The data were coded, tabulated and analyzed to obtain interesting results. The outcomes of the results were represented in the tabular format. Percentage technique has been adopted to write the results and findings.

11. Data Analysis and Interpretation

On the basis of filled up questionnaire the data has been analyzed and tabulated. For the data analysis only percentage technique has been adopted. The analysis of collected data has been tabulated and in the present explosion results have been shown in the tabular and graphical format.

12. Gender of Users

Table- 1: Gender wise Distribution of Respondents (N-193)

Gender	No. of respondents	Percentages
Male	98	50.77
Female	95	49.22%
Total	193	99.99=100%

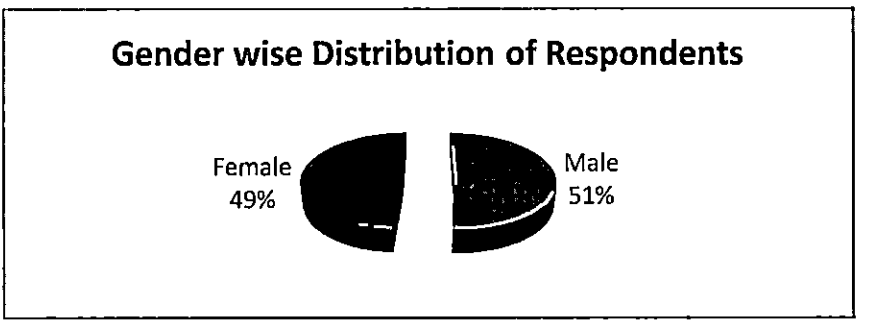


Figure:1 Gender wise Distribution of Respondents

Personal detail section of the questionnaire provides in-formation regarding the gender and different qualifications as can be seen from Table-1. It is shown in table-1, 50.77% of populations studied were males and only 49.22% of total were females, who can use Electronic Resources available through library for different purposes.

13. Category of Users

Table- 2: Category wise Distribution of Respondents(N=193)

Category of Library Users	No. of respondents	Percentages
Post-Graduate Students	117	60.62%
Research Scholars	76	39.37%
Total	193	99.99=100%

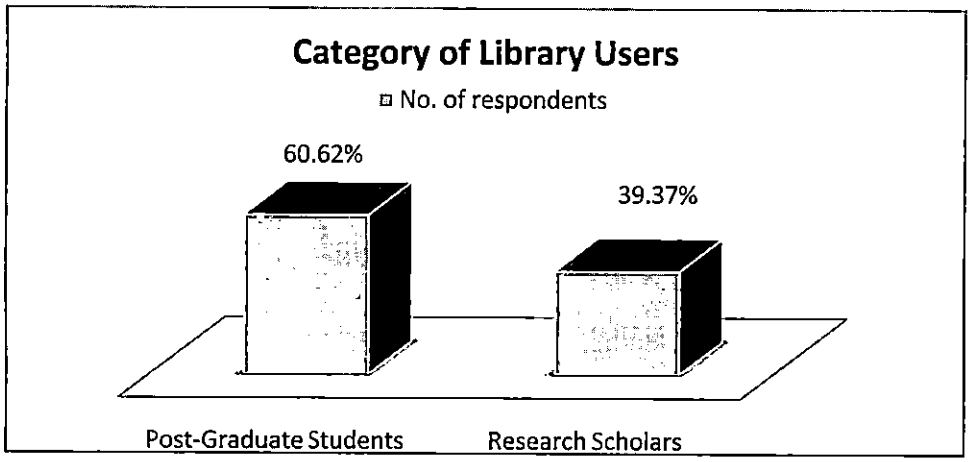


Figure: 2. Category wise Distribution of Respondents

Survey findings in the Table-2 shows that 60.62% of the respondents were post graduate students and 39.37% were research scholars.

14. Awareness about Electronic Resources

Capabilities are pre-requisite to effective use of electronic resources, and therefore post-graduate students and research scholars were asked whether they know about the electronic resources available in the AMU Library. Table: 2 shows that all of the respondents to the survey said that they know about the electronic resources available. It is obvious that the respondents access electronic resources through the UGC-INFONET Digital Library Consortium over the University wide area network. None of the respondents reported non-awareness of the electronic resources. "Awareness of electronic resources is very important for high patronage". This finding is a clear indication of proper library orientation stretched to post-graduate students and research scholars as a method of imparting skills.

Table- 3: Awareness about Electronic Resources (N-193)

Gender	Aware	Not aware
Male	84 (85.71%)	14 (14.28%)
Female	73 (76.84%)	22 (23.15%)
Total	160 (82.90%)	33 (17.09%)

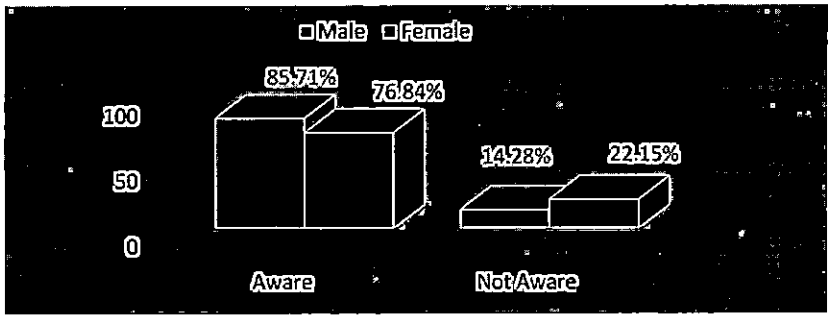


Figure- 3: Awareness about Electronic Resources

Table-3 shows the awareness of Electronic Resources among the respondents available through the library (84=85.71%) of the male users were aware about the Electronic Resources whereas only 73(76.84%) of female respondents were aware about the availability of Electronic Resources. It can be seen that male respondents are more aware about Electronic Resources than females.

15. Preference of format of Using Electronic Resources

Table- 4: Preference of format of using Electronic Resources (N-193)

Preference of format of using Electronic Resources	No. of respondents	Percentages
Print	68	35.23%
Electronic	97	50.25%
Print & Electronic both	28	14.50%
Total	193	99.99%=100.00%

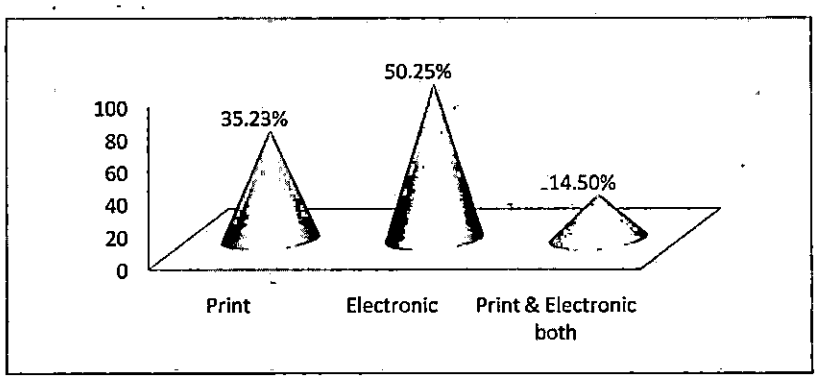


Figure- 4: Preference of format of using Electronic Resources

The survey findings reveals that 97=50.25% of respondents need to access only electronic version of information followed by 68(35.23%) users want to read the printed version of information whereas only28(14.50%) respondents want to use both electronic and printed information.

16. Frequency of Using Electronic Resources

This is the most important and basic aspect related to the assessment of the usefulness of electronic resources. Here an attempt has been made to find out the frequency use of electronic resources. Table: 1 shows the frequency use of electronic resources by Post-Graduate Students and Research Scholars at AMU Library.

Table- 5: Frequency of Using Electronic Resources (N-193)

Frequency of using Electronic Resources	No. of respondents	Percentages
Daily	118	61.13%
Weekly	44	22.79%
Monthly	19	09.84%
Occasionally	12	06.21%
Total	193	99.99%=100%

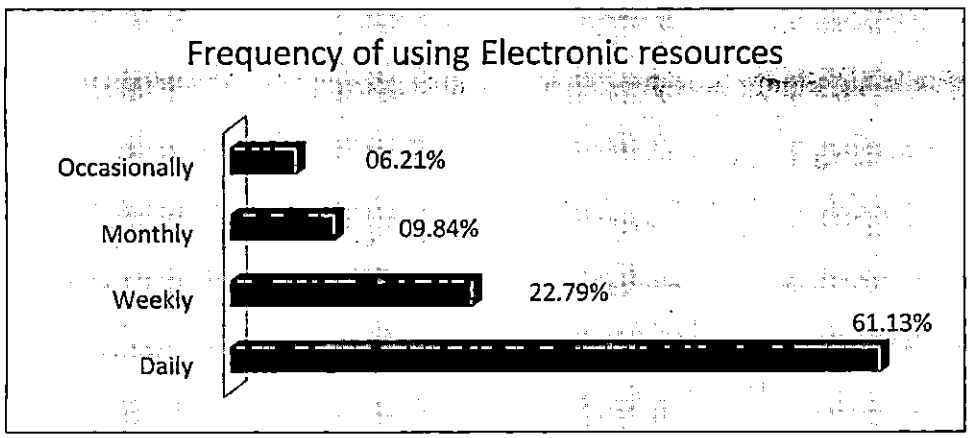


Figure- 5: Frequency of Using Electronic Resources

In response to the question how frequently do you use Electronic Resources? The respondents have responded in contradictory performances (Table-5& figure-5) reveals that Majority of 118=61.13% respondents are using Electronic

Resources "Daily", which is followed by the44(22.79%) respondents are using Electronic Resources"Weekly",19(09.84%) respondents are using Electronic Resources "Monthly". Only few 12(6.21%) respondents are using Electronic Resources" Occasionally" and when required.

17. Purpose of Using Electronic Resources

The purpose of using electronic resources differs from one user to another. Research scholars were asked about the purpose of using the electronic resources.

Table-6: Purpose of using Electronic Resources (N= 193 Each)

Frequency of using Electronic Resources	No. of respondents	Percentages
For studying course work/reference	137	70.98%
For update subject knowledge	86	44.55%
For teaching/assignment	78	40.41%
For research work/project work	149	77.20%
For publishing articles / research papers / books	92	47.66%
Any other works	42	21.76%

(Multiple Responses Permitted)

Table-6 highlights that most of the library users (149=77.20%) respondents are using the E- resources for research /project work followed by 137(70.98%) respondents are using the E- resources for studying course work/reference, 92(47.66%) respondents are using the E- resources for publishing articles / research papers / books, 86(44.55%) respondents are using the E- resources for update subject knowledge, 78(40.41%) respondents are using the E- resources for teaching/assignment, only 42(21.76%) respondents are using Electronic Resources for other purpose i.e. competitive examination, communication, for finding relevant information in their subjects etc.

18. Location for Accessing Electronic Resources

Table- 7: Location for accessing Electronic Resources (N= 193 Each)

Location for accessing Electronic Resources	No. of respondents	Percentages
University Central Library	143	74.09
Home	131	67.87%
Cyber Café	67	34.71%
Other place in University	105	54.40%

(Multiple Responses Permitted)

After that the respondents were examined to indicate the preferred location to access Electronic Resources. It is observed from the study of Table-7 shows that 143(74.09%) of the respondents chose the central library, about 131(67.87%) accessed at the department library, 67(34.71%) accessed at the cyber cafe and 105(54.40%) accessed from other place where they got facility to access Electronic Resources.

19. Preference of Using Various Types of Electronic Resources

Table-8: Preference of Using Various Types of Electronic Resources (N=193)

Electronic resources	Post-Graduate Students %	Research Scholars (%)	Grand Total Frequency Total Percentage (%)
CD-ROM database	12(10.25)	5(06.57)	17(08.80)
Online database	24(20.50)	10(13.15)	34(17.61)
E-Books	15(12.82)	11(14.47)	26(13.47)
E-Journals	47(40.17)	37(48.68)	**84**(43.52)
ETD	14(11.96)	9(11.84)	23(11.91)
Research Reports	5(04.27)	4(05.26)	9(04.66)
Total	117(100.00)	76(100.00)	193(100.0)

Table- 8 shows that out of 193 respondents, a good number of respondents (84= 43.52%) prefer to use e-journals which is followed 34(17.61%) prefer to Online database,26(13.47%) respondents who prefer to access e-books,23(11.91)

respondents who prefer to access ETD,17(08.80) prefer to access CD-ROM Database whereas only9(04.66%)respondents prefer to use of e-research reports. Table:8 highlights that only the well-known electronic resources are preferably used by the post-graduate students and research scholars, the rest of the electronic resources i.e.CD-ROM Database, research reports, ETD are comparatively less used.

20. Sources of Learning Electronic Resource Usage Skills

The research scholars were further requested to show how to learn to use electronic resources in their library. A question was asked to know, through which sources they came to know about electronic resources.

Table: 9. E-Resource Usage Skill learning Method (N-193)

Source of Learning Electronic resources Usage Skills	No. of respondents	Percentages
Training from the University	101	52.33%
Self-study / Instruction	53	27.46%
From Friends	31	16.06
External Sources	8	04.14%
Total	193	99.99=100.00%

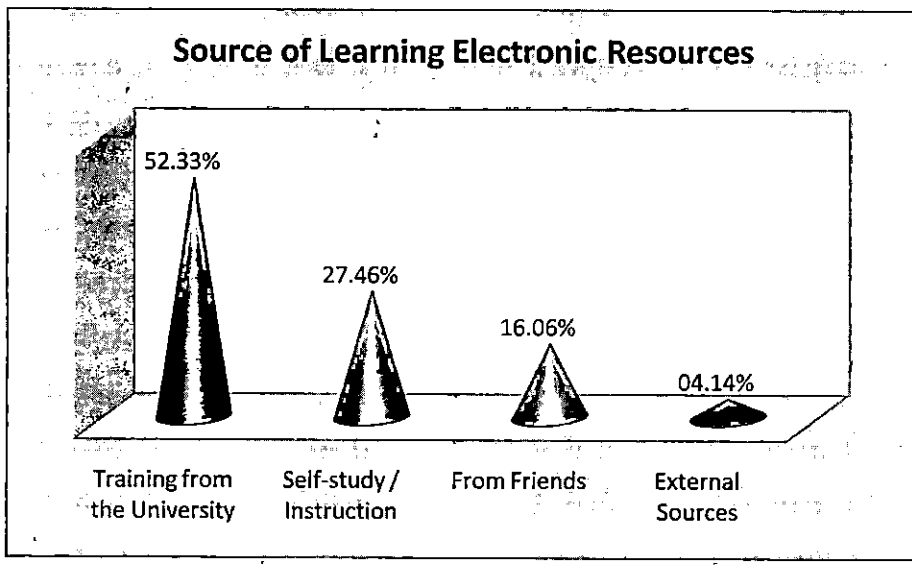


Figure-9: Sources of Learning Electronic Resource Usage Skills

Survey findings reveals that Table: 9 shows more than half 101(52.33%) acquired their online journal usage skill through training from the university, 53(27.46%) learned from self-study, 32(16.06%) learned from friends. Only 8(4.14 %) acquired skills from external sources.

21. Satisfied with Available Electronic Resources

Satisfied with Available Electronic resources, the Post-Graduate Students and Research Scholars can only judge the Satisfied with Available Electronic resources offered to them from the rate at which they succeed in retrieving electronic resources information. Table: 7shows that the satisfaction rate of finding the required electronic resources.

Table- 10 : Satisfied with Available Electronic Resources (N=193)

Satisfied With E- Resources	No. of respondents	Percentages
Fully	156	80.82%
Partially	27	13.98%
Leased satisfied	10	05.18%
Total	193	99.99=100.00%

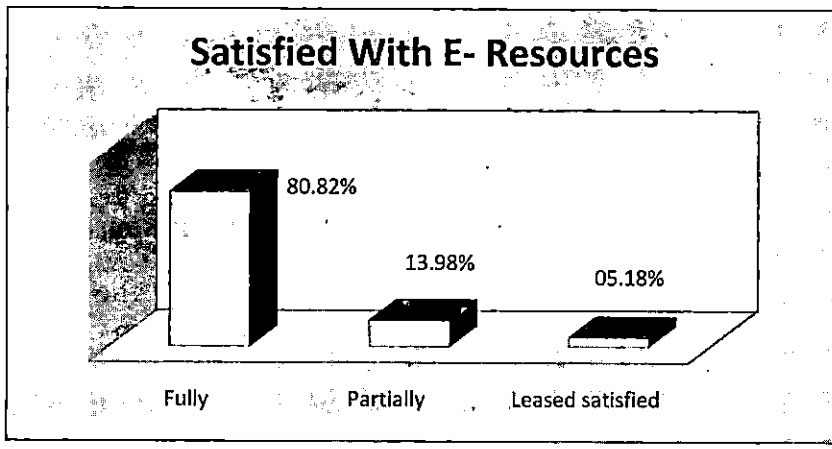


Figure: 10Satisfied with Available Electronic Resources

Survey findings of respondents shows in the Table: 10 The highest (80.82%) of respondents were fully satisfied with the provision of the electronic resources which is followed by 13.98% respondents who were partially satisfied and only 05.18% respondent were Leased Satisfied in this regards.

22. Satisfaction levels of Accessing Electronic Resources

Table: 11 Satisfaction of Accessing Electronic Resources (N-193)

Satisfaction of accessing E- Resources	No. of respondents	Percentages
Highly satisfied	126	65.28%
Satisfied	42	21.76%
Average	14	07.25%
Not Satisfied	11	05.69%
Total	193	99.99=100.00%

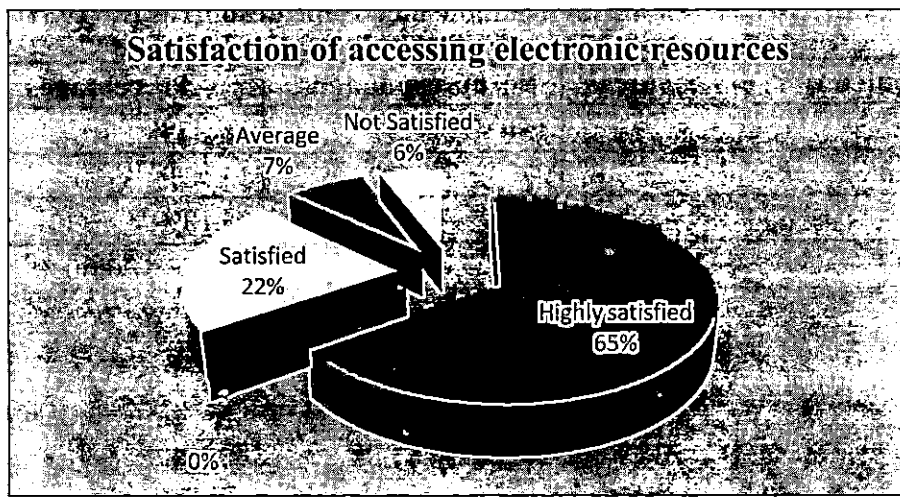


Figure: 11 Satisfaction of Accessing Electronic Resources

Satisfaction levels of accessing Electronic resources, the Post-Graduate Students and Research Scholars can only judge the satisfaction of the electronic resources services offered to them from the rate at which they succeed in retrieving electronic resources information. Table: 13 shows the success rate of finding the required electronic resources services.

A question was asked to know the satisfaction level of infrastructure among the users for accessing Electronic Resources. It was observed that majority 126=65.28% of respondents are highly satisfied with the infrastructure provided by the library for accessing Electronic Resources at different levels whereas only 05.69%% of respondents are not satisfied with the same.

23. Advantage of Electronic Resources over Print Resources

The developments of electronic or digital technologies and the recent trends of e-publishing across the world have brought in a revolution in electronic resources publication, subscription, and access and delivery mechanism. Presently electronic resources have become the largest and fastest growing areas of electronic resources for most of our libraries and it has many benefits. Some of the important benefits of electronic resources extracted from the views of the respondents are shown in Table- 12.

Table: 12Advantage of Electronic Resources over Print Resources (N=193 Each)

Advantage of Electronic Resources over Print Resources	No. of respondents	Percentages
Time saving	143	74.09%
Easy to use	113	58.54%
More useful	91	47.15%
More informative	162	83.93%
All the above	75	38.86%

(Multiple Responses Permitted)

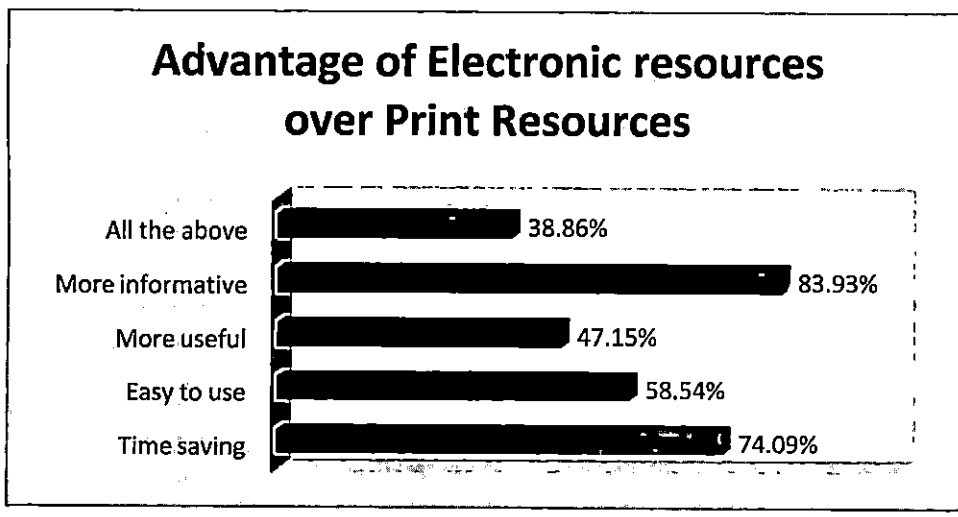


Figure- 12: Advantages of Electronic Resources over Print Resources

Table: 12 reveals that (162=83.93%) respondents said that electronic resources are more informative, 143(74.09%) of the users feel that use of electronic

resources are time saving, 113(58.54%) of the users feel that electronic resources are easy to use, 91(47.15%) of the respondents feel that electronic resources are more useful and 75(38.86%) told that electronic resources having 'all the above' advantages over print resources.

24. Adequacy of Information in Electronic Resources_

"Electronic Resources are important research tools, which complement print-based resources in any old-fashioned library. Electronic Resources have now been recognized as a major link in scholarly communication. The timely publication, ease in delivery, incorporation of multimedia contents, hyper linking, browse, and search facility, etc. are some of the features, which have attracted interest of both the library and academic communities.

Table- 13 : Adequacy of Information in Electronic Resources (N-193)

Adequacy of Information in Electronic Resources	No. of respondents	Percentages
Always	147	76.16%
Mostly	24	12.43%
Sometimes	19	09.84%
Never	3	01.55%
Total	193	99.99=100.00%

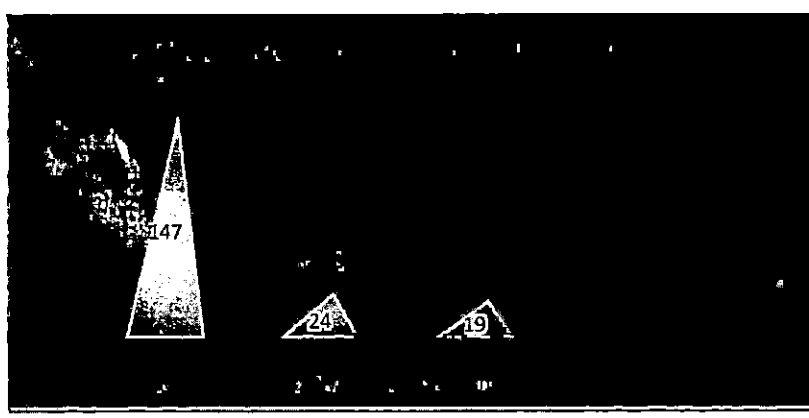


Figure-13: Adequacy of Information in E- Resources

They also provide access to current information as these are often updated frequently. The AMU Library, at present, is providing some 7,500+ e-journals

and 7 databases. In order to know the interest of the Post-Graduate Students and Research Scholars in their use of electronic resources as well as to know, whether they are getting adequate information for their research work or not, a simple question was asked. The opinion of the respondents to this question is presented in Table: 13.

It is clear from Table: 13 that 147(76.61%) users indicate that the information available in the Electronic Resources is always adequate, 24(12.43%) shows mostly, and 19(09.84%) find the information adequate sometimes. However, only 3(1.55%) respondents reported about never. In opinion of above we can say that majority of the users feel that information in Electronic Resources is always adequate.

25. Prefer format of Reading of Full Text-Electronic Resources

Table- 14: Prefer format of Reading of Full Text-Electronic Resources (N-193)

Prefer format of Reading of Full Text-Electronic Resources	No. of respondents	Percentages
On the screen /HTML	42	21.76%
Print out on Paper/Hard copy	79	40.93%
Download in storage devices	64	33.16
Other methods	8	04.14%
Total	193	99.99=100.00%

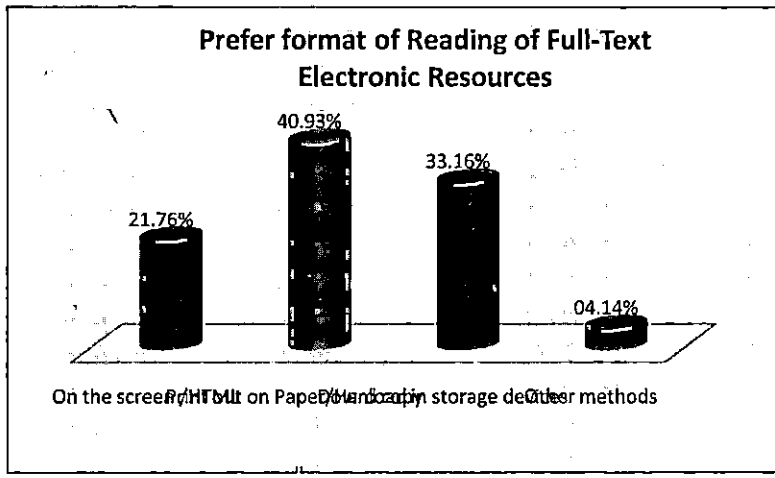


Figure- 14: Prefer format of Reading of Full Text-Electronic Resources

Table: 14 shows that determined users 79(40.93%) take the print out of full text Electronic Resources, 64(33.16%) save the material in storage devices 42(21.76%) reads on screen, and 8(04.14%) use other format for searching the required information.

26. Problems faced while Using Electronic Resources

There are number of problems to use of electronic resources for research work. The Post-Graduate Students and Research Scholars were requested to furnish the details regarding the problems faced whenever they used electronic resources. Table: 15 presents the major problems faced by Post-Graduate Students and Research Scholars in accessing the electronic resources at AMU Library.

Table- 15: Problems faced while Using Electronic Resources (N=193 Each)

Problems faced while Using Electronic Resources	No. of respondents	Percentages
Insufficient number of computers	54	27.97%
Internet connectivity/slow download.	125	64.76%
Lack of training	47	24.35%
Lack of hardware/software	26	13.47%
Generation of redundant information	120	62.17%
Coverage on Electronic Resources is not suited to my research area	94	48.70%
Not many Electronic Resources available in my subject	159	82.38%
No assistance provided by the information professionals	38	19.68%
Lack of pin- pointed information	76	39.37%
Any other	15	07.77%

(Multiple Responses Permitted)

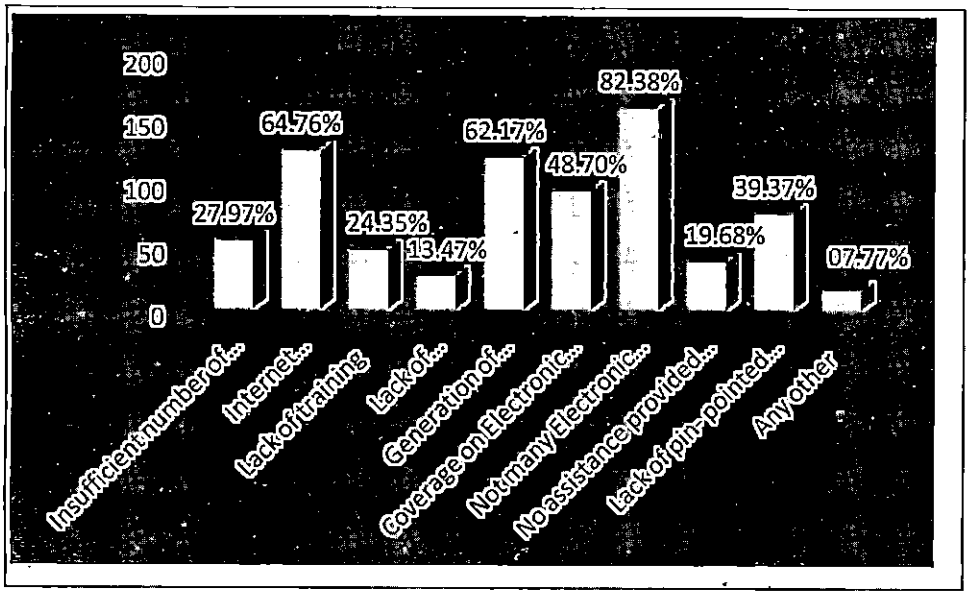


Figure-15: Problems faced while Using Electronic Resources

Though Electronic Resources have become a common source among the academic and research communities, the majority of users stated that they have difficulties to use Electronic Resources. The specific problems faced by the users are given in Table: 15 shows the problems faced by respondents in using Electronic Resources. 159(82.38%) of the users have problem of not many Electronic Resources available in my subject followed by 125(64.76%) internet connectivity or slow download, 120(62.17%) of the users have problem ofgeneration of redundant information, 94(48.70%) users feel the problem of Coverage on Electronic Resources is not suited to my research area,76(39.37%) of the users have problem of pin- pointed information, 54(27.97%) of the users have problem of Insufficient number of computers,47(24.35%) of the users have problem of Lack of training,38(19.68%) of the users have problem of no assistance provided by the information professionals,26(13.47%) of the users have problem of Lack of hardware/software and 15(07.77%) other problems such as lack of IT knowledge, technical skills, etc.

27. Organization of Training Programme

The above table shows that most of the respondents 122(63.21%) feel that training programmes should be organized for effective use of Electronic Resources. Whereas, 71(36.78%) respondents not required such type of training, they are

capable to use Electronic Resources.

Table- 16: Organization of Training Programme (N=193)

Organization of Training Programme	No. of respondents	Percentages
Yes	122	63.21%
No	71	36.78%
Total	193	99.99=100.00%

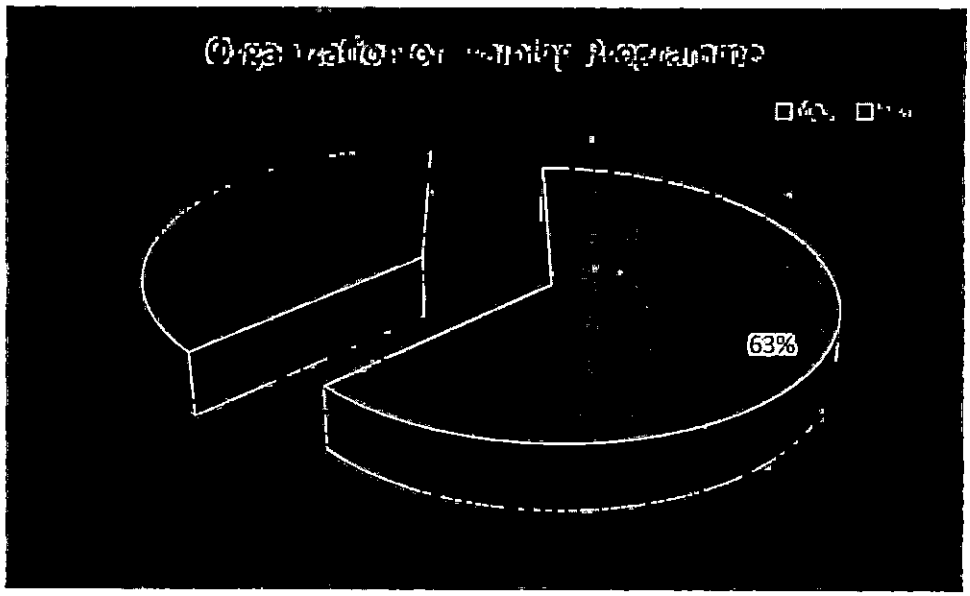


Figure- 16: Organization of Training Programme

28. Users feel good substitutes for Conventional Resources

Table-17: Users feel good substitutes for Conventional Resources (N=193)

Users feel good substitutes for Conventional Resources	No. of respondents	Percentages
Yes	169	87.56%
No	24	12.43%
Total	193	99.99=100.00%

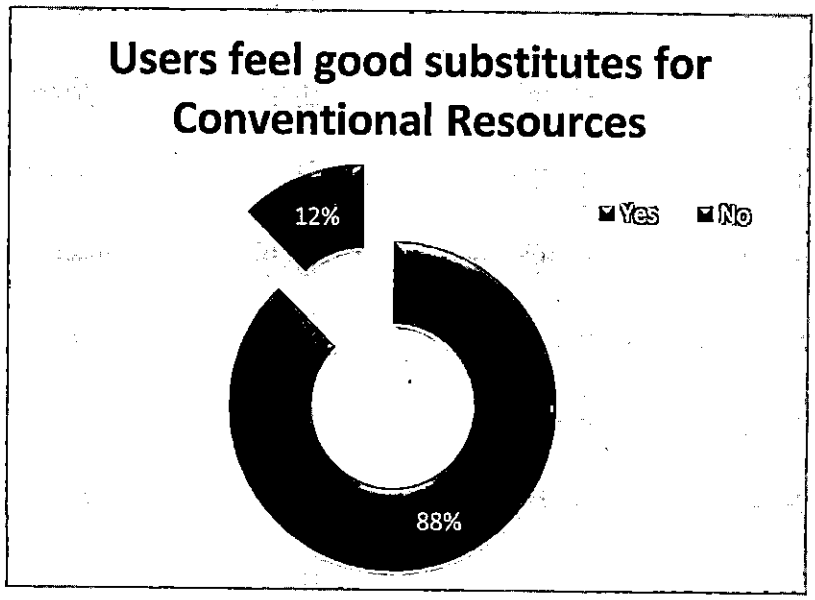


Figure-12: Users feel good substitutes for Conventional Resources

Table- 12 highlights that large majorities (169=87.56%) of the users feel that Electronic Resources can be good substitutes for conventional resources if the access speed is fast and 24(12.43%) users reported that Electronic Resources cannot be good substitute for conventional resources.

29. IMPORTANT FINDINGS

- The majority (50.77%) of the respondents of the present study were male Research Scholars and faculty members whereas 49.22% belongs to female category;
- The majority 60.62% of the respondents were post graduate students and 39.37% were research scholars;
- The highest (85.71%) of the male users were aware about the Electronic Resources whereas only (76.84%) of female respondents were aware about the availability of Electronic Resources;
- 84(43.52%) highest preference to use e-journals, second highest 34(17.61%) preference to use of e-databases and 9(04.61%) lowest preference of research reports;

- Maximum (50.25%) of respondents need to access only electronic version of information followed by 68(35.23%) users want to read the printed version of information whereas only 28(14.50%) respondents want to use both electronic and printed information;
- Majority of (61.13%) respondents are using Electronic Resources "Daily", which is followed by the (22.79%) respondents are using Electronic Resources "Weekly", (09.84%) respondents are using Electronic Resources "Monthly". Only few (6.21%) respondents are using Electronic Resources "Occasionally" and when required;
- Most of the library users (77.20%) respondents are using the E- resources for research /project work followed by (70.98%) respondents are using the E- resources for studying course work/reference, (47.66%) respondents are using the E- resources for publishing articles / research papers / books, (44.55%) respondents are using the E- resources for update subject knowledge, (40.41%) respondents are using the E- resources for teaching/ assignment, only (21.76%) respondents are using Electronic Resources for other purpose i.e. competitive examination, communication, for finding relevant information in their subjects etc.;
- The majority 74.09% of the respondents chose the central library, about 67.87% accessed at the department library, 34.71% accessed at the cyber cafe and 54.40% accessed from other place where they got facility to access Electronic Resources;
- More than half (52.33%) acquired their online journal usage skill through training from the university, (27.46%) learned from self-study, (16.06%) learned from friends. Only (04.14%) acquired skills from external sources;
- The highest (80.82%) of respondents were fully satisfied with the provision of the electronic resources which is followed by 13.98% respondents who were partially satisfied and only 05.18% respondent were Leased Satisfied in this regards;
- Majority (65.28%) of respondents are highly satisfied with the infrastructure provided by the library for accessing Electronic Resources at differ-

ent levels whereas only (05.69%) of respondents are not satisfied with the same;

- The majority (83.93%) of respondents said that electronic resources are more informative, (74.09%) of the users feel that use of electronic resources are time saving, (58.54%) of the users feel that electronic resources are easy to use, (47.15%) of the respondents feel that electronic resources are more useful and (38.86%) told that electronic resources having 'all the above' advantages over print resources;
- Highest preference (76.61%) of users indicates that the information available in the Electronic Resources is always adequate, (12.43%) shows mostly, and (09.84%) find the information adequate sometimes. However, only (1.55%) respondents reported about never;
- Maximum (40.93%) of respondents take the print out of full text Electronic Resources, 64(33.16%) save the material in storage devices (21.76%) reads on screen, and (04.14%) use other format for searching the required information;
- (82.38%) of the users have opined that the lack of Electronic Resources in my subject which is next followed by (64.76%) of respondents have discoursed that internet connectivity or slow download, (62.17%) of respondents have discussed that generation of redundant information, (48.70%) of respondents have conferred that Coverage on Electronic Resources is not suited to my research area,(39.37%) of respondents have spoken that pin- pointed information,(27.97%) of respondents have said that Insufficient number of computers, (24.35%) of respondents have expected that Lack of training, (19.68%) of respondents have expected that no assistance provided by the information professionals, (13.47%) of respondents have found that Lack of hardware/software and (07.77%) other problems such as lack of IT knowledge, technical skills, etc.;
- Maximum (63.21%) of the respondents found that training programmes should be organized for effective use of Electronic Resources. Whereas,

(36.78%) respondents not required such type of training, they are capable to use Electronic Resources; and

- Majorities (87.56%) of the respondents found that Electronic Resources can be good substitutes for conventional resources if the access speed is fast.

Suggestions and Recommendations for Awareness for Usage of Electronic resources

The followings are a small number of suggestions and recommendations for the enabling the library users for the usage of the electronic resources facilities and access to the available electronic resources /web resources which are in traditional values with Sinha (2012, 2013, 2014, 2015, Gautam & Sinha 2017):

- Adequate ICT infrastructural facilities should be advanced in the various academic departments , library, hostels for the effective utilization of Internet and Electronic resources;
- As the user communities have conveyed their dissatisfaction towards the speed of Internet connectivity due to low bandwidth, it is recommended to establish campus wide Internet facilities with dedicated leased line facility for speedy access to Internet facility and number of nodes to the users should be increased as per requirements;
- Electronic resources are of importance because they are up to date resources which can be retrieved anytime, anywhere within the University partnerships; they are easily accessible, they can be downloaded and stored; they can be printed to have a hard copy; and many more explanations;
- Further research should be convoyed in request to explore the effect and usefulness of the present methods of promoting and upgrade of electronic journal resources as well as the training provided, together with an analysis of what better-quality methods might be used to advance access and use of electronic journal resources;
- Library Information awareness training should be included in the curriculum of universities and should be made an essential course for all aca-

demics in all disciplines. This will provide the students with required skills compulsory in the use of electronic resources;

- Library should be opened during holidays also. It should be 24x7;
- More computers/terminals with latest configurations should be made available in the library so that the users can use Internet, electronic resources and e-journals and other useful services of the Internet effectively;
- More fund should be assumed to acquire electronic resources;
- Printing, scanning facilities should be made available to library users on payment basis;
- Subscription to new electronic resources with applicable information to all courses followed at the individual university should made in developed to explain the difficulties for those who failure to get resources related or significant with their assignment;
- The frequently power failure is one of the major problem in the University Library. So the users are facing lots of problem in Electronic resources access. To maintain their interest towards electronic resources the University must ensure adequate and continuous uninterrupted power supply;
- The study indicates the need of orientation/workshop of electronic resources for faculty members and research scholars also;
- The University should setup computer network services in all departments' so that students could also use these opportunities to access electronic resources. It will also make it potential for the professors to be elaborate in the impartation of abilities for accessing electronic resources on the students; and
- To utilize the facilities of e-journals access provided under UGC INFONET Digital Library Consortium of INFLIBNET Centre, Ahmedabad, the campus wide local area network should be strengthen and made available in the different locations of the campus like academic departments, computer centers, faculty residence and all boys and girls hostel of the university to have maximum utilization of Electronic resources ;

References

1. Anajoyce Samuel Katabalwa, (2016).Use of electronic journal resources by postgraduate students at the University of Dares Salaam. *Library Review*, 65 (6/7) http://dx.doi.org/10.1108/LR-11-2015-0108 Downloaded on: 14 September 2016, at: 04:12 (PT)
2. Bidyut, K.; Bajpai, R. P.; & Chakraborty, H. K. (2013). Collection development and status of electronic resources in university libraries in India, *International Journal of Information, Library and Society,* 2(2), 1-4.
3. Borthakur, Jyotika and Sinha, Manoj Kumar (2015). Availability of Electronic Resources through Consortium in the Selected CSIR-Laboratories of Eastern India. *Sonari College Academic and Research Journal*, 4, 9-14 (ISSN: 2312-015X).
4. Chandran, Velmurugan. (2013). Use and user perception of electronic information resources: A case study of Siva Institute of Frontier Technology, India. *Chinese Librarianship: an International Electronic Journal,* 36. URL: http://www.iclc.us/cliej/cl36chandran.pdf.
5. Dillip K. Swain K.C. Panda, (2009) Use of electronic resources in business school libraries of an Indian state", The Electronic Library. 27 (1), 74–85 http://dx.doi.org/10.1108/02640470910934605Downloaded on: 14 February 2015.
6. Elavazhagan, K.; & Udayakumar, M. S. (2013). Use of electronic resources in the BITS, Pilani – Hyderabad Campus: A study. *International Research: Journal of Library & Information Science, 3*(3), 470-479.
7. Faizul, Nisha and Naushad Ali P.M., (2012) Awareness and use of e-journals by IIT Delhi and Delhi University library users. Collection Building. 32(2), 57–64 (http://dx.doi.org/10.1108/01604951311322039) downloaded on: 14 September 2016.
8. Gautam, Awadhesh Singh and Sinha, Manoj Kumar (2017). Use of Electronic Resources among Research Scholars and Faculty Members of University

of Allahabad, Uttar Pradesh,India: A Survey. Library Progress (International), 37(2), 1-12. DOI-10.5958/2320-317X/2017.00001.0

9. Hwang Jae-Young Kim Jayhoon Lee Boram Hwan Kim Jeong, (2014).Usage patterns and perception toward e-books: experiences from academic libraries in South Korea. *The Electronic Library.* 32(4), 522–541 (http://dx-.doi.org/10.1108/EL-11-2012-0150) downloaded on: 14 February 2015.
10. Kaur, B. and Verma, R. (2009) Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India. *The Electronic Library*, 27 (4) 611-22
11. L. Santhi and N. Radhakrishnan (2012) Indian Journal of Library and Information Science. 6 (3) (Supl), Sept - Dec, p.19-26.
12. Margam Madhusudhan, (2010). Use of electronic resources by research scholars of Kurukshetra University. *The Electronic Library*, 28(4), 492–506. http://dx.doi.org/10.1108/02640471011033684Downloaded on: 14 September 2016, at: 01:10 (PT)
13. Moghaddam, G.G. and Talawar, V.G. (2008). The use of scholarly electronic journals at the Indian Institute of Science: a case study in India. *Inter-lending & Document Supply*, 36 (1), 15-29.
14. Nazia Salauddin,(2015) International Journal of Next Generation Library and Technologies, 1.(1), 1-8 (www.ijnglt.com)
15. Raza, M.; & Upadhayay, A.K. (2006). Usage of e-journals by researchers in Aligarh Muslim University. *The International Information and Library Review*, 38, 170-179.
16. Sajjadur Rehman Vivian Ramzy, (2004),"Awareness and use of electronic information resources at the health sciences center of Kuwait University", Library Review, 53 (3), 150–156 (http://dx.doi.org/10.1108/00242530410526556Downloaded on: 11 March 2016)
17. Santhi, L.; Radhakrishnan, N.; & Swaroop, B. S. Rani. (2010). Use of electronic information sources and computer literacy by academics: A case study of affiliated engineering colleges under Coimbatore Anna University at Karur

District, Tamil Nadu (India). *PEARL: A Journal of Library and Information Science, 4*(2), 137-141.

18. Shabahat Husain Mohammad Nazim, (2015). Use of different information and communication technologies in Indian academic libraries. *Library Review,* 64 (1/2), 135-153. (http://dx.doi.org/10.1108/LR-06-2014-0070) Downloaded on: 14 September 2016.
19. Sharad Kumar Sonkar, M.P.Singh and Jitendra Kumar (2014).Use of Electronic Resources by Post Graduate Students and Research Scholars of the Banaras Hindu University: A Study.*Journal of Information Management,*1(2),87-97. (http://www.splp.in&www.pacificresearchpublication.com) (access on 8/07/2015)
20. Sharma, Dev Raj. (2012). Use of electronic resources in Guru Gobind Singh Indraprastha University: A study. *International Journals of Library and Information Management, 3*(2), 63-74.
21. Sinha, Manoj Kumar (2008). Information Communication Technology (ICT) and Internet Awareness amongst the College and University Teachers. *In:* From Automation to Transformation. 6th International CALIBER-2008, University of Allahabad, Allahabad, Feb 28, 29 & March 1, 2008, INFLIBNET Centre, Ahmedabad, Pp.165- 175.
22. Sinha, Manoj Kumar (2008). Information Communication Technology (ICT) and Internet Awareness amongst the participants of workshop on Research Methodologies in Basic Sciences. *Kelpro Bulletin*, 12(2): 30–48.
23. Sinha, Manoj Kumar (2009). A Study on ICT and Internet Awareness amongst the Research Scholars and University Teachers: A Case Study. *INFOLIB, 2*(1-4): 8-18.
24. Sinha, Manoj Kumar (2010). Internet Awareness and Internet Usage Pattern amongst University and College Teachers of North Eastern Region of India: A Survey. *Library Progress (International)*, 30(1), 2010, 61-82 (ISSN: 0970-1052)

25. Sinha, Manoj Kumar (2011). Status of Electronic resources Consortium Initiative in Academic and Technical Libraries in India: An Overview. *Kelpro Bulletin,* 15 (1)June 2011, 47-60. (ISSN: 0975-4911, R.N.: 67733/97).

26. Sinha, Manoj Kumar (2010). Scenario of On-Line Access to Electronic resources available under UGC-INFONET Digital Library Consortium with Special Reference to North Eastern Region of India: A Case study of Assam University Library Users. *In*: Conference Proceedings of International Symposium on Emerging Technologies and Changing Dimensions of Libraries and Information Services: ETTLIS-2010 organised jointly by Jaypee University of Information Technology (JUIT), Waknaghat, Solan (Near Shimla) and Jaypee Institute of Information Technology (JIIT) Noida at JPUT , Solan during June 3-5 2010 (*Eds:* Sanjay Kataria, John Paul Anbu K, and Shri Ram), K B D Publications , New Delhi , Pp. 436-446 (ISBN : 81-9079991-6)

27. Sinha, Manoj Kumar (2004). Studies on the Scenario of Internet Use Pattern of Assam University Community and Local Population of Barak Valley: A Survey. In: PLANNER 2004: Content Creation, Access and Management in Networked Environment. (*Eds*: T.A.V. Murthy *et. al*) INFLIBNET Centre, Ahmedabad, pp. 210-225.

28. Sinha, Manoj Kumar and Chanda, Anupam (2014). Usage of Electronic resources by the Scientific Community Library Users of Assam University, Silchar: A Comparative Study. *Asia Pacific Journal of Research*, 1 (16) August 2014, pp. 133-153 (ISSN: 2320-5504, E-ISSN-2347-4793) (Impact Factor: 0.673).

29. Sinha, Manoj Kumar Barun, S (2010). Scenario of ICT Awareness and Internet Usage Pattern amongst Science Faculty Research Scholars and Teachers of Assam University, Silchar: An Empirical Study. *Professional Journal of Library Science and Information Technology*, 1 (1), 2010, October 2010-March -2011, 61-78 (ISSN: 0976-7274).

30. Sinha, Manoj Kumar; Bhattacharjee, Sucheta; and Bhattacharjee, Sudip, (2013). ICT and Internet Literacy Skills for Accessing to Electronic resources available under N-LIST Programme: A Case Study of College Li-

brary Users of Barak Valley, South Assam. *Library Philosophy and Practice (e-journal).* Paper 948. http://digitalcommons.unl.edu/libphilprac/948

31. Sinha, Manoj Kumar; Bhattacharjee, Sucheta; and Bhattacharjee, Sudip (2014) International Journal of Modern Electronics and Communication Engineering (IJMECE) ISSN: 2321-2152 (Online) 2(3), March,.1-12.
32. Sinha, Manoj Kumar and Gautam, Awadhesh Singh (2015). Electronic Resource Management in University and Institutional Libraries of India in Changing Environments: An Overview. In: EmbeddedLibrarianship and Technological Challenges of the Digital Age: Conference Proceedings of 60thILA International (Diamond Jubilee) Conference , organized by Indian Library Association in collaboration with A.C. Joshi Library, Panjab University, Chandigarh during April 8-10, 2015 (Eds: B.Ramesha et.al.,) Indian Library Association, Delhi, 2015 Pp. 470-478 (ISBN: 81-85216-49-5).
33. Sinha, Manoj Kumar, Singh, R.K. Joteen (2015).An Analysis of UGC-INFONET Services in Manipur University. *In:* ICT Application in Libraries, Vol.1 (*Eds.* Manoj Kumar Sinha *et.al.*) Raj Publishing House, Jaipur, and 2015 Pp.305-318 (ISBN: 978-93-81005-96-5).

About the Authors

	Awadhesh Singh Gautam: He is working as full time Ph.D. Research Scholar under the supervision of Dr. Manoj Kumar Sinha, Associate Professor & Head in the Dept of Library and Information Science, Assam University, Silchar. He has attended many seminars, workshops and training programmes and published 10 papers in conference proceedings.
	Dr. Manoj Kumar Sinha, Associate Professor & Head, DLISc, Assam University, Silchar

	*Dr. Manoj Kumar Sinha (b.1965) did Graduation, Post – Graduation and Ph.D. Degree in Zoology, Library and Information Science from T.M. Bhagalpur University, Bhagalpur. Besides this, he has acquired B. Ed. Degree from Annamalai University in 1995 and also did Post-Graduate Diploma in Higher Education from IGNOU, New Delhi in 2002. At present he has been working as Associate Professor in the Department of Library and Information Science, Assam University, Silchar and he has been appointed as the Head of the Department w. e. f December 11, 2009. Prior to this he served the Assam University, Silchar as Assistant University Librarian from January 30, 1997 to January 30, 2003 and Assistant University Librarian (Sr. Scale) from January 31, 2003 to November 18, 2009 and as Reader, Department of Library and Information Science from November 19, 2009 to November 18, 2012. Before joining Assam University, Silchar, he served as Librarian in Jawahar Navodaya Vidyalaya, Gorakhpur (Navodaya Vidyalaya Samiti, Lucknow Region, Dept. of Education, and Ministry of HRD, Govt. of India) from February 15, 1993 to January 28, 1997. Before coming to library profession, he worked as JRF and SRF in Life Sciences under the CSIR Sponsored Research Project entitled "**Ecology and Phytochemistry of Biocidal Plants of Santhal Parganas, Bihar**" at University Department of Botany, T.M. Bhagalpur University, Bhagalpur.*
	He has published about 290 research papers and articles in the areas of Botany, Zoology, Environmental Sciences, and Library & Information Sciences. His areas of interest are Traditional Librarianship, Academic Library System, Public Library System, HRD issues, Users Study and Users Education, User Empowerment through ICT, Quality Management, Knowledge Management, Library Automation and Networking, Digital Library, e-learning, etc.
	He is life member of ILA, IASLIC, UPLA, SIS, MANLIBNET, JILA, Assam Library Association, FBAI, and actively associated with research and academic work. He is Member of Board of Post-Graduate Studies in Library and Information Science, Member , School Board of School of Information Sciences; Member , Swami Vivekananda School of Library

	Sciences (Feb 2011) ; Member of Academic Council; Assam University Court since December 2009. His biography has been included in many Biographical Directory of National and International importance. He has been associated with few journals as a Member of Editorial Board. He served as reviewer for few Indian and foreign journals.
	He has guided eight M. Phil. Students and 37 Masters of Library and Information Science students and also nominated as a Subject Expert in sister departments of Assam University. Since 2013 IPP Course Work programme has been introduced in the department and now he has been supervising 08 Ph.D. and 04 M. Phil. research scholars. 04 Ph.D. Scholars have been awarded Ph D degree and two Ph.D. scholars have submitted their theses and four M. Phil Scholars have been awarded M Phil Degree. He has also been associated with many universities of India and served as Subject Expert for evaluation of M. Phil/ and Ph.D. Theses, also conducted P G Practical Examinations, and acted as a Paper Setter etc. He has been regularly invited by the NERO, UGC Guwahati for evaluating Minor Research Proposals (MRP) and Seminar Proposals.
	He has wide experience in organizing events like Book Fair and Exhibition and also organized PLANNER-2005, Seminar on Digital Library Management (2008), Librarians Day and Organizing Orientation Programme for Fresher' regularly since 1997 on behalf of Assam University Library. Recently he has successfully organized National Seminar on Collection Development (NSCD-2011) in collaboration with Central Reference Library, Kolkata (Ministry of Culture, Govt. of India. He also organized Four Day National Training Programme on Application of Open Source Software for Library and Information Services. He has been actively participating contributing and presenting Invited / Contributed Research Papers in National and International Seminar/ Conferences, attended several Training Programmes and Workshops pertaining to ICT Application in Library and Information Services. Besides this he has honour of Chairing Technical Sessions in many Seminars and also acted as Rapporteurs, Rapporteur General in Seminars and Conferences. He may be contacted at mksinha1965@gmail.com, dr_mk_sinha@ yahoo.com, Mobile: 09435231672

Assessment of Information Literacy Skills among Law Students: A Case Study of Govt. Mizoram Law College, Aizawl, Mizoram

F. Chanchinmawia

*Research Scholar, Department of Library and Information Science, Mizoram University, Aizawl-796004
Email-chanchinafanai@gmail.com

Manoj Kumar Verma

Assistant Professor, Department of Library and Information Science, Mizoram University, Aizawl-796004
Email- manojdlis@mzu.edu.in

Abstract: The study present is an investigation on information literacy skills among law students of Govt. Mizoram Law College, Aizawl, Mizora. A survey was conducted to assess the information literacy skill of law students. A structured questionnaire was designed and randomly distributed among 118 law students, out of which 70 (82%) filled questionnaire was received for analysis. In general it was found that students had adequate skills in handling information for their basics needs. Most of the students were familiar with e-resources but lack of knowledge in handling the information for their specific requirement. Majority of the students were aware with copy right and fair, but still 30% percent of the respondents still practicing the habits of copying the whole text from original author. This study urges the inclusion of an information literacy program in the course curriculum and more awareness is required among students that will make the students more information literate.

Keywords: Information literacy, Computer, Internet, e-resources, Copy right and fair use, Govt. Mizoram Law College

1. INTRODUCTION:

After the invention computer the requirement of electronic resources become larger every day. With the recent development on information communication technologies and globalisation it is easier for every individual to access information from any part of the world. In a democratic society the access of information is enjoyed by all, respective of any restriction or distinction. The dissemination of information is one of the most basic of social activities and the most essential. Information literacy empowers one with the required knowledge about information and strengthens the skills to fetch the relevant information. It plays a fundamental role in educating the library users with various library techniques to access, evaluate and retrieved them on the basis of their requirement. A person

is called to be information literate when he can identify his information need and locate, evaluate and use the information effectively. An information literate person knows to use the information in most effective and ethical way (Verma and Rajiv, 2013).

2. INFORMATION LITERACY:

Information Literacy may be defined very simply as "the ability to access, evaluate and use information from a variety of sources. Information literacy comprises the competencies to recognize information needs and to locate, evaluate, apply and create information within cultural and social contexts. It is important to the competitive advantage of individuals, enterprises especially small and medium enterprises, regions and nations and provides the key to effective access, use and creation of content to support economic development, education, health and human services, and all other aspects of contemporary societies, and thereby provides the vital foundation for fulfilling the goals of the millennium declaration and the world summit on the information society. It further extends beyond current technologies to encompass learning, critical thinking and interpretative skills across professional boundaries and empowers individuals and communities (Chanchinmawia and Verma, 2017). Information literacy outlines on the basis of lifelong learning which is common to all disciplines, to all learning environments and to all levels of education. It enables learners to find the right information from authentic sources and extend their investigations, become more self-directed and assume greater control over their own learning. It has become the responsibility of higher educational to make the students as lifelong learners (Kelvin, 2014). Students are expected to be well-informed and continuously grow higher in their career ladder as individuals. Information literacy plays a vital role in fostering this growth and helps students to become independent and lifelong learners.

3. INFORMATION LITERACY:

According to the American Library Association (1989) -"Information literacy is a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."

CILIP (2013) defines IL as "Information Literacy knows when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner."

Doyle (1992) defined an information literate person as one who:

- Recognizes the need for information;
- Recognizes that accurate and complete information is the basis for
- Intelligent decision making;
- Identifies potential sources of information;
- Develops successful search strategies;
- Accesses sources of information, including computer-based and other technologies;
- Evaluates information;
- Organizes information for practical application;
- Integrates new information into an existing body of knowledge
- Uses information in critical thinking and problem solving

4. TYPE INFORMATION LITERACY:

The following types of literacy are discussed below:

1. **Information Literacy:** According to National Forum on Information Literacy, "The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand."
2. **Computer Literacy:** Computer literacy preceded digital literacy, and refers to knowledge and skills in using traditional computers (such as desktop PCs and laptops) with a focus on practical skills in using software application packages.
3. **Digital Literacy:** Digital Literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.
4. **Media Literacy:** Media Literacy when individuals retrieve, assemble and evaluate media. It rests on the use of tools present in technology literacy and is intertwined with the interpretation and creation of images in visual literacy.

5. GOVT. MIZORAM LAW COLLEGE:

Government Mizoram Law College is located in the western part of the Aizawl city and

affiliated to the Mizoram University as well as the Bar Council of India. Govt. Mizoram Law College is recognised by University Grant Commission, under section 2(f) and 12(B) of UGC Act, 1956. w.e.f. May, 2009. The college offers three year LL.B. course. Mizoram Law College was upgraded to deficit Grant-in-Aid status w.e.f. 25.08.2006 and at present there are 7 teaching faculties, 18 non-teaching staffs and 3 library staffs.

Library is run by one Librarian and two Library assistant. The Library is open from 10:00am to 4-30 pm in all working days. The Library has 150 registered library members including teachers, not teaching staffs and students and total collection of about 15000 books, 67 dissertation, 9 Magazine, 2 national journals and 7 English and two mizo news papers.

6. REVIEW OF LITERATURE:

Nicholas and Wallis (2005) discussed the dynamic role of library and information association to enhance the information literacy. They also discuss about many professional association of world who is working to make awareness about IL among the people. Betsy (2006) discusses the perception of first year college students that campus libraries are largely irrelevant to their lives. Suggest ways to make library instructions an integral part of the courses. Hobbs (2010) argued that digital media literacy is related to the ability to use a computer, social media, and Internet and people with high levels of digital media literacy are more active in social affairs and better able to express their opinions on a particular point. Eyal (2012) elaborate the main functions of a teacher in a digital environment and focus on the skills, abilities, and perceptions required of the teacher in the digital environment with respect to assessment, and will demonstrate the importance of adapting the various technologies to the different assessment purposes and define the term "Digital assessment literacy" is based on a doctoral thesis that examined the relationship between the technological environment and the teaching, learning and assessment processes in online courses. Verma and Rajiv (2013) elaborate information literacy in academic environment in Indian prospective and highlighted the librarian's role. Maidul and Rahman, (2014) examine the information literacy competency (ILC) of the arts faculty students at the University of Dhaka, Bangladesh and determine their strengths and weaknesses and it was found that students had limited skills in the area of information literacy and reasons behind it is not discussed extensively in their academic course curriculum. Tridib, (2017) revealed that information literacy is the only solution for the development of any socio-economically disadvantaged community and regular IL program should be organized by the public libraries in regular interval.

7. OBJECTIVES OF STUDY:

The objective of present study is to:

- Find out the ability to identify and specify the information needs by respondents.
- Determine the ability to access and evaluate the information resources by respondents
- Identify areas of strengths and weakness in digital information literacy skill among the respondents
- Know the level of familiarity of respondents with copy right and fair use
- Find out the respondents' opinion regarding the present Information Literacy Programme of the library.

8. SCOPE OF THE STUDY:

The study mainly focuses on Information Literacy skills of Govt. Mizoram Law College students to identify, locate, search, access, retrieve and using information from both print and electronic sources of information to satisfy the information needs. The scope of present study is further limited to UG students of Govt. Mizoram Law College.

9. METHODOLOGY:

For collection of data for the study, survey method has been used. A structured questionnaire was prepared and randomly distributed to 85 students Govt. Mizoram Law College to obtain required information with regards measure their information literacy competency and total 70 (82%) filled questionnaire were received from respondents for data analysis and draw the result of the study.

10. DATA ANALYSIS:

Analysis of respondents

The LLB course is six semester course and at once there are three semester running at a time. Table-1A depict the semester wise distribution of respondents and resolved that among respondents 26% are 1st semester, 34% are 3rd semester

and 40% are 5th semester students. Further it is also resolved from table that 51% respondents are female and 415 respondents re male. Table-1B shows the age wise distribution of respondents and resolved that 36% respondents are below than 25 years age, 36% are between 25 - 30 years, 24% respondents are between 31-35 years and only 13% are above 36 years age. Thus majority of respondents (72%) are young and below than 30 years of age

Table-1A: Course wise distribution of respondent

Course	Gender		No of Respondents
	Male	Female	
1st Semester LLB	06(09%)	12(17%)	18 (26%)
3rd Semester LLB	11(16%)	13(19%)	24 (34%)
5th Semester LLB	17(24%)	11(16%)	28 (40%)
Total	34 (49%)	36 (51%)	70 (100)

Table-1B: Age wise distribution of respondents

Age Group	Respondents
below 25 yrs	23 (33%)
between 25-30yrs	21 (30%)
between 31-35yrs	17 (24%)
36 year above	9 (13%)
Total	70(100)

11. Frequency to visit library

Library is a centre of knowledge in academic institutions. The frequency of library visit is a parameter to measure the awareness and utilization of library resources by respondent. Table-2 shows the frequency of library visit by respondents and it was resolved that majority of respondents 23% daily visited the library to fulfil their information needs while the majority of respondents 54% weekly visited the library.10% respondents visited library monthly and 4% respondents visited library occasionally.

Table-2: Frequency to visit library

Frequency of Visit Library	Respondents
Daily	16 (23%)
Weekly	38 (54%)
Monthly	11 (16%)
Occasionally	5 (7%)
Total	70(100%)

12. Purpose of library visit

The library users visited library for different academic needs and it's vary users to users. Table-3 shows the purpose of library visit of the respondents and it resolved that 59% respondents visited library for issue and return of books and 24% respondent for study and 12% respondents visited library to read periodicals.

Table-3: Purpose of library visit

Purpose	Respondents
Borrow/return books	41 (59%)
Study	17 (24%)
Read periodicals	12 (17%)
Total	70(100%)

13. Adequacy of library collections:

A library is recognized by its collection and services and users satisfaction is also depend upon adequacy of library collections and services. Table-4 shows the respondents view on library collections and resolved that majority of respondents 74 % feel that library collection is adequate to fulfill their information needs while 26% respondents reported that library collections are not adequate and it should improve.

Table-4: Adequacy of library collections

Library collections	Respondents
Adequate	52 (74%)
Not Adequate	18 (26%)

Total	70(100%)

14. Usefulness of the Library

The use of library by library users is a important parameter to measure the usefulness and respondents opinion about this is shown in Table-5 and after analysis it resolved that 37% respondents find library very useful and 56% respondents find it very useful where as only 7% respondents feel that library is not useful for them.

Table-5: Usefulness of the library

Usefulness	Respondents
Very Useful	26 (37%)
Useful	39 (56%)
Not Useful	5 (7%)

Purpose of information need

Different students required information on different purposes and generally the need of information differ from one person to another on the basis of their course, discipline and nature. Table-6 shows the purpose of information needs of respondents and depict that 53% respondents required information for their assignment, follow by 40% project work, where as 39 % need to update General knowledge and only 31% need information to update subject knowledge.

Table-6: Purpose of information need

(Respondents giving more than one answer)

Purpose	1st Semester	3rd Semester	5th Semester	Total
Preparing Assignment	14 (20%)	10 (14%)	13 (19%)	37 (53%)
Project work	0	0	28 (40%)	28 (40%)
Update subject knowledge	6 (9%)	7 (10%)	9 (13%)	22 (31%)
Update General Knowledge	12 (17%)	4 (6%)	11 (16%)	27 (39%)

15. Means of finding required books from the library:

As part of knowing about the library skills of respondents, they were asked to indicate different ways of finding required document and presented in table-7 and after analysis mixed response has been found to this question. 69% respondents reported that they are searching book on shelves directly, 29% respondents say they are dependent on library staff to find out books and 11% respondents took the assistance of friends while only 40% respondents use OPAC for searching the books.

Table 7: Method of finding a book (Respondents giving more than one answer)

Method of Finding Books	1st Semester	3rd Semester	5th Semester	Total
Search book shelves directly	12 (17%)	16 (23%)	20 (29%)	48 (69%)
Use OPAC	8 (11%)	11 (16%)	9 (13%)	28 (40%)
Taking assistance from Library staff	10 (14%)	8 (11%)	2 (3%)	20 (29%)
With the assistance from friends	3 (4%)	7 (10%)	6 (9%)	16 (23%)

16. Familiarity with information literacy concept:

To knowing the familiarity with IL concept, a question was asked to respondents and their response was shown in table-8 and after analysis it was found that that maxim number of the respondents (90%) ware familiar with information literacy concept. There was only 10% respondents who were not familiar with information literacy concept.

Table-8 Familiarity with information literacy:

Familiarity	Respondents
Familiar	63(90%)
Not Familiar	7(10%)

17. Computer literacy among respondents

In order to know the level of computer literacy among respondents they were

asked to indicate about their pattern of use of computers in survey and presented in table-9A and 9B.

Majority of the respondent (56%) are using computer from 5 to 10 years and 27% respondents are using computer more than 10 years whereas 17% respondents using computer from 1-4 years back only. The growth of ICT changes every aspect of life even inside the class room because computers are now coming in different form and format. Table-9B show devices used by respondents and resolved that 86% respondents have Desktop Computer, followed Laptop (45%), Tablet (37%) and 4% respondents having Kindle Readers where as all the respondent (100%) have smarts Phone with them.

Table-9A: Duration of computer use

Duration	Respondents
1 to 4 years	12 (17%)
5 to 10 years	39 (56%)
More than 10 years	19 (27%)

Table-9B: Devices owned and used by respondents

(Respondents giving more than one answer)

Devices	
Desktop Computer	60(86%)
Laptops	45(64%)
Smarts Phone	70 (100%)
Tabs	26(37%)
Kindle Reader	3(4%)

18. Rating of computer literacy skills

Computer literacy skill is one of the most important tools in handling information now a day. One must be aware of computer to accomplish his information needs. The computer literacy skills of respondents of Mizoram Law College are shown in table- 10 and after analysis it resolved that respondents are having high level of computer skills in open and save, print document/file, copy/paste and transfer file, whereas average skills in search OPAC. In overall, majority of respondents have satisfactory computer literacy skills.

Table--10: Rating of computer literacy skills

Computer Skills	Level	1st Semester	3rd Semester	5th Semester	Total
Open & Save	**High**	18(26%)	24(34%)	28(40%)	70(100%)
	Average				
	Low				
Print document / file	**High**	14(20%)	19(27%)	24(34%)	57(81%)
	Average	2(3%)	5(7%)	4(6%)	11(16%)
	Low				
Copy/ paste and file transfer	**High**	17(24%)	21(30%)	25(36%)	63(90%)
	Average	1(1%)	3(4%)	3(4%)	7(10%)
	Low				
Search in OPAC	**High**	7(10%)	9(13%)	5(7%)	21(30%)
	Average	8(11%)	12(17%)	14(20%)	34(34%)
	Low	3(4%)	3(4%)	9(13%)	15(21%)
Make a Power Point Presentation (PPT)	**High**	6(9%)	6(9%)	7(10%)	19(27%)
	Average	10(14%)	11(16%)	15(21%)	36(51%)
	Low	2(3%)	7(10%)	6(9%)	15(21%)

19. Internet literacy skills:

Internet becomes the most powerful tool and medium of information sources a present digital era and Internet literacy skill is become one of the most powerful tools to access, evaluate and disseminate information now. Table-11 show the respondents' Internet literacy skills and resolved that majority of respondents having average level of Internet skills in web browsing, write and send e-mail, and copy and download files from Internet. Overall majority of respondents have Internet literacy skills.

Table-11: Internet literacy skills

Internet Skills	Level	1st Semester	3rd Semester	5th Semester	Total
Web browsing	**High**	2(3%)	4(6%)	5(40%)	11(16%)
	Average	14(20%)	17(24%)	19(27%)	50(71%)
	Low	2(3%)	3(4%)	4(6%)	9(13%)

Copy/ download files from Internet	**High**	2(3%)	8(34%)	6(9%)	9(13%)
	Average	16(23%)	14(20%)	21(30%)	51(73%)
	Low		2(3%)	1(1%)	3(4%)
Write and send e-mail	**High**	6(9%)	4(6%)	8(40%)	18(26%)
	Average	12(17%)	16(23%)	16(23%)	44(63%)
	Low		4(6%)	4(6%)	8(11%)

20. Use of electronic information available on web:

Now a day web become a vital source of all type of information and available round the clock and any one can access it in any where any time and whatever mode with help of Internet. To know the respondent's attitudes towards use of electronic information questions were asked in survey and presented in table-12. The analysis of responses clearly indicates that majority of the respondents (84%) are using the information available on web for various academic purposes.

Table- 12 Used of information from web

Response	Respondents
Yes	59 (84%)
No	11 (16%)
Total	70 (100%)

21. Search technique used for searching e-information:

Using various search strategies and techniques the information on internet can be search using different search technique. Different search technique has been developed to improve the quality of retrieval process. Users' responses on the use of search techniques are analyzed and presented in table-13 and analysis resolved that 59% respondents are using simple keyword search for searching and retrieving information, 13% respondents applied field search techniques while 17% respondents and 6% respondents using boolean operators and truncation respectively. This indicates that majority of the students are not aware of the importance of various search mechanism available for effective retrieval of information

Table-13: Used various search techniques and strategies

Search technique	Respondents
Simple keyword	42 (59%)
Field Search	9 (13%)
Truncation	4 (6%)
Boolean Operator(AND OR NOT)	12 (17%)
Others	3 (4%)

22. Familiarity with copy right and fair use:

In order to find out the awareness among the respondents on copy right and fair use, data has been gathered during survey and shown in table-14. It is clearly notified from the analysis that majority of respondents (74%) aware and know about copy right and fair use while 18% of the respondent don't know about it. Table-14-B shows the time period when respondents know about plagiarism and found 19% respondents came to know the word plagiarism at the time during responding questionnaire only while 41% respondents have already known one year back, followed by 29% respondents who already know about plagiarism for 2 to 3 years and only 11% respondents are knowing plagiarism for more than 3 years.

Table-14A: Familiarity with copyright and fair used

Response	Percent
Yes	52 (74%)
No	18 (26%)
Total	70 (100%)

Table-14B: First time to know the words plagiarism:

Durations	Percentage
At the time of responding Questionnaire	13 (19%)
One year Back	29 (41%)
2 to 3 year back	20 (29%)
More than 3 years back	8 (11%)

23. Users' satisfaction with information literacy programme of library:

Govt. Mizoram law college library organized library orientation program every years to make aware library users' about library, its collections and services, shelves arrangement, use of OPAC etc. Table- exhibit the satisfaction level of the respondents with the present IL programme of the library and after analysis it resolved that that majority of respondents (57%) believed that orientation programmers offered by the library would enable the users in searching and finding their information easy and they are satisfied and 27% respondents are highly satisfied whereas, only 11% respondents are neutral and 4% respondents are unsatisfied with the library orientation programme.

Table-15: Users' satisfaction with information literacy programme

Satisfaction Level	1st Semester	3rd Semester	5th Semester	Total Response
Very Satisfied	4(6%)	6(6%)	9(13%)	19 (27%)
Satisfied	10(14%)	14(9%)	16(23%)	40 (57%)
Neutral	3(4%)	4(6%)	1(1%)	8(11%)
Dissatisfied	1(1%)		2(3%)	3(4%)

24. Areas need to improve in library orientation:

As stated above that every year library is organizing library orientation program to develop the skill and competency. It was tried to know the users opinions about areas of library orientation need to improve for enhancement of their search capability and presented in Table-16. After analysis it resolved that 77% respondents feel that instruction/training of use of e resources needs to improve followed by search strategy (53%) and OPAC (51%). Majority of respondents having good computer literacy even then 21% respondents feel that use of computers should be part of library orientation and 11% respondents feel that there should be proper orientation about use of print resources of library and its need to improve in future library orientation.

Table-16: Areas need to improve in library orientation

(Respondents giving more than one answer)

Method	1st Semester	3rd Semester	5th Semester	Total
Use of printed resources	2(3%)	2(3%)	4(6%)	8(11%)
Use of e-resources	12(17%)	18(26%)	24(34%)	54(77%)
Use of Computers	2(3%)	5(7%)	8(11%)	15 (21%)
Search strategies	14(17%)	12(17%)	11(16%)	37(53%)
OPAC	11(16%)	9(13%)	16(23%)	36(51%)

MAJOR FINDINGS:

1. Among the respondents, 26% are 1st Semester students, 34 % 3rd semester students and 40% 5th semester students and majority of them (51%) are female and (49%) male. About 63% respondents are young and below the age of 30 years.

2. Library users are familiar with library and (23%) respondents are regular users of library and visited library daily. Among rest respondents, (54%) visited library weekly, (16%) monthly and 7% occasionally when they feel some need. The respondents are visiting library mainly to borrow books (59%), study/reading the books (24%) and reading periodicals (17%) respectively.

3. Majority of the students (53%) needs information for preparing assignment, followed by (40%) to do their project work, (31%) and (39%) visit library to update subject knowledge and General knowledge respectively.

4. Majority of respondents are having high level of computer skills in open and save, print document/file, copy/pest and transfer file, whereas average skills in search OPAC, write a research paper using word and make a power point presentation.

5. Majority of respondents having average level of Internet skills in web browsing, write and send e-mail. Over all respondents are Internet literates.

6. Majority of respondents (74%) are familiar with copy right and fair use. About 70% respondents aware with this since 1-2 while 13% respondents came to know the word plagiarism at the time during responding questionnaire only

7. About 90% respondents are satisfied with library orientation program and they feel that it is very useful to enhance their library literary but many of them feel

that some sectors like use of computers, search strategy, use of OPAC, how to use print resource need to improve in future library orientation program.

25. CONCLUSION:

For the present environment requirement of information ICT technique will still remain the basic way to open the door for accessing Information. Keeping in view the various specializations in the area, it is necessary for students to be equipped with Information Literacy competencies that can help them to effectively search, locate, evaluate, and use the required information. Therefore, it is crucially being recommended that user oriented IL programme should be organized regularly and the issues like how to retrieve information from the printed and electronic sources, various search strategies, use and advantage of keywords and Boolean operator should be address properly. Evaluation of electronic resources may be added in the information literacy program of the library. It is mandatory for the students know the fair use and copy rights to explore them shelf in the Digital environment. It is also remarkable that library resources, services, facilities and library personnel are inseparable in the process of organizing information literacy programs.

References:

1. Lal, C. (2008) Information Literacy in the Digital Age.
2. ALA, (2000). Information literacy competency standards for higher education. (Available at: http://www.ala.org/acrl/standards/informationliteracy-compet ency (Accessed 17 July 2017).
3. CILIP (2013). Available at: http://www.cilip.org.uk/about/special-interest-groups/ information- literacy-group (Accessed 16 September, 2017).
4. Joint, Nicholas and Wallis, Jake. (2005). Information literacy and the role of national library and information associations. *Library Review.* 54(4), 213-217.
5. Barefoot, Betsy (2006). Bridging the chasm: First year students and the library. Chronicle of higher education 52: B16.
6. Vishala, B. K. and Bandi, M. K. (2006).Information literacy teaching in higher education environment. 4th International Convention CALIBER-2006,

Gulbarga, 2-4 February, 201-209

7. Mishra, R.N and Mishra, C. (2010). Relevance of information literacy in digital environment. *Journal of Emerging Trends in Computing and Information Sciences*, 1(1), 1-7.
8. Sasikala, C. and Dhanraju,V. (2010). Assessment of information literacy skills among the science students of Andhra University: A survey. *Library Philosophy and Practice*. http://digitalcommons.unl.edu/libphilprac/518 (Access on -19th August, 2017).
9. Regha, V. Sakthi (2011). A study on information literacy competency of research scholars of the University of Madras. Available at: http://shodhganga. Inflibnet .ac.in/handle/10603/406 24 (accessed on 06 August, 2017).
10. Eyal, L. (2012). Digital assessment literacy the core role of the teacher in a digital environment. *Educational Technology & Society*, 15(2), 37–49.
11. Dubicki, E. (2013). Faculty perceptions of students' information literacy skills competencies. *Journal of Information Literacy*, 7(2), 97-125.
12. Singh, Devendra and Joshi, Manoj K. (2013). Information literacy competency of post graduate students at Haryana Agricultural University and impact of instruction initiatives: A pilot survey. *Reference Services Review*, 41(3), pp. 453-473.
13. Verma, Manoj Kumar and Rajiv, Pratima (2013). Information literacy in academic environment: An Indian prospective". In –Reddy, E .Rama et.al, Information management today and tomorrow, Today and Tomorrow publishers, New Delhi, pp. 589-594.
14. Gadagin, B.R. (2014). Information literacy program in higher educational institutions of Hyderabad Karnataka region: A survey. In- By P.S. Kattimani and Suresh Jange, Integrating ICT in academic libraries: marketing a difference in knowledge age, Neoti Book Agency publishers, New Delhi, 580—587.
15. Islam, Md. Maidul and Rahman, Md. Anisur. (2014). Assessing information literacy competency of arts faculty students at the University of Dhaka. *Li-*

brary Philosophy and Practice. Available at: http://digitalcommons.unl.edu/libphilprac/1110 (Access on 9th September, 2017).

16. Kevin Michael Klipfel, (2014). Authentic engagement: Assessing the effects of authenticity on student engagement and information literacy in academic library instruction. *Reference Services Review,* 42 (2), 229-245.
17. Mahajan, Preeti and Kumar, Anil. (2014). Assessing information literacy competency in higher education: A study of Panjab University, Chandigar. *SRELS Journals of Library and Information Management,* 51(6), 369-375.
18. Murtaza, Rafique Ghulam(2014). Information literacy skills of faculty members: A study of the University of Lahore, Pakistan. *Library Philosophy and Practice.* Available at: http://digitalcommons.unl.edu/libphilprac/1072 (accessed on 07July, 2017).
19. Suresh Kumar, C. (2015). Information literacy among the post graduate students and faculty of colleges affiliated to the University of Kerala. Available at: http://hdl.handle.net/10603 /152355 (accessed on 06. July 2017).
20. Mahadeva, S. and Prasad M. (2016). Information search and information literacy skills of faculty of polytechnic colleges in Karnataka in utilizing information resources: An analytical study. Available at: http://hdl.handle.net/10603/134584 (accessed 17 July, 2017).
21. Chanchinmawia, F. and Verma, Manoj Kumar (2017). Significance of Information Literacy in Digital Environment among Academic Community and Role of Library Professionals, In Bansal, Vaibhav et.al Ed., Conjugative management, library information science, social science and technology for virtual world, New Delhi, pp- 117-122.
22. Chattopadhyay, Tridib. (2017). Information literacy through community development programmes of public libraries: A proposed model for Odisha state. *The Journal of UGC - HRDC Nainital,* 11(2), pp.135-143.

time and asynchronous access to reference librarian information and services which help to increase access to these services to those located around the world as well as those who are local but whose schedules do not permit trips to the library during working hours. Growth in the information and technology had produced a set of several new terms like paperless library, e-library, virtual library and gateway indicating its impact on the various fields. There is a striking effect on the user behaviour in information utilization because of changing dissemination of web environments with the development of information and technology. The library users request immediate and suitable usage of information across the time and space limit, which change the library environment. This repositioning strategy was adopted to help libraries extend the services of a traditional library by enabling activities such as access to materials outside the physical confines of the library.

Information and technology devices provide one to many communication facilities. The accessibility of information is made available for multiple users at a time with their terminals. End users of information can reach the information producer more easily and directly. Digital l resource can store and contain a vast amount of information in digital format. There is no need of physical storage space. Different type of digital resources is used to create this type of environment in libraries like different IT hardware's, software's, internet sites and different mobile apps. With the use of these resources we can make library digital and share knowledge and information to the remote library users. Information and technology literacy can enable us to turn challenges into opportunities, opportunities into challenges, knowledge into information, information into knowledge, learning into teaching and teaching into learning.

2. Digital Resources of libraries

Digital resources include all resources that enable library to make intelligent and innovative gateway to access the global network on information resources and services. A digital resource is a combination of technology with information and meaningful learning design. These resources are available in two kinds i.e., Paid and Free. Some digital resources in soft manner are as follows:-

- **E-Database: -** Electronic database is the boon for mankind. It involves the application of computers and communication technology in the task of information handling and information flow. It is a collection house of documents, knowledge, information graphic, audios, videos material stored in a

variety of media ranging from periodicals, reports, audio/video disk, optical disk, books, slides etc.

- **E-Journal:** - In the digital form printed journal is shift into electronic form. It is very fast to access and use it any ware anytime with a low expanse.
- **E-Books:** - It is a digital reading material in text format with graphic. The searching method of e-books is same as printed books by using title and author name. You can view or download it in your digital device.
- E-**Services:** - Information and technology provides us other e- services to make communication with the users like E-mail, resources sharing through internet, online searching and audio/video conferencing to improve efficiency of a library.
- **E-Consortia:** - Consortia means a group of organization who comes together to fulfil a combined objective that requires co-operation and the sharing of resources. It usually refers as co-operation and collaboration among the libraries for the purpose of sharing information and resources electronically.
- **WWW:** - World Wide Web is used with the help of internet. Any people live any ware in the world with the help of this tools easily access different digital library. It gives the facility to view of different types about any information in world. We can also access the different type of social networking sites to make communication to transfer or share the knowledge and information to the users with the help of WWW.

3. Access Method of Digital Resources

There are basically two methods to access digital resource from the library, one is direct and other is remote access.

- **Direct Access Method:** - These types of resources which can be used anytime/any ware, for example a database containing in a CD.
- **Remote Access Method:** - With the help of user name and password users can subscribes the digital library E-Resources with the help of internet/

intranet 24X7 any ware in the world.

4. Social Networking tools

Social networking tools mean all social networking sites and software/applications like Facebook, whatsApp, linked in, you Tube etc. Social network is a set of people or organization connected by a set of social relationships, such as friendship, co-working and knowledge or information exchange. The use of these tools is steadily increasing in India and world. Many peoples in India become a member of at least one social Networking site. Social networks are explicit representations of the relationships between individuals and groups in a community. These have become an important part of modern society and contribute of life in many contexts social, political, educational and business. These tools and the library itself will need to be designed to improve the intellectual accessibility of those digital resources likely to have greatest relevance and value to this community.

- **Facebook:** - It is a commonly used networking site used to make social network in world on internet. It is used in our computer as well as on our smart phone with internet facility. It is one of the first social networks to have been built in exclusivity. It can be provide a variety of services like searching related resources, persons, community and groups. We can send Audio, video or other graphic and text file to our group peoples and friends. After like or sharing the facebook can spread the information to another connected member of different facebook users.
- **WhatsApp:** - WhatsApp is also a common messenger application on our smart phone. It supported to send many type of multimedia files like audio, video, picture, graphs and text file etc. We can also make a group of peoples though are used WhatsApp on their mobile phone. Broadcast facilely is also available on it. Sending information and knowledge audio/video or other graphic/text based file is very easy threw it. Most of the people in India are using this messenger application.
- **Twitter:** - Twitter is a service for friends, family and co-workers to communicate and stay connected through the exchange of information, status or other message quick. It is very simple and familiar for the user to send information to his followers. It is widely used in India to spread news or

their views on any news update. Library can also use it to broadcast information, news or blogs for his users.

- **YouTube:** - It is used as a video/audio tutorial website and application on mobile phone and our computer. With the help of YouTube library can upload any information, books or lecture in the form of video or audio. Anyone or only authorise user can download it and used it.
- **LinkedIn:** - It is used for creating network of co-workers and other association. It allows member to look for job seeking out experts in a particular area or to make contact with other professionals through trusted connection. We can create groups and use it as information exchange.
- **MySpace:** - MySpace is providing a public virtual space for your public identity, accessible to anyone. It encourages user interaction through their open, publicly accessible user profile pages. MySpace also allows users outside of their network to view users profile pages, although with limited access.

All the social networking tools are very useful for libraries for sharing information and knowledge. With the help of them we can make groups and share information related common interest group, upload video or audio, and send information in the format of graphic or text. Library can also allow the member users to send information to one to one and one to all. Users are able to stay informed with new knowledge about their field. Library can also use these tools to make communication between the users. Users can used these tools as messenger to discuss on any topic or research. Library can provide links of all library resources to his users. These tools are also helpful for online survey or reviews about any books, information and researches.

5. Open Source Software

Open source software is software's that are free (sometime cost of support services) for everyone with their source code. We can also customise them according to our need. There is none or low licensing fees is applicable for them. We can change their source code according to our use. We can increase their quality or efficiency to customise them. We can also change their security features according us. Digital resources in library are a costly affair which involves a huge amount of budget. Using of open source software in our library we can reduce the budget amount.

There are many open source software available for libraries like Koha, Greenstone, DSpace, NewGenLib, Digital Library etc.

- **Koha:** - Koha is designed to work on Linux, but will work on Windows with the installation of a series of additional modules. It is operable in English and other languages being developed and translated by the community members. It is released under a GNU General Public License (GPL). It is an integrated library system. It provides a simple and clear interface for library users to perform tasks such as searching for and reserving items and suggesting new items. It enables library staff to capture details of all library items. Library management becomes easier through automated collection of data. Online supervision becomes possible, reducing the line management responsibilities of senior staff. Latest version of Koha 17.05 is in use.
- **Greenstone:** - Greenstone is suite of software for building and distributing digital library collections. It provides a way of organizing information and publishing it on the web or on removable media. It provides a new way of organizing information and making it available over the Internet. It is also released under a GNU General Public License (GPL). Greenstone can import digital documents in formats including text, html, jpg, tiff, MP3, PDF, video, and Word, among others. The text, PDF, HTML and similar documents are converted into Greenstone Archive Format (GAF) which is an XML equivalent format. Latest version of Greenstone3.08 is in use.
- **DSpace:** - DSpace software runs on Linux, Solaris, Unix and Windows. It is free open source software. It allows you to capture, store, index, preserve and distributes your digital material including text, video, audio and data. DSpace provides a way to manage your materials and publications in a professionally maintained repository to give them greater visibility and accessibility over time. The code is currently licensed under the BSD open source license. This means that any organization can use, modify, and even integrate the code into their commercial application without paying any licensing fees. Latest version of DSpace 6.0 is in use
- **NewGenLib:** - NewGenLib is a fully web based integrated library manage-

ment software that runs on distributed computers through a network or server. It can also run on local area networks without access to the Internet. We can also use it on our smart mobile phone or TAB. It is Configurable with SMS system. It has Integration with Twitter helping send messages of transactions directly to users Twitter accounts. It has also Integration with Gmail or paid mailbox account. This enables automatic sending of email to patrons during issue /return. Latest version of NewGenLib 3.1.1 is in use.

6. Challenges to use Digital Resources

Implementation of digital resources in library is not an easy task. The major challenge to adopt digital resources in library is high budget. The resources used for digitization of library are highly expensive and used with a high infrastructure. Infrastructure cost means the cost of hardware/software and other communication resources. It is very high in initial stage. Skilled manpower is required to establish and use them. Librarians need to understand technologically facilities and knowledge resources like all hardware/software and books/journals etc. For successful implementation of digital resources in library is essential that LIS professionals are well trained. To make communication in outer world for transferring information in different format like audio/video, graphic and text required high bandwidth communication channel. The digital library is dependent on telecommunication and computer. As new technology comes in the market the digital system should change or adopt that technology. Security is also a major issue for accessing digital resources. To prevent unauthorized access and to prevent the information form virus is major task in digital system. One challenges overcome for digital libraries is the way to distribute information. Digitization violates the copy right law. Any users can be freely transferred the content of one author without his acknowledgement. So it is also a big challenge for a digital library how to distribute information or contents of any author with protecting his copyright.

7. Conclusions

Digital resources helps to progress the rank of the library and it condense the work stack of the library profession. It is however, a complex project and needs to be carefully planned. The initial cost of digitization is high but experiment shows that once digitization is introduced then the cost to manage this collection will be cheaper than that of any traditional library. The implementation of digital resources in library is very useful for users and library professionals for speedup

the accessing and maintain of library information as well as the automation of the libraries. The question of access digital resources is a perennial one to libraries, but the advances that libraries have made in providing access to a diverse group of resources and to a widening constituency group speaks of the potential services that can be offered to remote users. Conference, seminar and other training programs are needed to train the users and library professionals about these digital resources. In present scenario technology skills is an important part of library profession. Librarian should make sure they acquire technological skills continuously

REFERENCES

1. Ashok Babu, T. "Modern Information technologies: Their impact on Library Services", Library Information Technology in modern era: Libraries and Librarians in New Millennium, New Delhi; Commonwealth, 1"999, p 65-72.
2. Chandra, K., Sankaranarayanan, D., Nagarajan, M., & Mani, V. (2014). A Study on Use Pattern E- Resources among. Journal of Advances in Library and Information Science, 1-05.
3. "Data.gov Releases Open Source Software." (2012), http://www.data.gov/opengovplatform.
4. Devarajan, G. "Applied research in Library and Information Science", New Delhi; Ess Ess Publications, 2005, p 74.
5. Goria, Sunil (2012). Building website for mobile phone users of india Agriculture University library: a model: DESIDOC journal of library and Information Technology. Vol32:4358-364. http://www.publication.drdo.gov.in.
6. Singh, Mahednra Pratap., "Use of Information Technology in Library and Information Science", New Delhi: Ess Ess Publications, 2008, p 21.

Emerging trends of Research Support Services in Academic Libraries

Vibha Gupta

Junior Research Fellow
Department of Library and Information Science
University of Lucknow, Lucknow
Email: guptavibha1994@gmail.com
and

Dr. Babita Jaiswal

Associate Professor
Department of Library and Information Science
University of Lucknow, Lucknow
Email: drbabitajaiswal@gmail.com

Abstract: *Higher education and academic libraries are in a phase of turbulent changes. Technology, pedagogical shifts and programmatic changes in education drive libraries to continually evaluate and adjust their services to meet new needs.To provide valuable services in this shifting, libraries are trying new ways to support teaching and research within the country and across the country. This paper throws light on the concept of research support, research life cycle, and possible library support; highlights the university library services to support research; and; focused to presentan overview on emerging trends of research support services in academic libraries.*

Keywords: Research support services, Emerging trends, Academic libraries, Research life cycle,

1. Introduction:

Academic libraries are the nerve centres of all academic activities of any academic institution. It is a holy place of knowledge bestowed to the seekers so that they can grow physically, intellectually and socially and gain self- knowledge. It is said that the well- stocked academic library is the powerful stimulant to draw out latent powers of intellect and thus makes major contribution in the activities of teaching, learning and research (Chadha & Arora, 1989). Academic library stands for three levels of libraries i.e. school, college and university library. If we arrange them in a hierarchy of importance in research, teaching and learning, we surely will place university at higher order then remaining two libraries. Jasper (1965) claimed that three things are required at a university: Professional training, education and Research. By isolating any one of them, the spirit of the university perishes. Among all these three factors 'Research' is one of the important factor of the universities and an integral part of the university. In fact, research is a purposeful work and

helps in expanding the frontiers of knowledge (Rao, 1993).

Advancement in information communication technology and their impacts on research teaching and learning has changed the whole scenario of knowledge generation, management, dissemination and communication. The expectations and demands of library users are also changed. It is so in the case of researchers also. Researchers have challenged with the issues like plagiarism, the data management, measurement of research impact, data literacy, and research skill enhancement and so on. Thesechanges are compelling libraries to re-assess their role in this whole changing set-up. "The library enhances research activities by providing resources and researcher-support services that are clearly aligned with the strategic priorities of the University research programs and delivered in well-integrated, collaborative and client-centred ways. The changing nature of library position and responsibilities makes it necessary to continuously re-calibrate the library services" (Jessy and Rao, 2016).

2. Research Support:

Hurston (1942) speaks in a very clear and simple words, 'Research is formalized curiosity. It is poking and prying with a purpose.' Further the statement added by Hoffman (2016) that this curiosity is leading in creation of knowledge and takes place on every campus, regardless of its mission or size. "Research support isn't something limited to large research libraries. Academic libraries of all sizes, missions and locations – including liberal arts institutions, community colleges and others that are teaching-focused – are shifting to broader forms of research support." (Hoffman, 2016). The purpose of research support by the library is to play a significant role in supporting research by providing relevant information to the research scholars through variety of ways and means. It will supportthe academic endeavour of the university and contributing to its reputation.

Research support has been defined across the time by different authors who have validated research supportby academic libraries in their definitions. Parker (2012) defined research support as a set of services and facilities which assist in increasing research productivity and scholarship. Borgman (2010) observed that the role of libraries is changing from a provider of reader services to author services due to technological, political, economic and social changes in higher education. The Institute of Germanic and Romance Studies (2010) as cited by N.Pasipamire (2015) defines research support as the assistance provided by subject specialists to diverse faculties in the academic community to enhance their research skills. Raju and Schoombee (2013) says that research support is the proactive engagement

of the librarian with the researcher. Pasipamirehas explained both the views and said that Parker's definition made it clear that research support can come from anywhere within the academic community while Raju and Schoombee, and the Institute of Germanic and Romance Studies, has defined researchsupport in the context of the library.

3. Research life Cycle and Research support by libraries:

The research life cycle basically starts from identification of knowledge by undertaking literature reviews, creation of knowledge by exhaustive study of existing related literature, making assurance about the worthiness of the produced knowledge and culminates in dissemination of knowledge through proper channels of publication, via presentation at conferences etc.(Cann, 2011). Academic Libraries can support research activity at each stage of research life cycle. It would help in enhancing the quality of research work of the patrons as well as it would help libraries in seeking new avenues in serving their research patrons. Schoombee (2013) has identified six stages that are followed in the research life cycle namely: prepare, gather, create, preserve, share and measure. These six stages of research life cycle are explained in the table given below with possible research support services provided by libraries.

Library support at each stages of research life cycle

S.No.	Stages of research life cycle	Description	Library support
	Preparation	**i)**Reading literature for ideas and deciding the area **ii)** Formulating a research question **iii)** looking for any funding body for funding the research **iv)** To achieve competencies on the selected area by attending workshop and training programmes.	**i)** Providing assistance through appropriate collection development. **ii)** Assistance through compilation of subject bibliographies, indexing and abstracting journals. **iii)** Offering support and, providing assistance with grant applications. **iv)** Organising information literacy programs for researchers.

	Gathering	**i)** Literature review against the selected topic **ii)** Planning, identification and selection of suitable research design and research methods **iii)**Research ethics **iv)** Data collection	**i)** Supporting researchers in information discovery activities. **ii)** Supporting the skills needed to find the required resources efficiently and, providing advice and training.
	Creation	**i)**Data Analysis **ii)**Writing, **iii)** Editing **iv)**Proofreading **v)** Arranging references **vi)** Act in accordanceto copyrightrules and avoid plagiarism.	**i)** Support the management of research data, consulting with researchers at the point of data creation and advising on standards applicable to their needs. **ii)**Creating and organising strategies for documentation, files, and backups,
	Preservation	**i)** Managing the research output **ii)** Preserving the research data.	**i)** Library can assist in compiling the data and planning the data management plan. **ii)** It can help with collecting and making available data sets for reuse. **iii)** Helping with research data curation and management.
	Sharing	i) Sharing the research results through formal and informal network.	**i)** Advising in identifying, promoting and creating virtual networking forums. **ii)**Helping in choosing right platform for their research result sharing. **iii)** Advice and support lecturers/ researchers in open access publishing through the open journal system.

	Measurement	i)Strategic research management determining journal impact, author productivity and impact reports. ii)Creation of research profile of the work to increase visibility among the scholarly community and find out collaboration opportunities.	i) Providing advice on measurement of impact of research publication. ii) Should provide services in creating personalized researcher impact profile. iii) Should help in understanding and using bibliometrics like measurement for example, citation scores, publication counts, and h-index measures.

4. University Library services in support to research:

The university libraries have been providing various library services to their researchers as to support research is one of their missions. Researchers have privilege to be benefitted with library services from the initiation of research to writing the report. Traditionally there are library services such as document delivery service, bibliographical services, selective dissemination service, reference service, referral service and dedicated research space etc. A few of the library services are described below:

i. **Collection development:**Jubb and Green in the report of Research Information Network& Consortium of Research Libraries (2007) remarked that academic libraries have critical role in supporting research in all subjects and disciplines within their host universities or colleges by developing collections. Judiciously selected and acquired collection of current and retrospective literature plays vital role to communicate the information to researchers (Rao, 1993).The collection should be available on both formats print and electronic so that user may use the information according to their need.

ii. **Document delivery service:**Document delivery service is a service of fulfilling the information need of users.It is done by supplying documents on demand to the users either in original or Xerox of the same irrespective of the location and form of the original documents. The document is supplied in different modes such as 'supply from the library collection itself, by obtaining documents from other libraries on inter-library loan, by joining library consortia for subscription to journals and databases and sharing the resources, by procuring copies of documents from other libraries, documentation centres and commercial document supply agencies like publishers and by accessing and downloading web- based documents' (Veenapani, 2012).

iii. **Selective dissemination service:**SDIserves researchers need to keep abreast with the latest work in their field. It also aid researchers in obtaining a detailed retrospective review of development till date in the particular field be-fore embarking on new research. SDI services can be provided manually or electronically. When librarians assist manually them generally, select information against the research·interest areas of researchers and then disseminate it to them.While in electronic mode, a user defined regular alerting service on selected subjectsto newly published reports, journal articles, patents and other documents which have a high probability of interest to the user is set up (Namuleme & Kanzira, 2015)

iv. **Current awareness service:** Current awareness services inform researcher's promptly, at the earliest of publication and before absorption into comprehensive secondary sources. Libraries fulfil the demand of current awareness service by providing monthly list of articles or content pages of journals recently received, new accession lists, in-house abstracting and indexing services etc.

v. **Information literacy programme:** Information literate people are trained in the application of information resources to their work. Information literacy is a vital skill in the pursuit of knowledge. Information literacy programmes enableresearchersto recognizetheir information need, locating their information efficiently, evaluate accurately, use effectively and clearly communicate the information

vi. **Dedicated research spaces in academic libraries:** A space that is convenient for knowledge creation and intensive study and which also smoothen the day to day research activities is a requirement for fruitful research and that can be provided in libraries by the provision of dedicated research space. Dedicated research space which includes facilities like research carrels, computer system etc. provide a conducive reading environment to sit comfortably,make extensive use of library materials and produce the work of intellect. Thus academic libraries must have a dedicated research space to aid the researchers.

5. Emergingtrends in research support services in Academic libraries

Higher education and academic libraries are in a transition period of technology, pedagogical changes and shifting in teaching and learning. Research is also bearing impact of these changes. Research and learning across institutions is becoming more team based, crossing disciplines and dependent on increasingly sophisticated and varied data. To provide valuable services in this transition libraries must think about new ways to support research (Hoffman, 2016).The

emerging trends in research support services are the results of provocation of libraries in this direction.There is a study done by Proudman (n.d.) on the current practices in academic library services especially research support services. Her study which covers 80 research institutions, from USA, Canada, Asia and Europe. She has described emerging trends in research support services.The trends are given here with some modification for consideration of university libraries in order to enhance the value of research.

Profiling digital identity of researchers: Online presence in academic communities on different platforms improves the visibility of researchers in scholarly community. It helps researchers in communicating their research activities, scholastic work among peers except the traditional methods of publishing research work. Academic libraries aid their researchers by the means of :

i. Helping researchers to become visible in research networks or platforms such as Mendeley.com or Academia.edu ,supporton correct use of digital identifiers such as Researcher ID, SCOPUS and Scopus author ID and advising on do's and don'ts for digital identity .

ii. Provide consultation over efficient and exhaustive use of social media in preparation, collaboration and sharing stages of research.

iii. Provide guidance inusing the citation management tools like Mendeley, Zotero, and Endnote Etc.

Bibliometrics / Impact management: Academic libraries are taking initiatives in starting bibliometrics or impact management of scholastic contribution of researchers.Libraries guide young researchers on choosing right platform for their work. If they are looking for publication with journals, guide them on the factors of h-indexes, impact factors, basic information on the range of metrics available and the differences between rankings, providing personalized impact measurement service to researchers or groups.

Academic integrity and plagiarism: Libraries are taking interest in supporting academic honesty, to make aware about ethical policy and moral code of academia so that cheating and plagiarism like thing should be avoided. This type of activities are in the favour of safeguarding institutional reputation. Libraries are providingdeceitful and plagiarism policies, guidelines on research ethics and academic honesty, guidance on how to avoid plagiarism, organizing, training sessions on plagiarism detection with the help of softwares.

Research data management: Data management ensures that the story of researcher's data collection process is organized, understandable and transparent.

It is a new service area becoming popular among libraries and librarians. Librarians have begun to provide a range of services in this area and now teach data management to researchers, work with individual researchers to improve their data management practices, create data management subject guides, and assist in supporting funding agency and publisher data requirements (Surkis & Read, 2015). Research data management is a process or activity involves careful organisation of data since it is planned to collect, dissemination and archiving of valuable results. It is done so to make reliable verification of results which builds the base for further research on the data. Academic libraries are working towards research data management so that the time and resources spend on research could be preserved and could serve the purpose of further research. It is also the responsibility of the institution and researcher to ensure that the data is reliable, correctly cited and correctly organized. Libraries should aware and trained their researchers in this direction.

Publication support: Libraries are now changing their image with content collection to content creation. As libraries are expanding their service portfolio to best support their user's needs, 'library as a publisher, phrase is becoming popular. Libraries are offering range of services to support publishing scholarship, from working papers to publicizing final work. Open access publishing is one new budding area where researchers as well as libraries are taking interest in publishing the scholastic work. Open access publishing is now supported by various international and national policies. So, more libraries are supporting their researchers in publishing efforts. Libraries are increasingly providing assistance on open access publishing, related threats and the best way to publish their scholastic work.

Research tools and apps: The technological diffusion and abundance of online availability of information have great impact on research, teaching and learning. Uses of devices and the demand for 24/7 access to information has make the libraries to orient themselves in a wide variety of online tools and apps to serve the users. Tools and app list categories include data gathering and analysis tools, reference management tools, collaboration&communicationchannels e.g. discussion forums, research forums &social media platforms, data storage, statistical analysis, reading &writing apps, online scholar profiles and many more.Some libraries are creating their own apps, pluginsand mobile interfaces. Libraries are taking interest in supplying technical infrastructure for data storage, digitization of content, archiving and preservation of research data and results through facilities like cloud computing, computational tools like 3-D mapping, algorithm literacy analysis, advanced visualization techniques etc.

The most of the services mentioned above are practiced in foreign countries in majority. It can also be followed by university libraries in India with suitable changes, if required. Research support services support the activity of scholarship and helps in creating unbiased pure new knowledge and also aids in preparing new research grounds.

6. Conclusion

Researchers are significant for higher education institution as well as for their libraries since research performance bears a powerful influence on academic institutions' prestige. So research performance must be supported and for this, academic libraries need to identify the new environment, require to build a new approach to support research community and need to strengthening and expanding traditional library services into new environment. Higher education is drastically changing in the age of technological development, rapid information diffusion. The needs of scholarly community is also changing quickly. So libraries should also be changed according to their needs and demands. They are doing so much like this. The area of research support services is such a new opportunity for libraries to work and be relevant in the time.

References:

1. Borgman, C.L., (2010). Research data: who will share what, with whom, when, and why? Fifth China-North American Library Conference, Beijing, 8-12 September. Retrieved from http://syd-ney.edu.au/research/data_policy/re-sources/ANDS_Borgman_2010_re-search_data.pdf
2. Cann, A., Dimitriou, K. and Hooley, T. (2011).Social Media: A guide for researchers. London, UK: Research information network .Retrieved from www.rin.ac.uk/system/files/attachments/social_media_guide_for_screen_0.pdf
3. Chadha, R.K. and Arora, J. (1989). Audio- visual Materials in Academic Libraries. In Umesh C. Rastogi (Ed.), Changing Dimensions in Academic Libraries (pp.30-44). Lucknow: Lucknow Christian College.
4. Hoffman, S. (2016).Preface. Dynamic research support: For academic libraries. (ix-xii) Chicago, USA: ALA Neal-Schuman

5. Hurston, Z.N. (1942). Dust tracks on a road: an autobiography. USA: Harper Perennial.
6. Institute of Germanic and Romance Studies, (2010). Postgraduate online research training. Universityof London Computer Centre. Retrieved from http://port.modernlanguages. sas.ac.uk/researcher
7. Jasper, K. (1965).The Idea of the University (2nd Ed.).London, Britain: Peter Owen Limited.
8. Jessy, A and Rao, M. (2016) Modern libraries and scholarly support services: redefining role in digital age.In: 2nd National Conference on Management of Modern Libraries (NACML) – 2016, 19-20 Feb 2016, Manipal University, Manipal. URI : http://eprints.manipal.edu/id/eprint/148502
9. Namuleme, R. K. & Kanzlra, A.N. (2015). Research support services in academic libraries in Uganda: challenges and opportunities. In R. Raju, A. Adam, G .Johnson, C. Miller. & J. Pietersen (Eds.), The quest for a deeper meaning of research support. Cape Town, South Africa: University of Cape Town Libraries. ISBN 978-0-7992-2526-6. doi: http://dx.doi.org/10.15641/0-7992-2526-6
10. Parker, R., (2012). What the library did next: strengthening our visibility in research support. In em powering efutures VALA 2012 16th Biennial Conference .Melbourne, Australia:**VALA - Libraries, Technology and the Future Inc.** Retrieved from https://www.vala.org.au/direct-download/vala2012-proceedings/435-vala2012-session-1-parker-paper/file
11. Pasipamire, N. (2015). Research support by subject librarians in selected state university libraries in Zimbabwe: accommodating new trends. National University of Science and Technology, Bulawayo. Retrieved from : http://ir.nust.ac.zw/xmlui/handle/123456789/622
12. Proud man, V. (n.d.). 7 library research support service trends from 2014. Retrieved from: http://proud2know.eu/7researchsupporttrends2014_blog17/
13. Rao, S.S. (1993).University libraries in India: Their role in research. In D.

Isaac, A.A.N. Raju, L.S. Ramaiah (Eds.), Academic libraries: Role in the national development (35-46). Madras, India: T R Publications.

14. Research information network and Consortium of research libraries. (2007). Researchers' use of academic libraries and their services: A report commissioned by the research information network and the consortium of research libraries. Retrieved from. http://www.rin.ac.uk/system/files/attachments/Researchers-libraries-services-report.pdf
15. Schoombee, L. (2013). Research support services at an academic library. Presented at the University of the Free State 27 November. Retrieved from :http://www.slideshare.net/luciaschoombee/research-support-services-at-anacademic- library-presented-at-ufs-27112013
16. Surkis, A. and Read, K. (2015). Research data management. J Med Lib Association, 103 (3), 154-156. Doi: : http://dx.doi.org/10.3163/1536-5050.103.3.011
17. Veenapani, S.C. (2012). Growth and development of libraries in Manipur: a critical study (Doctoral dissertation). Retrieved from Sodhganga (http://hdl.handle.net/10603/9309)

Authors Profile



Ms. **Vibha Gupta** is a Ph.D. Scholar (Junior Research Fellow) in the department of Library and Information Science, University of Lucknow, Lucknow. She is pursuing her Ph.D.under the guidance of Dr. Babita Jaiswal from the year 2016 on the research area of research support services in academic libraries. She did her MLISc. (2015) from the department of library and information Science, BBAU, Lucknow. She has qualified NET JRF exam in 2015. Sheworked as Project Assistant at Knowledge Resource Centre Division, CSIR-Central Drug Research Institute, Lucknow in 2015. She has 09 publications including 03 research papers.

Full Address for correspondence: L- 83, Sec. G, LDA Colony, Kanpur Road, Lucknow, 226012, UP.

Email: guptavibha1994@gmail.com, Mob. No.: 9580787388



Dr. **Babita Jaiswal** is working as Associate Professor and Head in the department of Library and Information Science, University of Lucknow, Lucknow. She did her MLISc (1995) and Phd. (2000) from the department of Library and Information Science, University of Lucknow, Lucknow. She is also a member of IASLIC, ILA, IATLIS library associations. Dr. Jaiswal has more than 47 publication including 02 books. Under her guidance 03 Students have awarded Ph.D.





Institutional Repositories

Rana Ritu and Singh Shashank Vardhan

Abstract: Institutional Repositories are defined as centralized information systems which organize, archive and make accessible, all research output of an organization. This article briefly outlines the need for repositories and softwares such as D SPACE, GREEN-STONE DIGITAL LIBRARY, E-PRINTS

1. Introduction

The services and collection of libraries and information centre are becoming global due to the application of ICT. Now the institutions are starting to build their own repository to serve their community locally and globally. Further the open access and open archives movement and the changes in scholarly communication to remove barriers to access have begun driving the establishment of institutional repositories.

2. Definition

An Institutional repository is an organization based set of services which the organization offers to the members of its community for the collection, management and dissemination of intellectual outputs created by the institution and its community members. It is most essentially an organizational commitment of these intellectual products, including long-term preservation as well as management and dissemination to the users of the particular institution through intranet and globally through internet.

3. Why we need institutional repository

For the Individual

- Increase the dissemination and impact of their research
- Provide a central archive of their work

4. For the Institution

- Reinforced by the literature which highlighted the benefits to the institutions
- Encourage members to deposit their research in order to gain prestige

5. For Society

- Provide access to the world's research
- Ensures long-term preservation of institute's academic output

6. Objectives of institutional repository

- Maximize the visibility, use and impact of the scientific and academic research/output in the international community.
- Produce or provide storage for the electronic publications of the institution.
- Facilitate access to the academic and scientific information.
- Provide access to intellectual products over the web.
- Create feedback on research.

7. Contents of institutional repositories

- IR might include electronic versions of documents such a research papers, project reports, patents, theses and dissertations.
- IR may also include many of the digital assets generated by an institution such as working papers, lectures, conference proceedings, learning objects, administrative documents, course notes etc.
- The learning objects may include among others study material , assignments, question paper, audio-video materials and multimedia presentations such as interactive e-learning modules.
- It offers seamless excess to document that reflect past and present research interest of the institution as well as its future research goals.

8. Creating an institutional repository

1. Requirement analysis

As with all pieces of software, it is important first to analyse the requirements:

- Policies must be established: from whom will you collect material?
- What type of document – just research output, or other documents?
- Published items only, or grey literature as well?
- Will you require full text or will you accept metadata only in some instances, as when an author does not have permission for reuse of an article from the publisher?

9. Acquiring and loading content

- Many repositories will begin small, perhaps running a pilot with a few departments, or picking "low hanging fruit" from departmental web pages.

10. Choice of software

- Part of the impetus behind the IR movement is the existence of open source software that is relatively easy to install, maintain and customize. For example D Space, GSDL, E-Prints etc.. There are, however, some pieces of IR software that are not open source, for example, Digital Commons, which has also been used by a number of academic institutions.

11. Metadata and search

- For any database, whether of an institution or a publisher, to be of any use, its items must be easily retrievable. To ensure this, each item entered must have the relevant metadata – for example, title, date created, author/creator, type (article, pre-print, podcast, thesis, etc.), keywords, language, etc.
- In order to maximize search and retrieval, metadata conventions need to be compliant with the Open Access Initiative Protocol for Metadata Harvesting.

12. Copyright

- One of the difficulties for those maintaining institutional repositories is that many of the most valuable items, i.e. articles published in peer review journals, are owned not by the academic, but by the publisher. Authors are usually required to sign a copyright transfer agreement, which defines and restricts their rights to re-use their work.

13. Benefits of IR

- Collect, preserve and maximize the visibility of all the scientific, academic, institutional and corporate production of the institutions.
- Facilitate the access to the content of the repository from the different existing learning platforms.
- Provide a storage and mutual exchange platform for the information produced in the institution in all knowledge areas.
- Create and share Knowledge and Build personal and collective learning models.
- Maximise the impact of the scientific production of the institutions on society.
- Increase the public service value of the institution.
- Facilitate the transference of knowledge into the productive area.
- Promote the creation of electronic publications.

14. Institutional repository softwares

1. D SPACE

D Space is a platform that allows you to capture items in any format–in text, video, audio, and data. It distributes it over the web. It indexes your work, so users can search and retrieve your items. It preserves your digital work over the long term. D Space is typically used as an institutional repository.

It has three main roles:

- Facilitate the capture and ingest of materials, including metadata about the

materials

- Facilitate easy access to the materials, both by listing and searching
- Facilitate the long term preservation of the materials

15. Software releases:

Version 1.0 –8thNovember 2002

Version 1.1 –8thMay 2003

Version 1.2 –13thAugust 2004

Version 1.3 –3rdAugust 2005

Version 1.4 –26thJuly 2006

Version 1.5 –25thMarch 2008

Version 1.6 – 2nd March 2010

Version 1.7 – 17th December 2010

Version 1.8 – 4th November 2011

Version 3 – 30th November 2012

Version 4 – 16th December 2013

Version 5 – 16th January 2015

Version 5.5 – 21st March 2016

16. Objectives of D SPACE

- Develop and manage a strong network of service providers and training resources
- Promote DSpace via a monthly newsletter, website, marketing materials etc
- Build and support an active community of developers and users
- Ensure DSpace integrates using open standards
- Manage and co-ordinate the DSpace platform roadmap and software re-leases

17. Technology

- DSpace is a set of cooperating Java web applications and utility programs that maintain an asset store and an associated metadata store.
- The web applications provide interfaces for administration, ingest, search,and access.
- The asset store is maintained on a file system or similar storage system.
- DSpace currently support primary web interfaces: JSPUI which uses JSP and the Java Servlet API and XMLUI based on Apache Cocoon, using XML and XSLT.

18. Benefits of D SPACE

- Getting your research results out quickly, to a worldwide audience
- Reaching a worldwide audience through exposure to search engines such as Google
- Storing reusable teaching materials that you can use with course management systems
- Archiving and distributing material you would currently put on your personal website
- Storing examples of students' projects (with the students' permission)
- Showcasing students' theses (again with permission)
- Keeping track of your own publications/bibliography
- Having a persistent network identifier for your work, that never changes or breaks
- No more page charges for images. You can point to your images' persistent identifiers in your published articles.

19. Features of D SPACE

Some most important features of DSpace are as follows.

- Free open source software
- Completely customizable to fit user needs

- Manage and preserve all format of digital content (PDF, Word, JPEG, MPEG, TIFF files)
- Customizable search
- Unicode Facility
- DSpace software runs on Linux, Solaris, Unix, Ubuntu and Windows. Linux is by far the most common OS for DSpace.

20. Greenstone digital library

- Greenstone Digital Library (GSDL) is a suite of software developed by the New Zealand Digital Library Project at the University of Waikato in 1995.
- The distribution and promotion partners for Greenstone are: UNESCO; Human Info NGO, Belgium; NCSI, Bangalore; UCT, Cape Town; Dakar, Senegal; Almaty, Kazakhstan.
- The Greenstone website was launched in 1998, and later in 2000 Greenstone collaborated with UNESCO
- Greenstone has released several versions of the software and a Java-based Greenstone librarian Interface (GLI) was developed in 2003.
- Information about User groups and mailing lists are posted on the website. It is distributed on Source Forge, and the present Greenstone version is 3.07.

21. User interface

- Greenstone software is available for all operating systems: Windows, Unix/Linux and Mac OS-X. Windows installation is the default, and the configuration steps and time taken is much less compared to DSpace.
- Greenstone can be installed on desktops, laptops and servers, and be made available online via standard web server software (e.g. Apache).
- Additional software's like ImageMagick, Ghostscript and Tomcat web server are installed along with the core installation. Not only is it easy to install, the software is also easy to maintain.
- Greenstone is available in 40 international languages. Greenstone uses

Unicode thus enabling automatic language recognition of multilingual collections. Hence, any language supported by the browser can be processed, converted dynamically and displayed in a consistent manner

- Greenstone provides three modes for acquisitions: command line, web interface and GLI
- In Greenstone version 3, there are three modes – Library Assistant, Librarian and Expert. The Librarian interface is available in English, French, Spanish and Russian.
- Greenstone accepts almost all kinds of document formats. The documents in the collections can be technical
- Documents, newspaper articles, educational journals, oral history, visual art, videos, MIDI pop music collections, ethnic folksongs, etc.
- Plugins are available for all kinds of documents such as PDF, PostScript, Word, RTF, HTML, Plain text, Latex, ZIP archives, Excel, PPT, email (various formats), source code, multimedia (including GIF, JIF, JPEG,TIFF), MP3 audio, Ogg Vorbis audio and a generic plugin that can be configured for other audio formats such as MPEG, MIDI, etc.
- Suitable plugins can be installed if the document format is not included. Plugins can also be downloaded and added from the Internet.
- The GLI has a user-friendly graphical interface developed using Java.
- There is a provision to upload documents via web, MediaWiki, OAI, Z39.50 and SRU. The documents can also be uploaded from the local system folders into the collection using drag and drop method in the Gather section of the Librarian Interface.
- The configuration details of the collection structure are stored in the file "collection.cfg".
- Greenstone is hierarchical.

22. Customization

- In Greenstone, the documents which have similar characteristics are grouped into collections and are uploaded using one uniform interface.

- The user has the provision to create a user-defined collection structure or use the existing collection structure.
- Most of the interfaces are defined by Extensible Style sheet Language Transformation (XSLT) files which are stored in the interfaces/interface-name transform. The changes made to these files will reflect immediately.
- The modified files can be copied into the transform directory of sites and collections folder so that this interface file is used in preferences to the other interface XSLT files when using the collection.
- A completely new interface can also be designed by keeping the old one intact.

23. Search and browse capabilities

- The search and browse features can be designed using the elements available in the Collection Design panel of GLI: Document plugins, Create Search Indexes, Browsing Classifiers and the Cross collection search panel.
- Document plugins are used to convert the document into the Greenstone archive format. The Search indexes determine whether to confine the search to paragraph, chapter or the entire text of the document.

24. EPrints

The EPrints software package was originally designed for creating and managing open access institutional repositories of research papers and publications. It is widely implemented and is now used to store and manage a much broader range of content types and for different purposes.

- The default configuration is oriented towards research papers; using the system to manage different types of digital materials – such as audio archives and research data – requires changes to the configuration. EPrints is written in Perl, requires installation of the Apache web server and a number of Perl modules, and uses the MySQL database as a back-end.
- As with EPrints, all of this additional software is open source and freely available. It was developed under GNU/Linux and is intended to run on any UNIX-like system.

- Online support and advice is available from the EPrints wiki and mailing lists, although a charge is levied should implementers choose to join the Eprints community or solicit personal support services from the EPrints team.
- EPrints is freely distributable and, in keeping with the terms of the GPL, the source code is open and freely modifiable by programmers on the condition that modifications are also free and open.

25. Functionality

As development of EPrints is ongoing, only initial and base functionality is discussed here.

Ingest: The EPrints development team are proponents of open access and 'self-archiving', a deposit philosophy whereby authors deposit their own works and metadata in a preferably OAI-PMH (Open Archives Initiative – Protocol for Metadata Harvesting) compliant EPrints repository. The deposit process reflects this aim, as it is very straightforward to encourage authors to deposit their works (although in practice, intermediaries are often the main depositors). Depositors must register to upload document files and metadata to the EPrints repository via the web-interface, although some institutions offer a 'proxy self-archiving service' and allow depositors to e-mail relevant documentation to repository staff who upload the item and metadata on the depositors' behalf. EPrints has a bulk data import facility that can be used to import XML files.

The default deposit configuration requires depositors to enter a minimum set of metadata. This set does not conform to any particular standard, although in practice, an EPrints implementation can be configured to request and store any metadata according to institutional requirements and the type of objects stored. A Dublin Core application profile for deposited ePrint items is under development as part of the JISC Digital Repositories Programme.

New objects: (i.e. content file(s) + metadata) are temporarily stored in the registered user's 'workspace' until all required metadata has been entered and the object deposited: this enables depositors to put an entry 'on-hold' until all required metadata has been collected. A built-in buffer enables items to be withheld for review or approval by repository administrators before final entry into the system.This can be disabled.

Workflow: In keeping with the straightforward ingest procedures, workflow

functionality is minimal. Editors and administrators can receive e-mail notification when new items are deposited and move content in and out of the submission buffer if the buffer is active.

Storage: MySQL must be installed as the back-end Relational Database Management System (RDMS) for an EPrints service. The amount of disc space required depends on the repository scale, but approximately 2MB should be allowed for each ePrint item deposited. Content can be stored in any format designed acceptable by the repository administrator during configuration. Multiple representations of the same content are acceptable

Preservation: Functionality for long-term preservation is not currently an explicit feature of the EPrints architecture. Preservation in institutional repository software, particularly in open access, is a source of some contention, with conflicting opinions on whether it is the role of an institutional repository to undertake long-term preservation of journal and research articles that have been published elsewhere. Despite this, the EPrints team is participating in the preserve project to investigate and develop infrastructural digital preservation services for digital repositories.

Access: A web accessible interface enables users to search the system. Full text searching and searching on metadata fields are both possible. The software does not assume open access and can be configured to allow limited access to certain deposits or sets of deposits. The generic version of EPrints is fully interoperable with all other OAI-PMH compliant Open Archives, which means that papers in all OAI-PMH compliant Archives can be harvested using the OAI-PMH protocol.

26. Conclusion

INSTITUTIONAL REPOSITORIES offers a strategic response both to the opportunities of the digital networked environment and the systematic problems in the today's scholarly communication , IRs is a fundamental tool for accelerating the progress of science by providing global access to electronic versions of reports, articles and other forms of literature. The guiding principle behind IRs is the concept of open-access (OA), the online available of both peer-reviewed and un refereed literature without fee or copyright restriction.

References

1. Kelly, J.C. (2007), "Creating an institutional repository at a challenged institution", *OCLC Systems & Services*, Vol. 23 No. 2, pp. 142-147.

2. Liu, Shu and Yongli Zhou. "Developing An Institutional Repository Using Digitool". *The Electronic Library* 29.5 (2011): 589-608.
3. Foster, Nancy Fried and Susan Gibbons. "Understanding Faculty To Improve Content Recruitment For Institutional Repositories". *D-Lib Magazine* 11.01 (2005): n. page. Web.
4. "About Dspace | Dspace". *Dspace.org*. N.p., 2016. Web. 18 Sept. 2016.
5. "Welcome :: Greenstone Digital Library Software". *Greenstone.org*. N.p., 2016. ..Web. 20 Sept. 2016.
6. Jayakanth, F.,Minj,F.,Silva, U. and Jagirdir, S. (2008), "ePrints@IISC: India's first and fastest growing institutionalrepository", *OCLC Systems and Services*, Vol. 24 No. 1, pp. 59-70.
7. Singh, Shashank vardhan and et al. "Institutional Repositories".*Central government library association* (2017):146-162
8. Cherukodan, Surendran And Humayoon Kabir S. Libraries". *Program* 50.2 (2016): 175-183.Web
9. Witten, Ian H and David Bainbridge."Creating.Greenstone". *Library Hi Tech* 23.4 (2005): 541-560. Web.
10. "Eprints Software". *Eprints.org*. N.p., 2016. Web. 19 Sept. 2016.

Authors Profile



Ms. Ritu Rana is working as SPA-Aryabhatta college (DU). She holds M.L.I.Sc. and BLISc degrees from University of Delhi. She has participated in many national conferences.

E-mail: rituraana1@gmail.com



Mr. Shashank Vardhan Singh is presently working as an Apprentice at National Social Science Documentation Centre (NASSDOC). He holds M.L.I.Sc. and BLISc degrees from University of Delhi. He has participated in many national conferences.

E-mail: shashankvardhan100@gmail.com

Learning and Knowledge Building through Internet: - A study of Medical Students towards how they use internet for learning

Dr. Rajkumar Bhakar

Chief Librarian, Central library
Ananta Institute of Medical Sciences and Research Center
Rajsamand
Mail – drrajkumarjjn@gmail.com
and

Dr. Chanchal Shrivastav

Associate Professor, Department of Physiology
Ananta Institute of Medical Sciences and Research Center
Rajsamand
Mail-ishita.ishi@yahoo.in

Abstract: -The present era is internet era and now the life could not be imagined without internet. Simultaneously library users are also much more depending on the internet for information retrieval/access. The present study is focused upon medical student's attitude towards learning by use of internet. This study includes a structured questionnaires based survey on 140 MBBS I year students of Ananta Institute of Medical Sciences & Research Center, Rajsamand. Out of which 130 dully filled questionnaires were received and the results reveals that among different search engines, google was used by most of the respondents and information retrieval through internet proves beneficial in their academic improvement. This study also reveals that 46.15 % of respondents faced difficulty in finding relevant information so various educational orientation programs should be organized to create awareness and for the effective use of internet and e-resources.

Keywords: - Internet, ICT, Knowledge Build, Medical Students, AIMS&RC, Udaipur

1. Introduction:

21st century would be acclaimed as the era of information techno for India and entire world. Internet and information technology has remarkable impact on all sectors of the society. Library & information center are not an exception. The users of libraries & information center havebeen depending more and more on the accessing of Internet. Internet is going to mandatory and needful tools in our daily life. Today internet has changed our life style and our types of access of information. It has profoundly changes library operators, information and communication technics in libraries.

Internet also turns into a significant part of our life. We can say that in present situation, there is no life without internet. Today enormous growth of the internet has modified the way of educational systems,which is a significant manner of accessing and dissemination information quickly (Omotayoa, 2006). By the internet user can access required information by just one click of a mouse. It is clear that use of internet has a vast impact on the learner's academic carrier. So the importance of internet in the academic system is very high. So the present research study is an effort to investigate awareness towards use of internet among medical students.

2. About Ananta institute of Medical Science & Research Center:

The Ananta Institute of Medical Sciences & Research Center has established by Ananta Charitable Educational Society with state of the art 350beddedhospital.

The AIMS&RC was setup on July, 2016. One of the beautiful campus situated on the Udaipur-Jaipur National Highway no 8, Kaliwas Village, 15 Km from Udaipur city (The Lake city). The campus is spread in31 acres. The medical campus provides all the essential facilities and infrastructures for the pursuit of excellence in Medical Education.

3. Objective of the study: - Following are the objective of the study:

- To know the frequency of internet use among medical students.
- To find out the awareness of internet usage.
- To identify preference of place & time for accessing the internet.
- To examine the purpose of using internet.
- To know the factors affecting internet usage on the students.
- To identifies the need of internet for medical students.

4. Methodology of the study:

The study is an attempt to know the learning and knowledge building through internet among medical students. For this purpose a survey method was conducted by using a well-structured questionnaire. 140 questionnaires were issued to MBBS first year students of AIMS&RC, out of which, 132 filled questionnaireswere collectedback. 2 questionnaires were rejected due to insufficient information. Total of 130 questionnaireswere taken for the purpose of the study and collected data were classified, analyzed and graphed by using excel software.

5. Scope and limitation of the study:

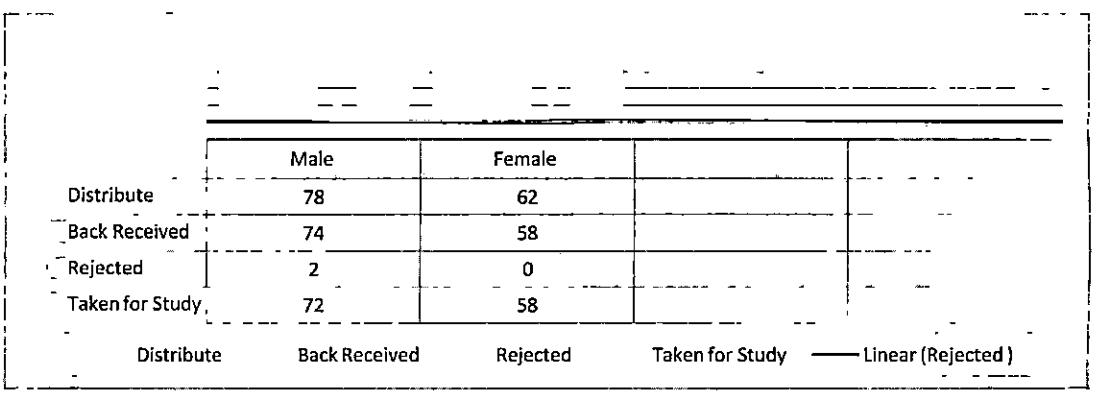
The above study is related to the use of internet, awareness and knowledge building through internet. So this study could be important to academic improvement of medical students thorough the e-learning services. While,the present study is limited to the Ananta Institute of Medical Sciences& Research Center and it is related only to MBBS 1st year students only. This study does not include BSc. Nursing, GNM students of AIMS&RC and the students of other medical colleges of Rajasthan.

6. Data Analysis and Interpretation:

The data of the study are describing as under...

Table No. 1 Distribution of Questionnaires

Sr. No.	Gender	Distribute	Back Received	Rejected	Taken for study	%
1.	Male	78	74	02	72	55.38%
2.	Female	62	58	0	58	44.62%
Total		140	132	02	130	100%



Graph – 1

Table & Graph no. 1 shown the distribution of questionnaires to respondents. Total 140 questionnaires were distributed and 132 collected back, out of which 130 questionnaires were taken for the study.

Table – 2: Place of Access of Internet

Sr. No.	Location	Frequency	Percent %
1	Departmental Computer	13	10.00
2	Library	88	67.69
3 Hostel		16	12.31
4	Cyber Café	3	2.31
5	Other	10	7.69
	Total	130	100.00

Graph - 2

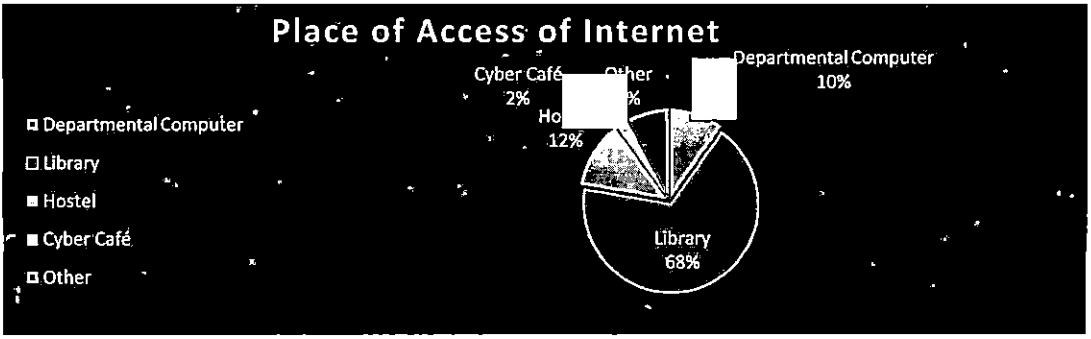


Table &Graph no. 2 revealed the place of access of internet out of 130 students, 88 (68%) respondents used internet in the library, 13 (10%) respondents accessed at departmental laboratory and 16 (12.30%) students accessed internet at hostel.

Table – 3 Awareness of Internet Use

Sr. No.	Awareness	Frequency	Percent %
1	Self-Learning	30	23.08
2	From Teachers/Library Staff	72	55.38
3	From Friends	16	12.31
4	Out Side Sources	12	9.23
	Total	130	100.00

Graph - 3

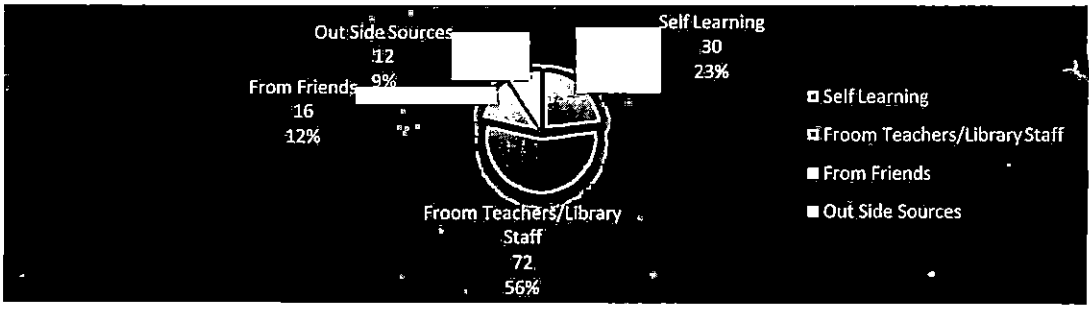


Table and Graph No. 3: - It was found from above table 3 that 42 (55.38 %) of the respondents reported that they learned how to use the internet from their teacher, staff, followed by 30 (23%) by self-learning, 16 (12.31%) from friends and 12 (9.23%) from outside resources.

Table - 4 Preference of Search Engines

Sr. No.	Name of Search Engine	Frequency	Percent %
1	Google	108	83.08
2	Netscape	6	4.62
3	Yahoo	4	3.08
4	AltaVista	10	7.69
5	Other	2	1.54
	Total	130	100.00

Graph No. – 4

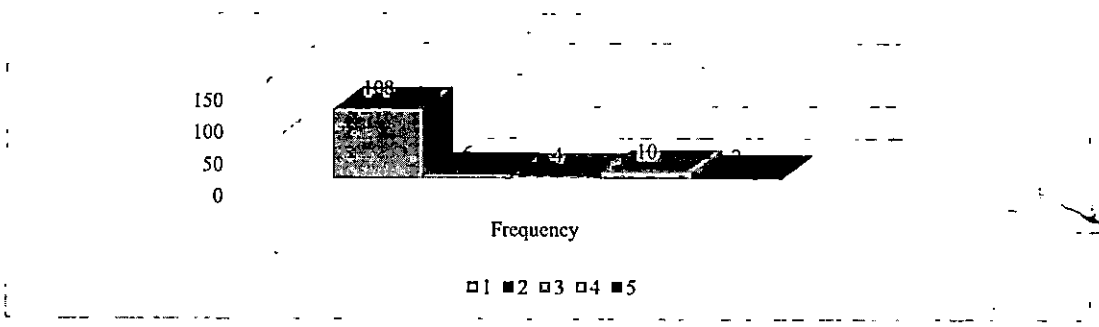


Table & Graph No – 4 shows the preference of the use of the search engines. Out of 130, 107 (83.07%) respondents used google search engine for retrieval of information followed by only 6 (4.62%) used Netscape and 10 (7.69%) AltaVista. It showed that the google search engine the most preferred search engine of the

respondents.

Table – 5 Frequency of Internet Use

Sr. No.	Use of Internet	Frequency	Percent %
1	Daily	72	55.38
2	Twice a Week	33	25.38
3	Weekly	17	13.08
4	Monthly	8	6.15
	Total	130	100.00

Graph – 5

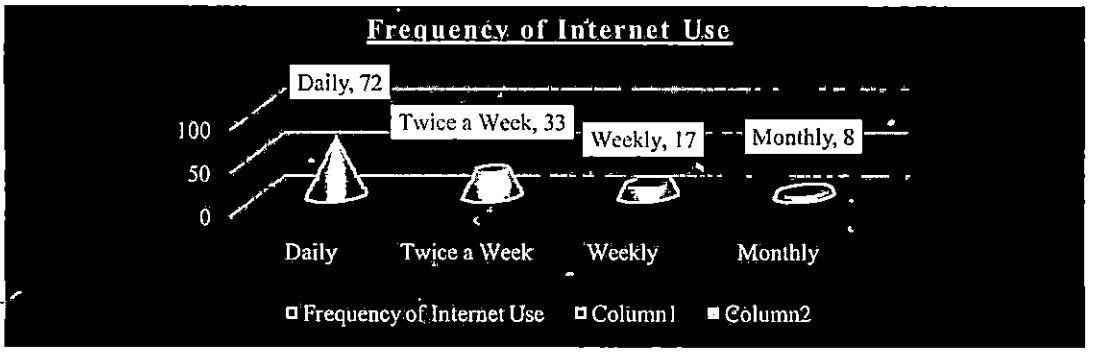


Table – 5 and Graph 5revealed the frequency of the internet use by the respondents. 72 (55.38%) respondents reported that they use internet daily, followed by 33 (25.38%) twice a week and 17(13.08%) weekly.

Table – 6 Purpose of Internet Use

Sr. No.	Purpose	Frequency	Percent %
1	Study Purpose	80	61.54 %
2	Assignments/ Class Notes	13	10.00 %
3	E-mail	18	13.85 %
4	Job Search	12	9.23 %
5	Entertainment	7	5.38 %
	Total	130	100.00

Graph - 6

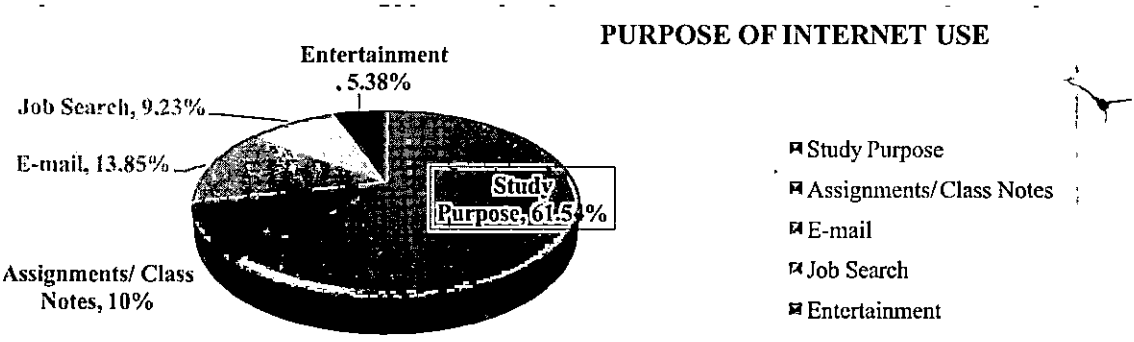
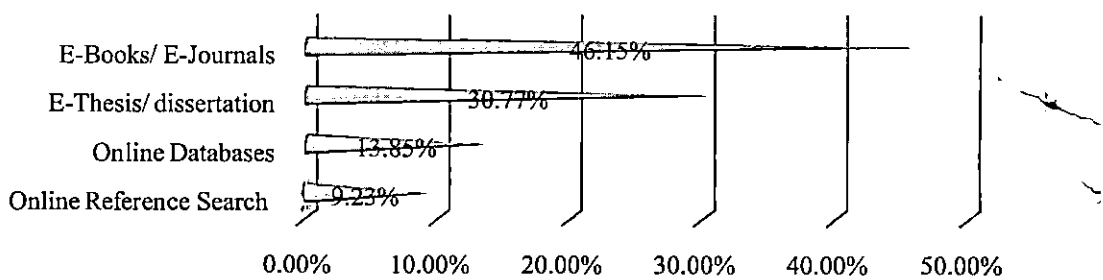


Table & Graph no. 6 described the purpose of internet use by the respondents. Majority of the respondents 80 (61.53%) reported that they use internet for their study purposes while 18 (13.85%) for email and 13 (10%) for assignment and 6 (4.61%) for entertainment purpose.

Table – 7 Preferred Information Search by Internet

Sr. No.	Information	Frequency	Percent %
1	Online Reference Search	12	9.23
2	Online Databases	18	13.85
3	E-Thesis/ dissertation	40	30.77
4	E-Books/ E-Journals	60	46.15
	Total	130	100.00

Graph – 7



Table& Graph No. 7 revealed the preferred information search on the internet. Majority of 60 (46.15%) respondents accessed e-books and e-journals on internet, followed by 40 (30.77%) e-thesis and dissertation, while, 18 (13.84%), online database. It is shown that e-book and e-journals are very important in the improvement of study of Medical Students.

Table – 8 Benefits of Internet our conventional Documents

Sr. No.	Benefits	Frequency	Percent %
1	Easy to access	30	23.08 %
2	Less Expression	18	13.85 %
3	More Satisfaction	70	53.85 %
4	Time Saving	12	9.23 %
	Total	130	100.00 %

Graph – 8

Benefits of Internet our conventional Documents

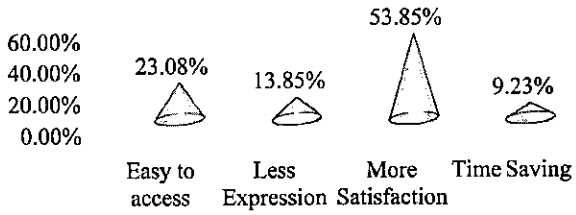


Table & Graph No. – 8 indicated that 70 (53.85%) of the respondents reported that information access by internet are more satisfactoryas compared to conventional documents.

Table – 9 Problems faced by the Respondents

Sr. No.	Problems	Frequency	Percent %
1	Lack of Knowledge of Advanced Searching	28	21.54
2	Speed is slow of Internet	14	10.77
3	Difficulty in finding relevant information	60	46.15
4	Over load of information on the internet	16	12.31
5	Satisfy information is not available	12	9.23
	Total	130	100.00

Graph - 9

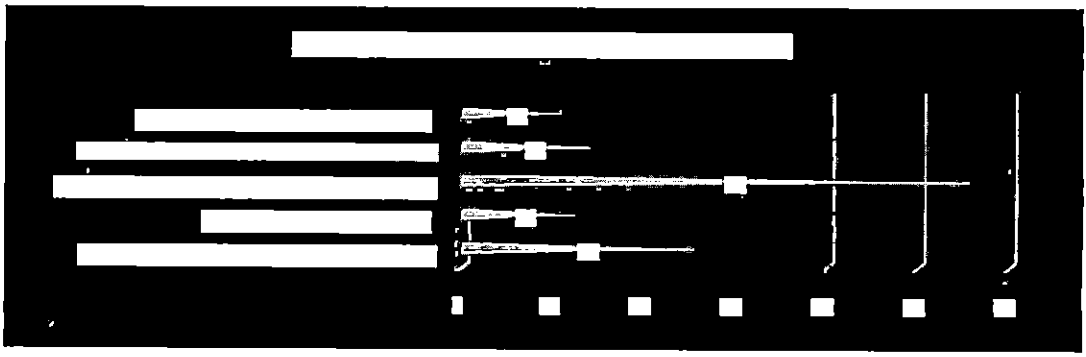
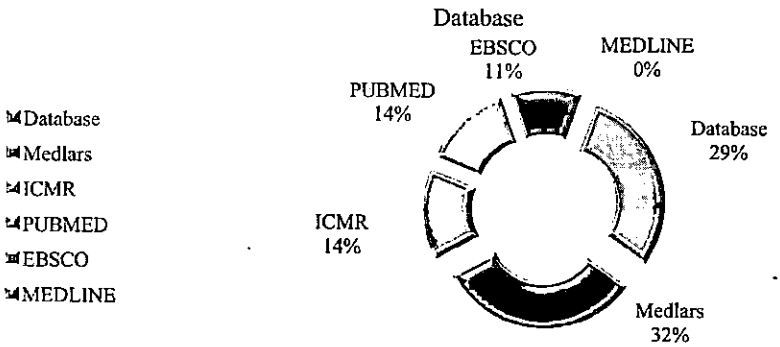


Table & Graph – 9 shows the problems faced by the respondents. Majority of the respondents 60 (46.15%) found difficulty in searching relevant information on the internets followed by 28 (21.53%) faced lack knowledge of advance searching, while 16 (12.30%) faced the over loaded are the information on the internet.

Table – 10 Do you know about following databases?

Sr. No.	Database	Frequency	Percent %
1	MEDLARS	38	29.23
2	ICMR	42	32.31
3	PUBMED	18	13.85
4	EBSCO	18	13.85
5	MEDLINE	14	10.77
	Total	130	100.00

Graph - 10

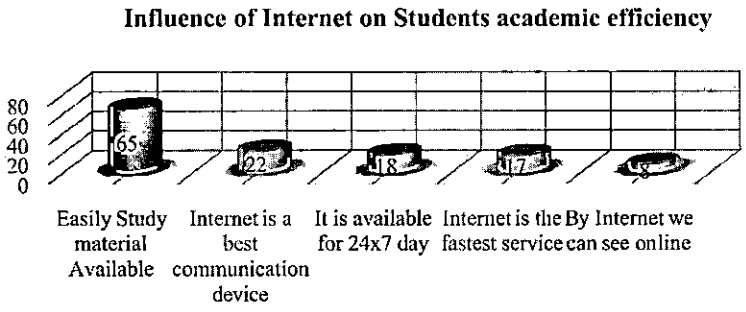


Table& Graph – 10 show about the knowledge of Medical database of the respondents. Majority of student 42 (32.31%) knew about ICMR database while, 38 (29.23%) about MEDLARS and 18-18 (13.85%) about PUBMED & EBSCO database.

Table – 11 Influence of Internet on Students academic efficiency

Sr. No.	Influence	Frequency	Percent %
1	Easily Study material Available	65	50.00
2	Internet is a best communication device	22	16.92
3	It is available for 24x7 day	18	13.85
4	Internet is the fastest service	17	13.08
5	By Internet we can see online	8	6.15
	Total	130	100.00

Graph - 11



Graph - 11

Table & Graph No. – 11 revealed the effect of internet on academic efficiency. Majority of 65 (50%) respondents believed that the use of internet provided study material easily, while 22 (16.92%) claimed that internet is a best communication device, 18 (13.85%) reported that internet services is available for 24 hours, 7 days.

The result of MBBS first year students/ respondents, of AIMS & RC also proves that beside teachers efforts, information and knowledge received by respondents through internet resources, improves their academic performance and out of top 10 students in merit list of Rajasthan University of Health Sciences, Jaipur a total of 6 ranks were occupied by MBBS 1st year students of Ananta Institute of Medical Sciences&Research Center, Rajsamand

7. Major Findings:

Major finding of the study are as following...

1. Out of 130 respondents 78 (55.38%) were male and 58 (44.26) were female.
2. About 88 (67.69) respondents used internet in the library of the college.
3. Out of 130, 72 (55.38%) of the respondents reported that they learned the use of Internet from their teachers of library staff.
4. About 83.07 % respondents used google search engine to access the information.
5. About 72 (55.38%) respondents used internet daily.
6. Out of 130, 80 (61.53%) respondents reported that they used internet for their study purpose.
7. Most of the respondents 46.15% accessed e-journals and e-books on the internet, while 30.76% e-thesis and e-dissertation.
8. As per 53.84% respondents, internet is more informative and satisfactory for retrieval of information.
9. 46.15% respondents faced the difficulty in finding relevant information.
10. 32.30% respondents were known to Indian Council of Medical research and 23.23% knew about MEDLARS database.
11. 50% respondent accepted that internet is very helpful in the improvement of their academic efficiency due to easy availability of study material.

8. Conclusions& Suggestions: -

In the medicine, new researches are going on day by day so medical students should have updated about this.At present internet is the vital power of education activities. So the staff/teachers encourage the medical students for the use of internet resources and create more awareness among medical students for e-resources like MEDLARS, ICMR database, PUBMED, EBSCO etc. However, AIMS&RC has facilitated an internet lab (with 40 PCs) for access of internet and user can access approximate one thousand nine hundred I Med C e-journals database for their academic improvement. It is also recommended that the library professionals have to educate the students about electronic environment and students should also approach to library staff for their needs and required information. They can ask to chief librarian for any information and documents which are not available at AIMS&RC, it can made available by inter library loan

through DELNET from worldwide connected library.

References:

1. Veena, G, Pushpalatha, K and Mallaial, T. Y. (2016) Internet as tools for library and knowledge building. A study of student attitude towards the use and awareness of the Internet for library in Ranusha, B. (edi) sustaining the Excellence. Transforming libraries through technology, Innovation and value added series in google era. 6th ICA conference providing. ICA and Delhi (2016) pp. 326-330.
2. Ansari, MA (2008) Awareness and use of OPAC in fonedelhi libraries. Electronic Library, 26 (i), pp-111-129.
3. Larmar, A (2015), use patterns of OPAC among the faculty members in great latus Institute of manapent at Chennai – A case study, Research spects, 1 (3) Aug-Dec. pp 36-45.
4. Al–hariri, M. T. & Al-Haltami, AA (2015)- utilization of internet by health college students at the university of Dammam, journal of Tasbah University medical Science (10 (i) 66-73.
5. http;//www.anantamedicity.com
6. Limaye, R&Fotnengel, G (2015) use of internet among undergraduate students from Mumbai, India, IJECT, 6 (2) 26-28).
7. Kumar, R &kaur, A (2005) internet. And its use in two engineering college of Punjab, India. A case study, technology. 2 (4).
8. Ansari, MehtabAlams (2003) Digital Libraries need technology and benefit, ICA building Val-38 no. 3 pp 22-26.
9. Bhakar, Rajkumar&Verma, Bhoop Singh (2016),Awareness and management of e-resource among PG students and research Scholars of the University of Rajasthan: A case study. in ILA Proceeding, ILA, New Delhi (2016) pp 276-282)

Marketing of Library and Information Services: Some Issues And Challenges

Ompal Singh

Senior Librarian Government Pg College For Women, Karnal
E-Mail: ops110161@gmail.com

MS Shelly

Student, B.lib. & Inf. Science, Kurukshetra University, Kurukshetra

Abstract: Library is the heart of an institution, a non-profit organization and the main aim of the library is to provide maximum service to its customer. With the evolution of Internet, and the shift from manual to digital operations, new forms of information, new source of information and new ways of providing information have been introduced. Marketing of library and information services is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value others. The use of Marketing Mix and other marketing strategies such as exhibition, segmentation and use of Internet were seen as means which could be used to market library and information services to different users. The challenges of budget cuts, increased user base, the rapid growth of reading material, rising prices of such materials, networking demands, competition by database vendors, and complexity in information requirements are forcing the professionals to adopt marketing to improve the management of library and information centers. Marketing is an integral part of the library services, because it has to do with basic principles of librarianship i.e. to develop goods. In this context the libraries are playing a vital role to market their information services for the benefit for their customers to use the latest technologies to expect the trends. Marketing helps the library staff to upgrade their innovative knowledge both within their organizations and as a profession within the society and also it is the need of the hour today to adopt the marketing concept. This paper highlights on the concept of marketing, characteristics of service marketing, marketing approach, the marketing mix, five laws of library science and marketing of library and information services and challenges before the marketing of library and information services.

Keywords: Concept, Characteristics, Marketing approach, Marketing Mix, Challenges.

1. INTRODUCTION

Today we are living in the Age of Information Age or the Scientific Age and in this way the 21st century is Hi-Tech Age. It is essential for the Library and Information Science Professionals (LISPs) to live in this Scientific Age they should equip themselves with in these latest techniques. As we need food to live and survive information is also required to live intelligently and competitively. With the

emergence of Information and Communication Technology (ICT), decreasing of library budget, increasing user needs or demands, CD-ROM, Internet and On-line services, complexity of information requirements, emphasis on accountability, competition from the private vendors and rapid growth of information and reading materials are forcing the library professionals to adopt marketing techniques to optimize the use of library resources. Marketing has been identified as one of the areas of competency that is important for the professionals in library and information science. Library and information services are now being recognized as commodities that can be sold, exchanged, lent, and transmitted.

Narayana, G.J. (1991) says that, "Survival of a library depends among other things on its image in the minds of the users and the fund allocators. This image should be the outcome of the quality and effectiveness of the services, the ability to anticipate the desires and requirements of actual and potential users and their fulfillment. Marketing is the instrument through which these library objectives can be fulfilled."

2. CONCEPT OF MARKETING IN LIBRARY SERVICE

Marketing Guru, Philip Kotler defined the concept of marketing, "as social and managerial process by which individuals and groups obtain what they: need and want through creating, offering and exchanging product of value and others."

The concept of marketing rests on ***FOUR*** main pillars that is: (1) Target Market, (2) Customer Needs, (3) Coordinated Marketing, and (4) Profitability.

The concept of ***"Marketing Mix"*** emerged and became the most popular concept in Library and Information Science (LIS) marketing. The marketing mix is commonly referred to the ***FOUR*** Ps of marketing i.e. --Product; Price; Place; and Promotion. The new ***FOUR Ps*** are - People; Process; Physical Evidence; and Productivity & Quality.

According to ***Sueli Ferreira,*** "The ***FOUR Ps*** can be an important tool to help librarians to understand information agencies as a 'business', librarians need to overcome the concept and go out of the four walls of the information agencies to guarantee the future of these organization." Libraries serve and will serve far beyond their walls. Marketing helps the library staff to upgrade their innovative knowledge both within their organizations and as a profession within the society and it is the need of the hour to adopt the marketing concept.

3. DEFINITIONS OF MARKETING

According to Marketing Guru ***Philip Kotler (1996),*** "Marketing is the analysis, planning, implementation and control of carefully formulated programs designed to bring about voluntary exchanges of values with target market for the purpose of achieving organizational objectives. It relies heavily on designing the organizations' offering in terms of the target markets' needs and desires and on using effective pricing, communication and distribution to inform motivate, and services the markets." Further he states, "Satisfying needs and wants through an exchange process, within this exchange process customer will only exchange what they value if they feel that their needs are being fully satisfied." Needs are the basic humans requirements such as air food, water, clothing, and shelter. Humans also have strong needs for recreation, education, and entertainments.

American Marketing Association (AMA) defines marketing as, "Marketing is an organizational function and a set of process for creating, communicating and delivering value to the customers and managing customer relationships in ways that benefit the organization and its stakeholders."

Smith, Duncan writes, "Marketing is a stance and an attitude that focuses on meeting the needs of users. Marketing is a means of ensuring that libraries, librarians, and librarianship are integrated into both today's and tomorrow's emerging global culture."

4. CHARACTERISTICS OF SERVICE MARKETING

Christopher Lovelock and Jochen Wirtz (2010) identified some characteristics of service marketing that can be applied to libraries:

- **No Customer Ownership:** In a library setting, customers derive value from service without obtaining permanent ownership of a tangible product. Patrons check out materials, obtain reference services, or participate in book clubs, however they don't actually purchase a product.
- **Intangible Products:** Although library customers read books, use databases, and check out games, the service performance is intangible. The benefit comes from the knowledge or experience gained from the activity.
- **Customer Involvement:** Many library services involve the customer as an active participant. For example, reference interviews are an important el-

ement of reference services. A positive experience with the staff member, the comfort and convenience of the facility, or the case of the use of the website may determine whether the patron returns.

- **People as Part of the Product:** In high-contact services, customers come in contact with staff member as well as other patrons. While a staff member may coordinate a book club, the core activities may be organizes by volunteers and group members. As such, the customers become part of the service. Although a service may be face-to-face, increasingly libraries provide virtual services such as virtual reference services, online homework help, and distance learning workshops.
- **Variability in Inputs and Outputs:** Because services may involve a variety of staff, volunteers, as well as other patrons, it's difficult to control the quality of services. Standardizing procedures can increase the likelihood of a consistent, high-quality experience.
- **Difficulty of Customer Evaluation:** Experiences can be difficult to evaluate. By matching needs to specific services, features are easier to examine.
- **Different Distribution Channels:** Libraries have many ways to disseminate information. Increasingly, online communication and interaction are important services.

5. MARKETING APPROACH

There are a number of analyses and tools that help an organization use a marketing approach. These are:

- **Market Analysis:** The most obvious market is the end-users of the library services- library patrons; the parent institutions of libraries/ information centers; government agencies that provide funds and other institutions that have i9nformation needs but no libraries. Both funding and user markets should be identified as the market analysis.
- **User Analysis:** On the market has been identified, the marketer must identifying the users within that market. User may the library director; the head of the department; the board of directors; professors; the reference

librarian; or a student.

- **Organizational Analysis:** Consideration in organizational analysis would include resources available to the organization, restriction if any, attitude of the authorities, special expertise of staff, structure of the organization, success and failure if any. Assessing the strengths of the organization can help turn opportunities into success..
- **Competitive Analysis:** Competitor includes other library/ information organizations, library associations, for profit vendors, and library schools. A library budgets minimize the competition for limited funds has become extreme, placing information organizations in a highly competitive environment.
- **Marketing Mix Analysis:** While marketing is an approach to long-term planning, it can help make short term plans for the delivery of particular services to particular markets. A short term tool that helps with planning is the marketing mix.

6. MARKETING MIX: HOW ARE THE THESE MARKETING MIX APPLIED IN A LIBRARY

Developed the ***FOUR Ps- Product; Price; Place; and Promotion*** by ***Jerome McCarthy*** in 1960, in order to serve a market more effectively, the manager/ librarian must identify the relationship of each of the elements with others so as to find ways to best satisfy the market. The marketing mix of any organization consists of ***FOUR TO EIGHT*** main elements:

- **Product Service:** Librarians must focus on the information resources as well as delivering quality services associated with these materials. Defining the characteristics (quality, design, reputation, credibility, authority) of library product or service to meet the needs of the users. CAS/SDI, web-based services are the product of libraries and are accessible through the Internet/OPAC.
- **Price/The Users Cost:** Library services are offered free of cost to the patrons. Without budgetary provision, none library cannot purchase the

reading materials. None library cannot self-sufficient. However, some costs may be associated with classes and programs offered by outside consultants. In addition to financial costs, librarians try to minimize the burden of intangible costs such as time and physical efforts. Identifying the total cost of the user is a part of price element.

- **Place:** Looking at the location (i.e. library); Distribution channel (where a service is delivered); Geographical Coverage, telecommunication, travels, etc. Resources must be readily available to the customers. Decisions must be made about the place and time of services as well as the methods and channels used. It is usually associated with 'when', 'where', and 'how' a particular service/product is made available to the customers.
- **Promotion:** Promotion increases public awareness, educate users. Promotion includes advertising, public relation, personal contact, on-line activities, internal bulletins, posters, newsletters, e-mail, library websites can be used for these activities. Promotion is the way of reaching out to customers. Promotion moves the products towards the customers, and stimulates demand and increases sales.
- **People:** This refers to the staff the library personnel. It is very important element in the marketing mix because only competent and skilled personnel can help drive the vision of the organization.
- **Process:** The process involves the procedures, channel of activities by which the information services are acquired. The library or information services for the customer in a convenient way (i.e. the help of Information Technology may be taken if needed).
- **Physical Evidence:** According to Shostack, "a physical object is self-defining; a service is not." Hence in educational sector the marketing task is "defining for the services what it cannot define for itself." Evidence for the service can be both peripheral and essential. Physical evidence can support the marketing programmes by providing adequate service to the library users. It can make the service corporeal.

- **Productivity and Quality:** Productivity involves hoe inputs are transformed into outputs that have value. Quality refers to the degree that the service satisfies the customer. Both productivity and quality are interwoven. In the context of library field to providing reference services isn't enough. These services must be effective and high quality to satisfy the customers.

7. FIVE LAWS OF LIBRARY SCIENCE AND MARKETING OF LIBRARY & INFORMATION SERVICES

- **Books are for Use/All:** Books should be accessible to all users' coming to the library. The library staff should take initiative to attract their users to read more & more available books. Books are for user promotes the use of books. Library staff should guide the users which are the good books available in the library, books should be placed on the appropriate place and may be entrance of the library where every user come, see and use. It is a skill of the library staff, how to attract the customers towards the library.
- **Every Reader His/Her Book:** Reader is the prime factor of every library and his/her need through providing books/reading materials must be satisfied. Library staff must see how library users are satisfied with the service provided by the libraries. Library staff must focus to the needs of such customers and their satisfaction. It is true that none library cannot satisfy each and every customer, however efforts may be made by the library staff to satisfy users maximum.
- **Every Book its Reader:** Ensure that every book is given to its reader, i.e. a reader is found for every book. Dr. S. R. Ranganathan expects that to find a reader for every book. Attitude of the library staff towards readers is more important. Library staff should be always positive to solve the problems of the users with smiling face.
- **Save the Time of Reader:** Organize the material such that the reader can easily find it.

- Reader should not waste their time in searching the informational, books and journals in the library. Repackaging information into appropriate form, availability of information when customers need. Ensuring quality of services and offering.
- **Library is a Growing Organism:** Librarians must also see how library collection grows with the qualitatively not in quantity. Today e-books, e-journal are more popular and easy to access. Hence venders are of promoting and marketing their products in package or pick and choose model where choice of selection of required books are with faculty members.

8. CHALLENGES BEFORE THE MARKETING OF LIBRARY AND INFORMATION SRVICES

- **Attitudinal:** Marketing also deals with improving customer's experience to the library. On regular basis the library staff interacts with the users. Here, the truth is that most of library staff for one reason or other does not show a positive attitude to the users thereby making the user to feel unlikely to return to the library.
- **Inadequate Library Funds:** Lack of funds constitute a major hindrance to marketing of information and library services in the libraries. Under normal budgetary allocation some library management do not make provision for marketing in their budgetary plans. As a result, they find it very difficult if not impossible to source for funds to undertake this very essential aspect of library routine.
- **Lack of Marketing Knowledge:** Lack of marketing knowledge by the library staff has been identified as a barrier to effective marketing of library and information services in the libraries. Therefore, the library staff should equip themselves with the latest techniques.
- **Miscellaneous nature of services and Clientele:** Institutional libraries have a wide range of services and clientele. Marketing of these miscellaneous services and attending to various clienteles has not been easy.

- **Information Evaluation:** Information resources and services constitute an intangible value to research and development. However, this value has been overlooked thus marketing a resource which value cannot be evaluated has been difficult.

9. CONCLUSION

Modern libraries are becoming proactive and customers focused by nursing to define the market before designing their products and services. 20th century library, the provision library, would throw its door open to all and encourage them to come in and join in the building of a community culture center. With the impact of technologies and other environmental changes, the role and concept of library services is changing rapidly. The range of services that take place outside the physical library is expanding due to the new technology, and it is likely to expand further. The main aim of the libraries is users' satisfaction of their products and services which marketing helps to advance. As Rowley (2001) described that, "Marketing is a management process by which customer requirements are identified, anticipated and supplied efficiently and profitably. In the same vein, goods/ products and services are offered in marketing and libraries to meet the needs of their target user groups." The inadequate fund for the libraries and the introduction of new technology and its' application in libraries have opened new vistas for marketing of library resources, products and services. Library and information professionals must be aware of and sensitive to marketing in every aspect of acquisition, digitization, sharing of resources, access and delivery, and services to the users. Dr. S. R. Ranganathans' five law of library science beat the customers' perspective.

The ***Eight Ps*** may be an important tool to help the librarians to understand information agencies as a business, librarians need to overcome the concept and go out of these walls of information agencies to guarantee the future of these organization.

REFERENCES

1. Abhinandan, K. J., Jambhekar, Ashok, Rao, T.P.R., and Rao., S. S. (Eds), "Marketing Information Products and services." New Delhi, Tata McGraw Hill, 1999.

2. AMA Adopts New Definition of Marketing, Marketing News, and September 15, 2004. http://www.marketingpower.com/content21257.php
3. Anand, K.K., "Quality Management Handbook." New Delhi, Vikas Publishing House, 1986
4. Dhiman, Anil Kumar, & Sharma, Hemant (2009), "Service Marketing Mix in Library and Information Centers." ICAL 2009 - Advocacy and Marketing.
5. Dragon, A. C., "Marketing the Library." Wilson library Bulletin 53(7), 1979.
6. Gupta, D. K., & Jambhekar, Ashok (2002), "Developing a customer-Focus Approach to Marketing of Library and Information Services." DESIDOC Bulletin of Information Technology, 22(3), May 2002.
7. Gupta, D.K. (2003), "Marketing of Library and Information Services: Building a new description for library and information science education in Asia. Malaysian Journal of Library and Information Science. 8(2).
8. Gupta, D. K. (2006), Broadening LIS marketing. In Marketing Library and Information Services: International Perspectives."
9. Kotler, Philip, "Marketing of Non-Profit Organizations." New Delhi, Prentice-Hall of India, 1985.
10. Kotler, Philip, "Marketing Management: Analysis, Planning, Implementation, and Control." New Delhi, Prentice-Hall of India, 1994.
11. Madhusudan, M. (2008), "Marketing of Library and Information Services and Products in University Libraries: A Case Study of Goa University Library." Library Philosophy and Practice (e-journal) March: 1-6. http:// www.digitalcommon,unl.edu
12. Nicholas, Julie, "Marketing and Promotion of Library Services." Journal of Library and Information Services in Astronomy 111. ASP Conference Series, Vol. 153, 1998. http://.stsci.edu/stsci/meetings/lisa3/nichlasj.html
13. Okon, Michael E. & Umoh, Mbuotidem, "Marketing of Information and Library Services in Nigerian University Libraries: The way Forward." Information and Knowledge Management. Vol. 4 No. 6, 2014. Available: www. ijste.org

14. Patil, S.K. & Pradhan, Pranita, "Library promotion practices and marketing of Library services: A role of Library professionals." Available at: www.sciencedirect.com
15. Ranganathan, S.R., "Five Laws of Library Science; Madras Library Association: Madras, India, 1931. http://dist.sir.arizon.edu/1220/
16. Rafiq, M. Ahmed, P.K. (1995), "Using the 7Ps as a Generic Marketing Mix: An Exploratory Survey of UK and European Marketing Academics. Marketing Intelligence & Planning, 13(9).
17. Rowley, J. (1998), "Promotion and Marketing Communication in the Information Marketplace." Library Review, 47 (8).
18. Rowley, J. (2006), "Information Marketing: England; Ashgate Publishing Limited.
19. Seetharama, S. "Guidelines for marketing for information services and products." In marketing of library and information services in India, Calcutta: IASLIC, 1988.
20. Smith, Duncan, "Practice as a Marketing Tool: Four Case Studies' Library Trends, Vol. 3.
21. Weingand, Darlene E., "Marketing/Planning Library and Information Services; Libraries Unlimited Littleton, Co, 1987.

Ranked List Of Cited Journals In History Doctoral Theses In Kurukshetra University, Kurukshetra During 1979-2012

Suresh Kumar Kagrà

Ph. D. Scholar, Department of Library and Information Science
Kurukshetra University, Kurukshetra Email.s80kagra@gmail.com

Abstract: The out of total 7730 citations, 503 (6.51percent) journal citations analyzed were cited in 54 doctoral theses of History awarded in Kurukshetra University, Kurukshetra from the period beginning of research in this university up to the end of 2012. The received the highest number of 13 doctoral theses awards in year 2009 to 2012. Total 241 titles were of journals received, the first ranked journal was "Journal of Indian History" with 19 (3.78%) citations and Secondly, ranked journal was "Indian Economic and Social History Review" with 18 (3.58%) citations cited in doctoral theses.

Keywords: Citation, Bibliometric Form, Theses of History, Kurukshetra University, Ranked list of journals

1. Introduction

The paper studies covered the 54 doctoral theses in History by Kurukshetra University, Kurukshetra 1979-2012. Books ware major sources of information used the researchers in the department of History. Secondly, journals literature was of conducting the doctoral theses research projects in History. The researchers were used the old and new documents according to gap period of literature. Citation analyses are mainly based on documents studies conduct the department of Library and Information Science and the focus this studies distribution of doctoral theses, bibliographic forms, country-wise distribution of journal citations and ranked list of cited journals used the researchers in History.

Citation analysis of doctoral theses revealed the literature used by doctoral students of particular Universities. It shows the satisfaction ranked list of cited journals in doctoral theses and media preferred by researchers in History. It also helps in evaluation of the collection of University Libraries. Quite a large number of such studies are regularly being conducted in History.

2. Statement of the Problem

The researchers make use of information resources available in their university library or other library or even available free on the internet. Knowledge of the

sources used by researchers shall not only improve their understanding of the researchers that also help in making the information system more efficient by allocation of budget for resources in different form and acquiring highly used sources. The history has some contents and therefore may have some information resources also. The study shall be able to identify those information sources used by historians.

3. Objectives

1. To analyses doctoral theses according to year and total citations;
2. To analyses of citations according to bibliographic form;
3. To preparation ranked list of journal literature;
4. To analyses country-wise distribution of journal citations

4. Methodology

Kurukshetra University, Kurukshetra being major centers of education and research, provide opportunity for conducting a large numbers of doctoral studies every year and house their products in the form of 54 doctoral theses available in department of history and Jawahar Lal Nehru library of the university. The present study aims to estimate the extent of use in various documentary sources of information in the process of identification, selection, designing, execution and present action of doctoral theses during a specified period of beginning of research in this university up to the end of 2012 in particular field of history in Kurukshetra University, Kurukshetra. The instrument used for data collection was MS excel format.

5. Analysis of data

This journal literature includes analysis of primary data of the study. Data collect from doctoral theses in History field have been classified, tabulated and analyzed in accordance with the set objectives of the study. The present study includes analysis of out of 7730 citations, 503 journals covered from 54 doctoral theses in the field of History.

Table-1 Doctoral theses according to year-wise

Sr. No.	Year-wise	Number of doctoral Theses
1	1979-1983	4
2	1984-1988	3
3	1989-1993	7
4	1994-1998	12

5	1999-2003	8
6	2004-2008	7
7	2009-2012	13
	Total	54

Table 1 show fifty four doctoral theses awarded in Kurukshetra University, Kurukshetra during 1979 to 2012. The total number doctoral theses were increasing every year. The doctoral theses received highest number of three teen awards in year 2009 to 2012 and more than 12 doctoral theses received in the years 1994and 1998.

Table-2 Bibliographic form of cited literature

Sr. No.	Bibliographic Form	Citations N(%age)
1.	Books	4846 (62.69)
2.	Journals	503 (6.51)
3.	Report/Archival papers	769 (9.95)
4.	Government Publications	883(11.43)
5.	Conference/Seminar/Proceedings	109 (1.42)
6.	Contributed books /interviews	90 (1.16)
7.	Encyclopedia/ Directory/Dictionaries	73 (0.94)
8.	New paper/Magazine/Pamphlets	360 (4.65)
9.	Theses/ Dissertations	97 (1.25)
	Total	7730 (100)

Table-2 shows that deferent forms of literature used by researchers in History. Out of 7730 citations, 4846 (62.69 percent) were books followed by journals 503 (6.51 percent). There were the two major forms of literature, which comprise 69.20 percent of total citations. The rest were report/Archival paper 769 (9.95 percent), government publication 883 (11.43percent), new paper/magazine/ pamphlet 360 (4.65 percent) and theses/ dissertation 97 (1.25percent) belong to forms of literature.

Table-3 Ranked List of Cited Journals of History in KUK

Sr. No.	Rank	Journals	History N(%age)
1	1	Journal of Indian History	19 (3.78)
2	2	Indian Economic and Social History Review	18 (3.58)

3	3	Modern Asian Studies	17 (3.38)
4	4	Indian History Conference Proceedings	16 (3.18)
5	5	Punjab Past and Present	15 (2.98)
6	6	Journal of Asian Studies	14(2.78)
7	7	Kurukshetra University Research Journal	13 (2.58)
8	8	Economic and Political Weekly	12 (2.39)
9	8	Modern Review	12 (2.39)
10	8	Punjab History Conference Proceedings	12 (2.39)
11	9	Indian Historical Review	11 (2.19)
12	10	Journal of Haryana Studies	10 (1.99)
13	10	Proceedings of Indian History Congress	10 (1.99)
14	11	Indian History Congress	9 (1.79)
15	12	Islamic Culture	8 (1.59)
16	13	Indian Journal of History of Science	5 (0.99)
17	13	Quarterly Review of Historical Studies	5 (0.99)
18	13	Indian Journal Of Social Science	5 (0.99)
19	14	Haryana Research Journal	4 (0.80)
20	14	Indian Review	4 (0.80)
21	14	Calcutta Review	4 (0.80)
22	14	Economic History Review	4 (0.80)
23	15	Indian Historical Quarterly	3 (0.60)
24	15	Itihas, ICHR	3 (0.60)
25	15	Journal of Asiatic Society of Bengal	3 (0.60)
26	15	Journal of Bihar and Orissa Research Society	3 (0.60)
27	15	Journal of Common Wealth and Comparative Politics	3 (0.60)
28	15	Journal of Contemporary Asia	3 (0.60)
29	15	Journal of Modern Asian Studies	3 (0.60)
30	15	Journal of Royal Asiatic Society Bangal	3 (0.60)
31	15	Journal of Sikh Studies	3 (0.60)
32	15	Proceedings of Punjab History Conference	3 (0.60)
33	15	Punjab History Congress	3 (0.60)
34	16	Punjab Journal of Politics	2 (0.40)
35	16	Social Scientist	2 (0.40)

36	16	Statesman	2 (0.40)
37	16	Annals of Bhandarkar Oriental Research	2 (0.40)
38	16	Aligarh Journal of Oriental Studies	2 (0.40)
39	16	American Journal of Political Science	2 (0.40)
40	16	Asian Survey	2 (0.40)
41	16	Bangal Past and Prefect	2 (0.40)
42	16	Congress Socialist	2 (0.40)
43	16	Culture	2 (0.40)
44	16	Culture Society and Politics in Central Asia and India	2 (0.40)
45	16	Economic and Social History Review	2 (0.40)
46	16	Enquiry	2 (0.40)
47	16	Explorations in Economic History	2 (0.40)
48	16	Gandhi Marg	2 (0.40)
49	16	Harijan	2 (0.40)
50	16	Haryana Tilak	2 (0.40)
51	16	Historical Review	2 (0.40)
52	16	Indian Annual Register	2 (0.40)
53	16	Indian History Review	2 (0.40)
54	16	Indo African Journal	2 (0.40)
55	16	Indo-Ironical; Journal of the Iran Society	2 (0.40)
56	16	International Affairs	2 (0.40)
57	16	Journal of Asian and African Studies	2 (0.40)
58	16	Journal of British Studies	2 (0.40)
59	16	Journal of Commonwealth Political Studies	2 (0.40)
60	16	Journal of Economic and Social History of the Orient	2 (0.40)
61	16	Journal of Peasant Studies	2 (0.40)
62	16	Journal of South Asia	2 (0.40)
63	16	Journal of Studies in History and Society	2 (0.40)
64	16	Journal of the Asiatic Society of Bengal	2 (0.40)
65	16	Journal of the Asiatic Society of Pakistan	2 (0.40)
66	16	Leader	2 (0.40)
67	16	New Age	2 (0.40)

68	16	Secular Democracy	2 (0.40)
69	17	A Quarterly Journal of Anthropology	1(0.20)
70	17	Africa Journal of Historian	1(0.20)
71	17	American Culture	1(0.20)
72	17	American Journal of Sociology	1(0.20)
73	17	American Sociological Review	1(0.20)
74	17	Amrit Bazaar Patrika	1(0.20)
75	17	Andhra Pradesh History Congress	1(0.20)
76	17	Annals of Bhandarkar Oriental Research	1(0.20)
77	17	Asian Historical Life	1(0.20)
78	17	Asian Review	1(0.20)
79	17	Asiatic Review	1(0.20)
80	17	Athenaeum	1(0.20)
81	17	Azlla I Afrikil Sevodnaya	1(0.20)
82	17	Bihar Research Society	1(0.20)
83	17	Bombay Chronicle	1(0.20)
84	17	Bulletin: institute for the Study of the Ussr	1(0.20)
85	17	Canadian Journal of Political Science	1(0.20)
86	17	Central Asia	1(0.20)
87	17	Civil and Military Gazette	1(0.20)
88	17	Commercialization of Indian Agriculture	1(0.20)
89	17	Communist	1(0.20)
90	17	Comparative Studies in Society and History	1(0.20)
91	17	Contemporary Review	1(0.20)
92	17	Cultural Contours of India	1(0.20)
93	17	Culture forum	1(0.20)
94	17	Current History	1(0.20)
95	17	Demography India	1(0.20)
96	17	East India Association	1(0.20)
97	17	East Turkic Review	1(0.20)
98	17	Economic Journal	1(0.20)
99	17	Economic Weekly	1(0.20)
100	17	Economist	1(0.20)
101	17	Edinburgh Review	1(0.20)

102	17	Educational Quarterly	1(0.20)
103	17	Epigraphic Indo-Muslimka	1(0.20)
104	17	European Consortium for Political Research	1(0.20)
105	17	Feminist Review	1(0.20)
106	17	Foreign Affairs	1(0.20)
107	17	Friend of India	1(0.20)
108	17	Frontier	1(0.20)
109	17	Gender and Society	1(0.20)
110	17	Government and Opposition	1(0.20)
111	17	Guru Nanak Journal of Sociology	1(0.20)
112	17	Haryana Samwad	1(0.20)
113	17	Hindustan	1(0.20)
114	17	Historians Life	1(0.20)
115	17	Historical Prospective	1(0.20)
116	17	Historical Review of Historical Studies	1(0.20)
117	17	History of India As Told By Its Own Historians	1(0.20)
118	17	History of Realigns	1(0.20)
119	17	ICHR Reading Material on the Indian National Movement	1(0.20)
120	17	Idea of Rajasthan	1(0.20)
121	17	Illustrated London News	1(0.20)
122	17	India Journal of Social Work	1(0.20)
123	17	Indian and foreign Review	1(0.20)
124	17	Indian Antiquary	1(0.20)
125	17	Indian Archives	1(0.20)
126	17	Indian Culture	1(0.20)
127	17	Indian Historical Records Commission Proceedings	1(0.20)
128	17	Indian Historical Studies	1(0.20)
129	17	Indian Journal of Economic	1(0.20)
130	17	Indian Journal of Social Work	1(0.20)
131	17	Indian Quarterly	1(0.20)
132	17	Indian Woman	1(0.20)

133	17	Indo British Review, A Journal of History	1(0.20)
134	17	Indo-Asian Culture	1(0.20)
135	17	International Labour Review	1(0.20)
136	17	International Social Science Bulletin	1(0.20)
137	17	International Social Science Journal	1(0.20)
138	17	Itihas Ek Katha	1(0.20)
139	17	Itihas Ek Vartant	1(0.20)
140	17	Jan Sahitya	1(0.20)
141	17	Janata	1(0.20)
142	17	Jiwan Ka Anmol Itihas	1(0.20)
143	17	Journal of Applied Gandhism	1(0.20)
144	17	Journal of Constitutional and Parliamentary Studies	1(0.20)
145	17	Journal of Counseling Psychology	1(0.20)
146	17	Journal of Economic and Social History Review	1(0.20)
147	17	Journal of Economic History	1(0.20)
148	17	Journal of Family Welfare	1(0.20)
149	17	Journal of Historical Research	1(0.20)
150	17	Journal of Indian Economic Society	1(0.20)
151	17	Journal of Life History	1(0.20)
152	17	Journal of Madras University	1(0.20)
153	17	Journal of Nigerian History Journal	1(0.20)
154	17	Journal of Pakistan Historical Society	1(0.20)
155	17	Journal of Parliamentary information	1(0.20)
156	17	Journal of Political Studies	1(0.20)
157	17	Journal of Politics	1(0.20)
158	17	Journal of Regional Studies	1(0.20)
159	17	Journal of Rural Development	1(0.20)
160	17	Journal of Social and Economic Studies	1(0.20)
161	17	Journal of Social Issue	1(0.20)
162	17	Journal of the Andhra Historical Research Society	1(0.20)
163	17	Journal of the Asiatic Society	1(0.20)

164	17	Journal of the Bihar	1(0.20)
165	17	Journal of the Economic and Social History of the Orient	1(0.20)
166	17	Journal of the institute of Rajasthan Historical Research	1(0.20)
167	17	Journal of the Numismatic of India	1(0.20)
168	17	Journal of the Pakistan Historical Society	1(0.20)
169	17	Journal of the Punjab Historical Society	1(0.20)
170	17	Journal of the Research Society of Pakistan	1(0.20)
171	17	Journal of the Society of Great Britain and Ireland	1(0.20)
172	17	Journal of UP Historical Society	1(0.20)
173	17	Justice	1(0.20)
174	17	Kingship and Authority in South Asia	1(0.20)
175	17	Labour and Parliamentary Democracy	1(0.20)
176	17	Land Tenure and Peasant in South Asia	1(0.20)
177	17	Link	1(0.20)
178	17	Man and Development	1(0.20)
179	17	Man in India	1(0.20)
180	17	Mankind	1(0.20)
181	17	Medieval India	1(0.20)
182	17	Medieval India Quarterly	1(0.20)
183	17	Medieval India: A Miscellany	1(0.20)
184	17	Middle East Journal	1(0.20)
185	17	Middle East Report	1(0.20)
186	17	Modern Indian Economic History	1(0.20)
187	17	Money and Market in India	1(0.20)
188	17	Muslim Administration of India Islamic Culture	1(0.20)
189	17	National Herald	1(0.20)
190	17	Nature	1(0.20)
191	17	New India Antiquary	1(0.20)
192	17	New Life Review	1(0.20)
193	17	New Middle East	1(0.20)

194	17	New Orient	1(0.20)
195	17	New Times	1(0.20)
196	17	Occasional Papers	1(0.20)
197	17	Occasional Papers of History and Society	1(0.20)
198	17	Orbits	1(0.20)
199	17	Organizer	1(0.20)
200	17	Orissa Historical Research Journal	1(0.20)
201	17	Pakistan: the Long View	1(0.20)
202	17	Pioneer	1(0.20)
203	17	Proceedings Punjab History Conference	1(0.20)
204	17	Punjab University Research Bulletin	1(0.20)
205	17	Quaint Ekta	1(0.20)
206	17	Quarterly Review	1(0.20)
207	17	Rajasthan Bharati	1(0.20)
208	17	Radical Humtice	1(0.20)
209	17	Review of international Affairs	1(0.20)
210	17	Round Table	1(0.20)
211	17	Science	1(0.20)
212	17	Seminar	1(0.20)
213	17	Sex Roles	1(0.20)
214	17	Sign	1(0.20)
215	17	Sikh Review	1(0.20)
216	17	Situating Indian History	1(0.20)
217	17	Social Science	1(0.20)
218	17	Social Science Probing	1(0.20)
219	17	Social Sciences Today	1(0.20)
220	17	Social Studies of Science	1(0.20)
221	17	Social Welfare	1(0.20)
222	17	Survey	1(0.20)
223	17	Technology and Society in the Middle East	1(0.20)
224	17	The Medieval India	1(0.20)
225	17	The Modern Review	1(0.20)
226	17	The Western Political Quarterly	1(0.20)
227	17	Transactions of the Royal Historical Society	1(0.20)

228	17	Transfer of Power	1(0.20)
229	17	Variant	1(0.20)
230	17	Westnik	1(0.20)
231	17	Vigyan	1(0.20)
232	17	Visav Sanwad	1(0.20)
233	17	Warfare and Weaponry in South Asia	1(0.20)
234	17	Western Culture	1(0.20)
235	17	Westeran Politics	1(0.20)
236	17	Woman in Politics	1(0.20)
237	17	World Affairs	1(0.20)
238	17	World Politics	1(0.20)
239	17	World Today	1(0.20)
240	17	Yojana	1(0.20)
241	17	Young India	1(0.20)
Total			503 (100)

Table-3 shows that ranked list of highly cited journals of History in Kurukshetra University, Kurukshetra. The first ranked journal was "Journal of Indian History" with 19 (3.78%) citations. Second ranked journal was "Indian Economic and Social History Review" with 18 (3.58%) citations. The third ranked journal was "Modern Asian Studies" with 17 (3.38%) citations. The table shows that total 241 titles, 35 journals cited 2 times each and 173 journals were cited one times each.

Table-4 Country-wise distribution of Journals citations of History doctoral theses in KUK

Sr. No.	Country	Citations N (%age)
1	Indian	367 (72.96)
2	Foreigner	136 (27.04)
Total		503 (100)

Table-4 shows that country-wise distribution of journal citations. The highest number of 367 cited journals were of Indian origin 367(72.96 percent), followed by Foreigner got 136 (27.04percent).

6. Findings of the study

The present study was an effort to identify a reference analysis of doctoral theses

in history awarded in Kurukshetra University, Kurukshetra on the basis of citations cited by 54 doctoral theses. The following were some important findings of the study:

1. The received highest number of 13 doctoral theses awards in year 2009 to 2012 and more than 12 doctoral theses received in the years 1994and 1998.
2. Out of 7730 citations, 4846 (62.69 percent) were books followed by journals 503 (6.51 percent).
3. Total 241 titles were of journals received, the first ranked journal was "Journal of Indian History" with 19 (3.78%) citations and Secondly, ranked journal was "Indian Economic and Social History Review" with 18 (3.58%) citations cited in doctoral theses.
4. The maximum number of 367 cited journals were of Indian origin 367(72.96 percent), followed by Foreigner got 136 (27.04percent).

References

1. Bandhyopadhyay, A.K. (2001).Authorship pattern in different disciplines. Annals of Library science and Documentation, 48 (4), 139-147.
2. Bandhyopadhyay, A.K. & Nandi, A. (2001). Citation analysis of references used in doctoral dissertations of political science, Herald of Library Science, 40 (3-4), 192-200.
3. Lokhanda, R. S (2011), Citation Analysis of Doctoral Dissertations Submitted to University of Poona in the Subject Library and Information Science, ILA Bulletin, 43 (2), 12-18.
4. Pamamma, S. & walmiki, R.H. (2012). Dctoral theses awarded in science,arts and departments in kuvempu university during 1993-2009 study, SRELS Journal of Information Management, 49(5), 589-598.
5. Rao, R. (1974). Growth of periodicals and obsolescence of articles in periodicals: A case study in sociology, Library Science, 2 (2), 92-94.
6. Surendera Kumar, (2005). A bibliometric study of the journal of oil seeds research, since 1993-2001, SRELS Journal of Information Management, 42 (3), 305-334.

Sanskrit Resources in United Kingdom and Challenges regarding their Access

Mohammad Ishaq Lone

Assistant Librarian, Allama Iqbal Library, University of Kashmir
ishaq109@gmail.com

Abstract: The paper tries to explore the Sanskrit resources available in different libraries and institutions in United Kingdom (UK). The data is collected using COPAC which is a union catalogue of various institutions in UK. The study reveals that a good number of Sanskrit resources published/compiled before 1850 exist in this part of the world. Most of the resources are in University Libraries. The study has attempted to find out the resources which can be digitized and later researched so that unknown knowledge published/compiled either from India or elsewhere can be unearthed. Although few of these resources are translated but most of them are in original form requiring the attention of the scholarly world.

Keywords: Sanskrit Resources, Sanskrit Literature, UK Libraries, Sanskrit Resources-UK Libraries, Sanskrit Literature-United Kingdom.

1. INTRODUCTION

The oriental languages have contributed immensely and a rich treasure of documents ranging from poetry to Mathematics, drama to logic and epistemology is available in these languages (Bhate, 2010). Earlier, the literary tradition was mostly oral and has passed from generation to generation. Later, written transcription was adopted to ensure longevity and wider dissemination of information (Tripathi & Mishra, 2010

For many years it is said that Western people have transferred some major parts of the cultural inheritance of the Orient to their countries. Some valuable works are in countries like Canada, Denmark, France, Germany, Great Britain, Ireland, Italy, the Vatican, the Netherlands, Spain and the United States. The collections in Western Europe and Northern America are the basis for relations between east and west. These collections consist of manuscripts and printed texts, however, they also make us know that they are the outcomes of the lives which have been devoted to work, journey, and, study in Orient countries. In western libraries, there are manuscripts, provided by scholars, soldiers, trades-people, evangelists, managers, mass traders and tourists. These individuals have had done it for variant motivations and reasons (Shokrollahi, 2004).

European countries, particularly England, have been in oriental countries for centuries. They took different kinds of resources from these oriental countries. Manuscripts produced in India were also taken away illegally to Europe. For instance, most of the Arabic and Persian, and Urdu collections in the British Library are of Indian origin. Similar is the case with Persian manuscripts in France's Bibliotheque Nationale (Khalidi, Fall 2002–Spring 2003).

In this milieu, the present study tries to disclose the Sanskrit resources available in different institutions/libraries in United Kingdom so that the same is placed before the scholarly world.

2. Review of Literature

Kumar and Shah (2004) provide a list of libraries of the world where rare manuscripts of Indian origin are preserved and some of them are:- Copenhagen Royal Library (Denmark); Bibliotheque Nationale (The National Library of France); Preussiche States Bibliothek (Prussian State Library, Germany), University Library (Universitats bibliothek, Heidelberg), Staats Bibliothek (The Berlin State Library), Bayershe Staats Bibliothek (The Bavarian State Library, Germany); British Library, Royal Asiatic Society, Bodleian Library, Cambridge University Library (United Kingdom); Darbar Library (Nepal); Punjab University Library (Pakistan); Museum Library (Sri Lanka).

The oriental collection of British Library, the National Library of the United Kingdom has been exposed in detail by Beech (2004). The library is in possession of Asian Pacific and African Collections covering material in mainly 350 oriental languages, with 65,000 manuscripts, 900,000 printed books, 120,000 volumes of periodicals and newspapers, and the India Office Records (the Public Records relating to the British administration of India). These include files relating to postal services, stamps, tax and revenue stamps adhesive and unadhesive, military records, Religious records (including those of baptisms, marriages and burials for which certified copies of entries are issued). Oriental maps, official publications are also present in the library. Dhungel (2004) provides information related to Hodgson whose collection can be found in British Library. Morel (2005) mentions that British Library has developed an online guide to India Office Records' materials. According to Bond (2005), the British Library has acquired a wide range of material, which comprises not only the archives in the India Office Records, but also manuscripts and printed books in vernacular languages, publications in Western languages, illustrated material including prints, drawings, and photographs, music recordings, rare stamps and modern publications on both social sciences and natural sciences.

Ansorge (n.d.) informs about the Library of the Faculty of Oriental Studies at Cambridge, which had very modest beginnings in the early years of the twentieth century, is now a collection of more than fifty thousand volumes about the language, literature and culture of countries of the oriental world stretching from Turkey and Egypt in the west, across Asia to India, Central Asia and China to Japan. Library's Sanskrit collection section include mainly basic grammars and texts published in Europe but also include an early edition of Kalidasa's Sakuntala published in London in 1792 CE. Apart from these, Sir George Griersoin collated some manuscripts, notably two from Stein's collection deposited in the Bodilyan Library, Oxford and a few Sanskrit translations of the vaakhs or sayings of Lal Ded (Toshkhani, 2002).

3. OBJECTIVES

The study attempted to fulfil the following objectives:-

- To identify the Sanskrit resources available in different libraries/institutions in UK.
- To find out the places of publication and date of publishing/compiling the Sanskrit documents available in UK.
- To highlight the challenges regarding the access of Sanskrit resources.

4. METHODOLOGY

COPAC is used for gathering the data related to various oriental resources. "Copac: the UK and Irish National, Academic, and Special Library catalogue" provides free access to the merged online catalogues.

The data is gathered after limiting the search to Sanskrit documents. The bibliographical information retrieved for each document is minutely observed and recorded to obtain the required information. The data is tabulated under different headings to achieve the above mentioned objectives.

5. SCOPE

The main focus of the study is on the Sanskrit resources in document form. The documents published before 1850 CE are covered in the study to make the study manageable.

6. ANALYSIS OF DATA

1. Language wise distribution

The study reveals that a total of 1093 vols. of documents are available in the libraries/institutions of UK. The study reveals that out of 93 libraries/institutions, a significant number of libraries/institutions (40.9%) possess rare documents in Sanskrit language. Most of the libraries/institutions (21) have 1-10 vols. each while as 13 libraries/institutions have 10-100 vols. of Sanskrit resources each. (Table 1)

Table 1: Language-wise distribution.

Name of the Institute/Library	Sanskrit	%age
Oxford University	239	21.87
British Library	145	13.27
Cambridge University	138	12.63
Edinburgh University	118	10.79
Queen's University Belfast	77	7.04
SOAS, University of London	70	6.40
Glasgow University	46	4.21
Wellcome Library	41	3.75
Manchester University	23	2.10
Cambridge University(Sp collec)	23	2.10
Leeds University	22	2.01
Birmingham University	20	1.83
Exeter University	17	1.56
London Library	15	1.37
Trinity College Dublin	15	1.37
Register of Preservation ...	12	1.098
National Library of Scotland	12	1.098
National Library of Wales	8	0.73
Aberdeen University	7	0.64
University College London (UCL)	7	0.64
King's College London	5	0.46
Liverpool University	5	0.46
Newcastle University	3	0.27
Society of Antiquaries of Lond.	3	0.27
Durham University	3	0.27

Nottingham University	3	0.27
Senate House Libraries, U of Ln	3	0.27
Chetham's Library	2	0.18
V&A Museum (National Art Lib.)	2	0.18
Cardiff University, National Trust, Southampton University, St. Andrews University, Bradford (REES &..), Natural History Museum, Royal Society, Sheffield University, Warburg Institute	1 each	0.09 each
Total	1093	

Most of the Sanskrit rare documents are present in Oxford University (239 vols.) followed by British Library (145 vols.), Cambridge University (138 vols.) and Edinburgh University (118 vols.). (Table 1)

7. Subject wise distribution

Copac is an exclusive device which enables tracking down hard to find documents on a particular subject. An attempt is made to explore the different oriental resources available in different subjects as per Dewey Decimal Classification (DDC) scheme.

Rare documents in Sanskrit language mostly pertain to Literature (31.6%) followed by Languages (26.1%) and Religion (24.8%).

Table 2: Subject-wise distribution

Language	Computer Sc./Inf. & Gen. Works	Philosophy & Psychology	Religion	Social Sciences	Languages	Science	Technology	Arts & Recreation	Literature	History & Geography
Sanskrit	20	37	271	75	285	21	10	8	345	21
%age	1.83	3.39	24.79	6.86	26.08	1.92	0.91	0.73	31.56	1.92

8. Place of Publication

Most of the Sanskrit rare documents (530 vols.) present in UK were published in India. However, a good percentage of Sanskrit rare documents (23.4%) were

published in UK clearly indicating the dominant influence of Sanskrit language before 1850 CE. The data also reveals that other countries were also interested in Sanskrit language in past as 28.1% Sanskrit document were published in the countries other than India and UK. (Table 3)

Table 3: Place of Publication *

Language	UK	India	Other than UK and India/ Not known
Sanskrit	256 (23.4)	530 (48.5)	307 (28.1)

*The figures in the parenthesis indicate the percentage

9. Document categories

The data reveals that most of the documents in Sanskrit language are in original form (842 vols.) followed by translated documents (232 vols.) and reproduced ones (19 vols.). (Table 4)

Table 4: Document categories*.

Language	Original	Translated	Reproduced
Sanskrit	842 (77)	232 (21.2)	19 (1.74)

*The figures in the parenthesis indicate the percentage

10. Date of Publication

Most of the rare documents in Sanskrit language pertain to 1841-1850 CE (379 vols.) time period followed by 1831-1840 CE (285 vols.) and 1821-1830 CE (174 vols.).

Table 5: Date of Publication

Time Period	Sanskrit Documents	%age
1351-1400	4	0.37
1500-1550	2	0.18
1551-1600	1	0.09
1651-1660	1	0.09
1661-1670	1	0.09
1671-1680	2	0.18

Social and Behavioral Sciences, 2(5). Retrieved November 17, 2016 http://www.sciencedirect.com/

4. Bond, X. W. (2005). Literary and pictorial sources for pre-20th century Afghanistan in the British Library. *74th Conference of SAALG,* 9 December 2005 (pp. 38-44). Luton: the Kashmir Bhawan Centre. Retrieved November 17, 2016 from http://www.bl.uk/reshelp/bldept/apac/saalg/issue3.pdf
5. Dhungel, R. K. (2004). Opening the chest of Nepal's history: The survey of B. H. Hodgson's manuscripts in the British Library and the Royal Asiatic Society, London. *72nd Conference of SAALG,* 26 November 2004 (pp. 65-73). London: the British Library. Retrieved July 17, 2017 from http://www.bl.uk/reshelp/bldept/apac/saalg/issue3.pdf
6. Khalidi, O. (Fall 2002-Spring 2003). A guide to Arabic, Persian, Turkish, and Urdu manuscript libraries in India, *MELA Notes,* 75-76, 1-59. Retrieved July 17, 2017 from www.islamicmanuscripts.info/reference/articles/Khalidi-2003-Guide.pdf.
7. Kumar, S., & Shah, L. (2004). Digital preservation of manuscripts : A case study. *2nd Convention PLANNER* (pp. 27-36). Ahmedabad: INFLIBNET. Retrieved November 15, 2016 from http://shodhganga.inflibnet.ac.in/dxml/handle/1944/419
8. Morel, R. S. (2005). Historical sources for Afghanistan in the British Library. *74th Conference of SAALG,* 9 December 2005 (pp. 26-37). Luton: the Kashmir Bhawan Centre. Retrieved November 15, 2016 from http://www.bl.uk/reshelp/bldept/apac/saalg/issue3.pdf
9. Shokrollahi, E. (2004). The World of the Islamic manuscripts database: A prerequisite for writing the Muslim history of science with emphasis on Abdul Hossein Haeri's viewpoints. *World library and information congress: 70th IFLA general conference and council,* 22-27 August 2004 (pp. 1-7). Buenos Aires, Argentina: IFLA. Retrieved November 17, 2016 fromhttp://www.ifla.org/IV/ifla70/prog04.htm
10. Toshkhani, S. S. (Ed.) (2002). *Lal Ded: The great Kashmiri saint-poetess.* New Delhi: A.P.H. Publishing Corp. Retrieved July 10, 2017 from http://

this India need to collaborate with the UK countries, although time consuming process, so that the literature pertaining to India is researched in detail.

iv. Memorandums Of Understanding (MOU) should be signed so that inter library loan facility is extended to the researchers across the boundaries of countries. The different countries should find solution whereby the rare resources in different languages are digitized but often it becomes a herculean task to convince the bureaucrats and not to talk of ministers. Once the digitization process starts, there arise few more challenges including those related to copyright, technology, manpower, funding etc.

v. The already digitized content need to be preserved for future as well demanding digital preservation strategies which is often not taken care of and thus emerging as one of the challenges for the archivists and library professionals.

12. Conclusion

The paper tried to identify the institutions/libraries in possession of Sanskrit rare resources published/compiled before 1850CE. Around 1093 vols. of Sanskrit rare documents are present in different institutions/libraries in UK having their own significance. Each rare document can open a plethora of knowledge if researched by the scholars. The need of the hour is to digitize the rare documents and provide access to them for academic/scholarly purpose. Till date many stakeholders have contributed in preserving these documents and now, it is the responsibility of the coming generations to make sure the same are preserved for future as well.

References

1. Ansorge, C. (n.d.).The faculty of Oriental Studies Library: A history of the early years. *SAALG Newsletter*, 1, 28-39. Retrieved November 17, 2016 from http://www.bl.uk/reshelp/bldept/apac/saalg/issue1.pdf
2. Beech, D. R. (2004). Philatelic research at the British Library. *Cross Post [Journal of The Friends of Postal Heritage], 10*(3), 119-128. Retrieved July 10, 2017 from http://www.bl.uk/reshelp/pdfs/philatelic_research.pdf
3. Bhate, S. (2010). Sanskrit cosmos-Asian empire-Pune fortress. *Procedia* -

ikashmir.net/lalded2/doc/lalded.pdf

11. Tripathi, S., & Mishra, V.K. (2010). Retrospective conversion of ancient knowledge: Issues and challenges: A case study of central library, Banaras Hindu University, India. *Library Philosophy and Practice.* Retrieved July 17, 2017 from http://cors0812.unl.edu/LPP/tripathi-mishra.pdf

Authors Profile



Mohammad Ishaq Lone is working as Assistant Librarian in Allama Iqbal Library, University of Kashmir, Srinagar (J & K), India. He is a prolific writer having more than 23 research publications to his credit. He regularly participates in national and international workshops, seminars, conferences and symposia. He has presented 17 research papers in various national and international conferences, seminars etc. He has also delivered lectures during workshops, user awareness programmes, training courses, Refresher Courses and Orientation Programmes.

E-mail: ishaq109@gmail.com

Awareness and Usage Pattern of Internet by the Students of Kurukshetra University Kurukshetra

Mr. Yeshpal Singh

Abstract: The rapid growth of information and communication technology has brought change in information scenario. Advent of ICT and its use in library operation has changed information needs and behavior of the users. The purpose of the study is to find out the use of Internet by the users of Kurukshetra University, Kurukshetra. Data for the study was collected via a well-structured questionnaire that was administered to 100 users of library. Out of 100, a total of 86 questionnaires duly completed were received back, showing an overall response rate of 86 percent. The data so collected were analyzed and interpreted with the help of MS Excel. The study findings reveal that 43.02% of respondents used e-journal while 27.90% used E-thesis/dissertation on internet. Majority of the respondents used the internet for research purpose. It was noted that 50% respondents used the internet for chatting. The purpose of the study was to investigate the type of internet sources used by the respondents and their Internet services. The study found that E-mail services were the most used among the respondents. The aim of the paper is consider the various factor of internet usage such as purposes, problems, various e-resources, using methods of internet and satisfaction with internet.

1. Introduction

The information has been the basic need of the society always but at no point of time, Information communication technology (ICT) has played such a crucial role as it is playing today. A rapid information changing world, information needs of learners and knowledge seekers have met with plethora of sources (Velmurugan and Ramasamy 2014). Libraries are constantly expanding their e-resources and e-services developing new technology and procedures to meet the various information requirements of the users through the internet. Technology is used for accessing, acquiring, dissemination and use of information. Application of new technology has brought a lot of dramatic changes in the library and information field. So the library must therefore be alert to change from time to time. Internet facility in India has grown greatly over the years. The use of Internet is rapidly increasing due to its efficiency and capability in providing right information to the right person at the right time. It works around the clock and connects every corner of the world. Internet has become an unavoidable necessarily for every institution of higher learning (Salma and Dominic, 2009).The internet traces its

origin to 1960's where it grew out of an experiment conducted by the US Department of Defense. They wanted to create computer network that could continue to function in the event of disaster, such as nuclear war. That network was known as ARPANET (Advanced Research Project Agency Network) which linked with US Scientific Academic Researchers. "The word internet is derived from two words: INTER connection & NET works. Also referred to as "the Net", Internet is a worldwide system of computer networks, that is, a network of networks, which allows the participants (users) to share information on those linked computers".**ITESL (2007)**

2. About Kurukhetra University

The Kurukshetra University is the oldest University of Higher Learning in Haryana, Which was established in 1956 as a unitary Residential University and its establishment stone was laid by late Dr. Rajendra Prasad. It is located in the holy city of Kurukshetra, land of the historical battle of Mahabharata.

3. Objectives:

The following are the objectives of the study:

1. To find out the frequency of visit to the library by students.
2. To find out the internet sources frequently used by the students.
3. To identify the purpose of using internet by the users.
4. To find out the preferred place for internet usage by the users.
5. To identify the problems faced by students while using internet.
6. To identify the internet based resources, services.
7. To find out satisfaction level with the use of Internet.

4. Review of Literature

Anil Kumar and Parmar (2014) conducted a survey to assess the use of Internet by Kurukshetra University. The study included the critical success factors on Internet usage of Sciences departments. A questionnaire based survey was carried out using 205 postgraduates belongs to deferent departments. Majority of 87.8% respondents were using the Internet for research works and 73.1% for education purpose.

Buhari (2013) conducted a study on internet access and use by academic staff and students and revealed that both staff and students use the internet for research and academic purposes, that the most frequently used places for accessing the internet by respondent are the Internet café. He shows that the inadequacy of internet facilities in departments and colleges of the institution was responsible for denigrating the private internet café by student.

Marimuthu and Paraman (2011) conducted a study on Analysis of Information Technology Application in Academic Libraries in Kuwait. The study summarizes that the development and use of Information Technology enable the libraries to offer their clientele not only the appropriate resources available within their own libraries but also to provide access to information in other libraries. The study also reveals that technology remains one of the primary drivers of change in the way that people work, seek information, communicate and intertain themselves.

5. Research Methodology

The questionnaire was designed for the users to assess their need about internet. The questionnaire included different types of questions such as multiple choices.The various aspects covered in the questionnaire.The well-structured questionnaire was administered to the students. The investigator personally visited libraries for taking response through the questionnaire. For filling up the questionnaire from students, questionnaires were randomly distributed in the libraries.Random sampling process was followed for data collection. The sample was random in the sense that the present study consisted of male and female students randomly selected from JLN library Kurukshetra. 100 questionnaires were distributed among the male and female respondents of this University and out of 100 questionnaires only 86 questionnaires were received back.The data so collected was tabulated and analyzed with help of MS Excel and observation made during the study. The quantitative data collected with the help of questionnaire was analyzed with the help on percentage method.

6. Data Analysis

Table- 1 Gender wise Distribution of Respondents

Gender	Respondents	Percentage
Male	53	62.62

Female	33	38.37
Total	86	100

Source: Table compiled from the data collected from the questionnaire.

Table-1 Showsthat out of 100 respondents 53 (62.62%) respondents were maleand 33 (38.37%) respondents were femaleshowing more or less the students are equal respondents of this category.

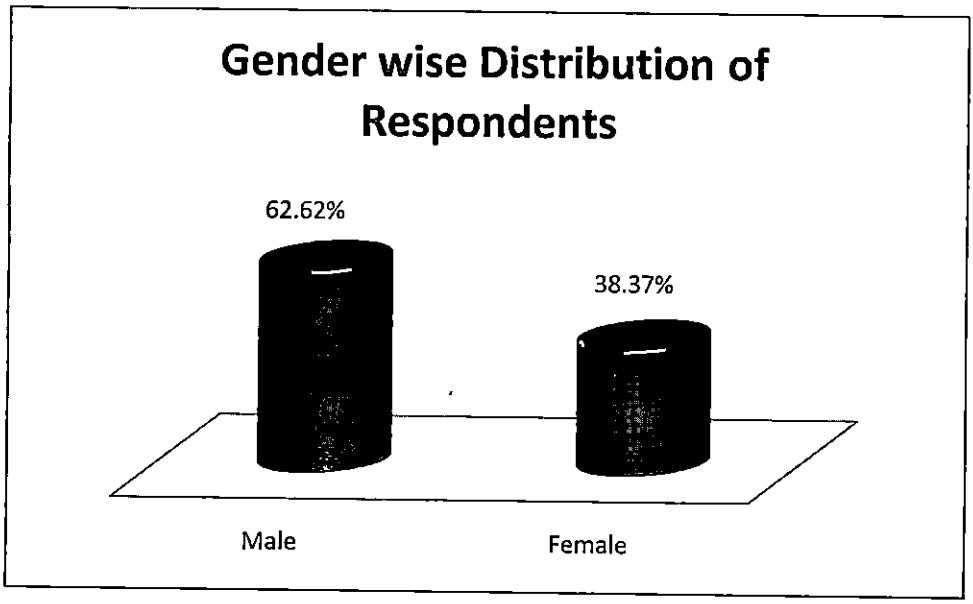


Table- 2 Frequency of Use of Internet

Frequency	Total	Percentage
Daily	27	31.39
Twice a week	33	38.37
Weekly	17	19.76
Once a Month	9	10.46
Total	86	100

Source: Table compiled from the data collected from the questionnaire.

Table-2 highlights that 31.39% respondents visited library daily and 38.37% respondents visited the library in twice a week.It is also evident from the table that 19.76% respondents visited weekly, 10.46% of them once a month.

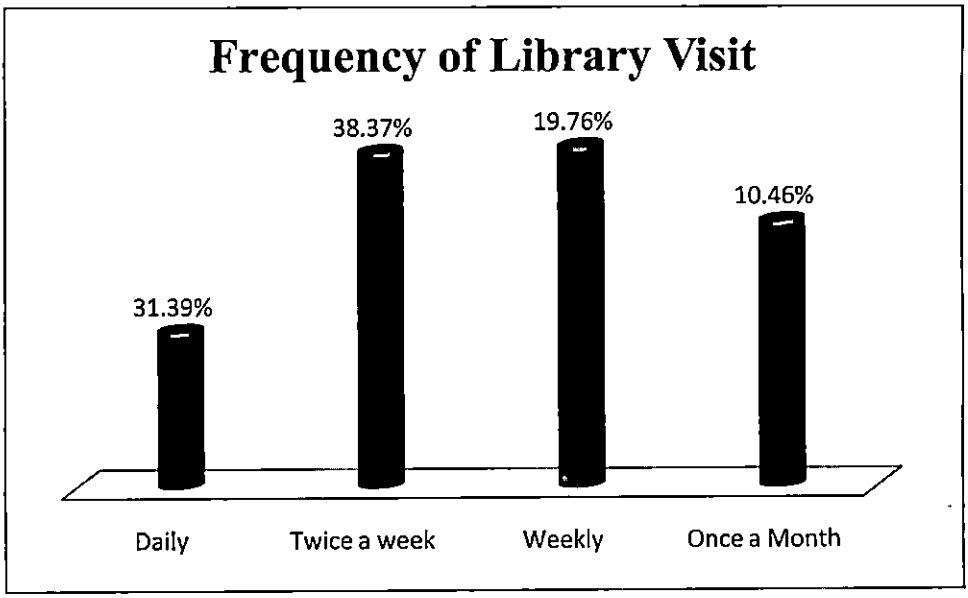


Table- 3 Preferred Place of Using

Access point	Total	Percentage
Library	31	36.04
Cybercafé	2	2.32
Home	9	10.46
Department lab	17	19.76
Hostel	26	30.23
Others	1	1.16

Source: Table compiled from the data collected from the questionnaire.

Table-3 exhibits the use of internet which could be accessed at various places within the university or outside the university. It can be revealed by the evaluation of the usefrom the library, home, and department lab, cybercafé inside the campus and from home. It has been found that 36.04% students access the internet were in the library, followed by 30.23% in hostel. 19.76% respondents access the internet in the department lab. The result depict that the cybercafé was used less in accessing the internet as compared to home.

Table- 4 Purpose of Browsing Internet

Purpose	Total	Percentage
Research	46	53.48
Communication	13	15.11
To prepare for class assignment	27	31.39
To consult E-resources	21	24.41
Lecture Preparation	9	10.46
Chatting	43	50
Entertainment	33	38.37

Source: Table compiled from the data collected from the questionnaire.

Table-4 reveals that 53.48% respondents browsing the internet forresearch whereas 24.41% respondents browsing the internetforconsult e-resources. Table also shows that 31.39% respondentsbrowsing the internet for prepare for class assignment. The Table indicates that 50% respondents of browsing the internet for chatting. It also indicates that 33.37% respondents browsing the internetfor entertainment whereas 15.11% respondents browsing the internet for prepare for communication.

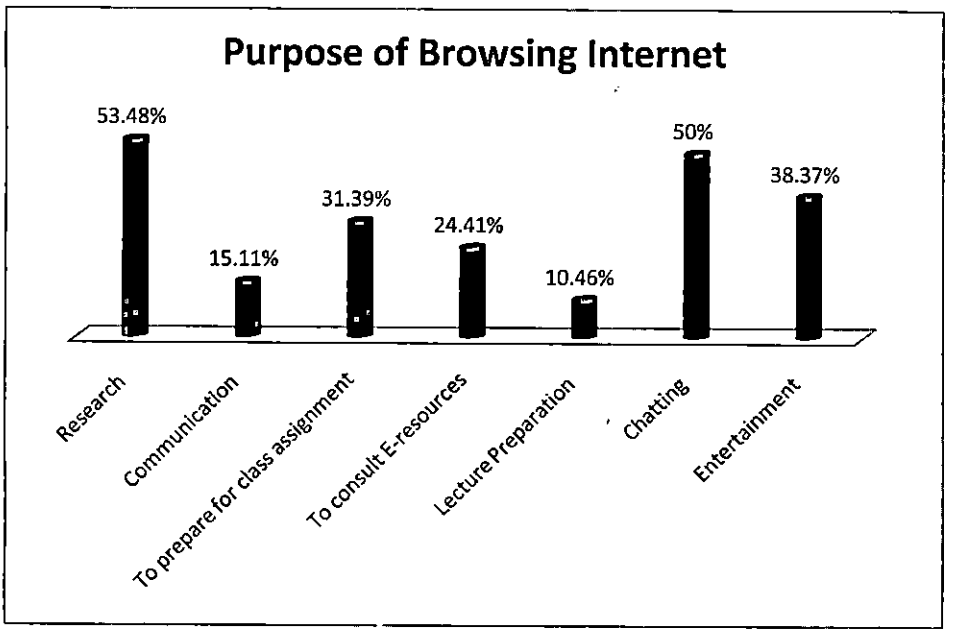


Table- 5 Time Spent on Internet

Time duration	Total	Percentage
Less than 1 hour	31	36.04
1 to 2 hours	24	27.90
2 to 4 hours	15	26.78
4 to 6 hours	12	13.95
More than 6 hours	4	4.65

Source: Table compiled from the data collected from the questionnaire.

In the University 36.04% respondents spend less than1hours per day, whereas 27.90% users spend 1 to 2 hours per day.2-4 hours' time is spend in using Internet 26.78% per day. 13.96% users use Internet for 4 to 6 hours per day

Table- 6 Use of Information Sources on Internet

Information Source	Total	Percentage
Conference Proceeding	13	15.11
E- Books	17	19.76
E-Journal	37	43.02
Reference books	12	13.95
E-Magazine	9	10.46
Databases	6	6.97
E-Newspaper	19	22.09
E-Thesis/dissertation	24	27.90

Source: Table compiled from the data collected from the questionnaire

Table-6 Users may use the Internet resources for a variety of reasons. The need of using Internet resources differs from one user to another. It can be seen from **Table 6**shows that E-Journals and E-thesis/dissertation both were the top priority of the University respondents. Majority of them 43.02% respondents were mostly using the E-journals under the internet resources while 27.90% were E-thesis/dissertation followed by 19.76% were E-Books use it with the requirement of Information need.

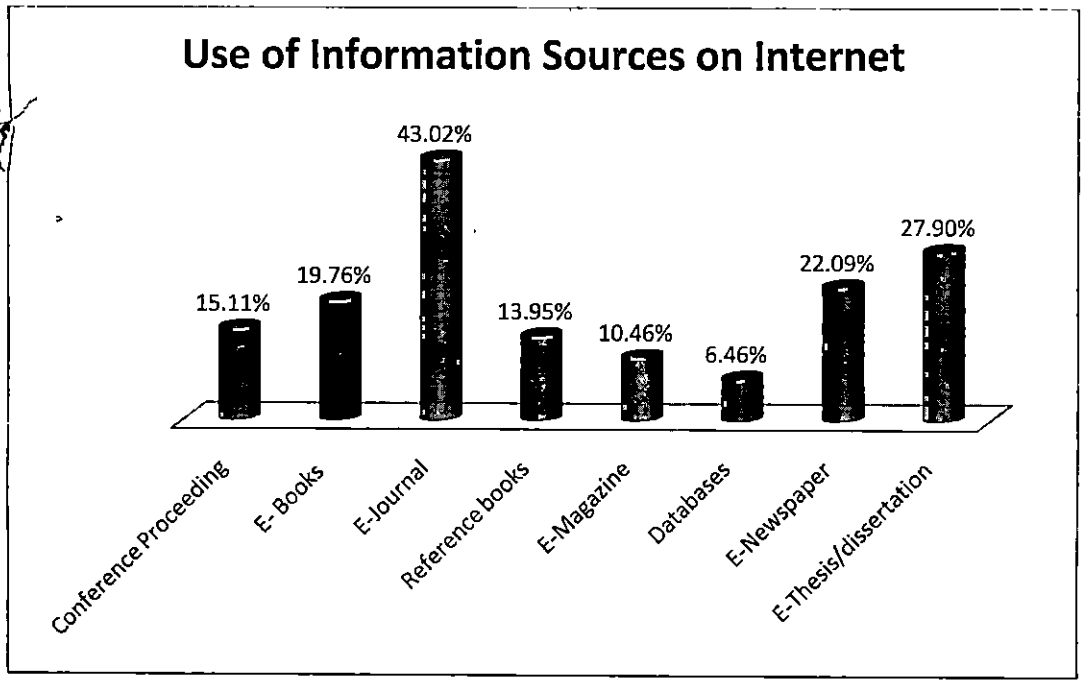


Table- 7 Awareness about Use of Internet Services

Awareness	Total	Percentage
E-mail	76	88.37
World Wide Web (WWW)	52	60.46
Search Engines	33	38.37
File Transfer Protocol(FTP)	7	8.13
Bulletin asked Questions	2	4.32
Frequently asked Questions (FAQ)	4	4.65
Remote Login	16	18.60

Source: Table compiled from the data collected from the questionnaire

Table 7 shows that 88.37% users use E-mail service on internet. Second most used service in the University is use of WWW. Search Engine is third used Internet service. In the University 18.60% users use Remote Login service. In fact respondents are not aware of the fact that all these services are being used only through WWW.

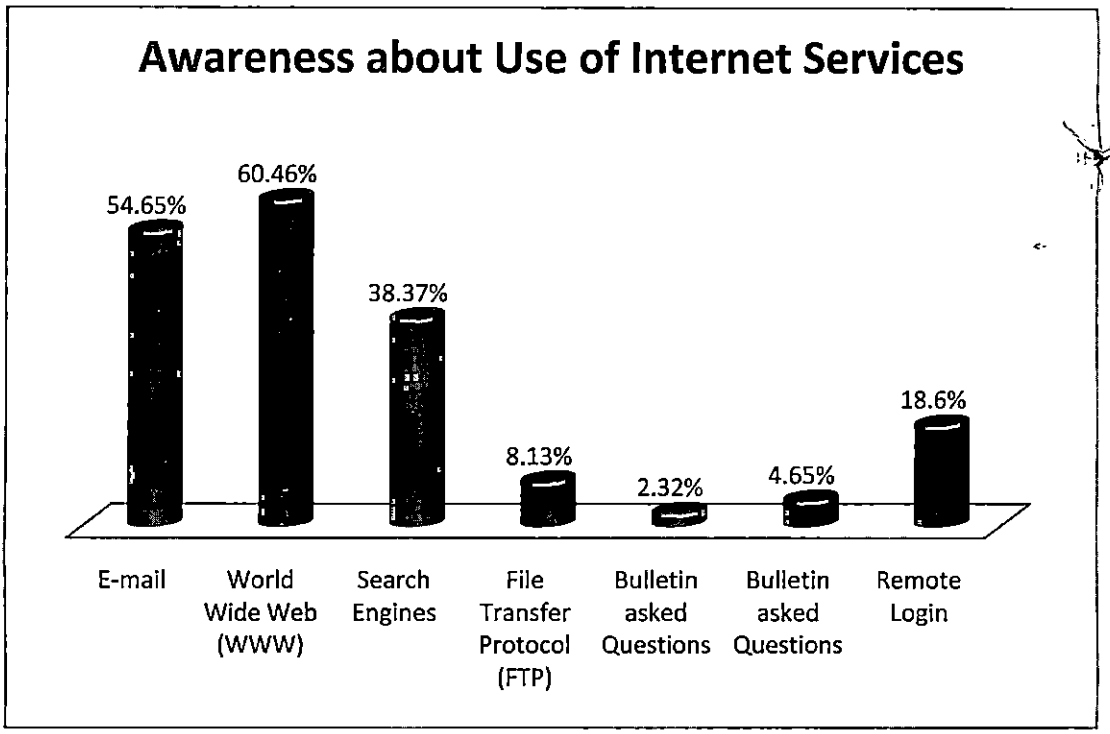


Table- 8 Problems Faced by Users in Using Internet

Lack of time	**19**	**20.09**
It is waste of time	0	0
it much information retrieved	13	15.11
Slow downloading/internet speed	27	31.39
Inform.ation overload	19	11.82
Time consuming	13	13.97
Failed to access full text	37	37.63
Uncomfortable in reading e-copy	14	25.80
Lack of IT skill	22	11.82
Lack of awareness	11	21.50
Shortage of Time allowed for using Internet	25	29.06
Others	3	3.22

Source: Table compiled from the data collected from the questionnaire

Table-8 reveals that 20.09% respondents faced problem lack of time whereas 11.82% respondents faced problem of lack of IT skill. The table also indicates that 15.11% respondents faced problem of availability of too much information retrieved whereas 37.63% respondents faced problems on internet of failed to access full text. Shortage of time allowed for using internet is the major problems faced by Internet users which are responded by 29.06 users in the University.

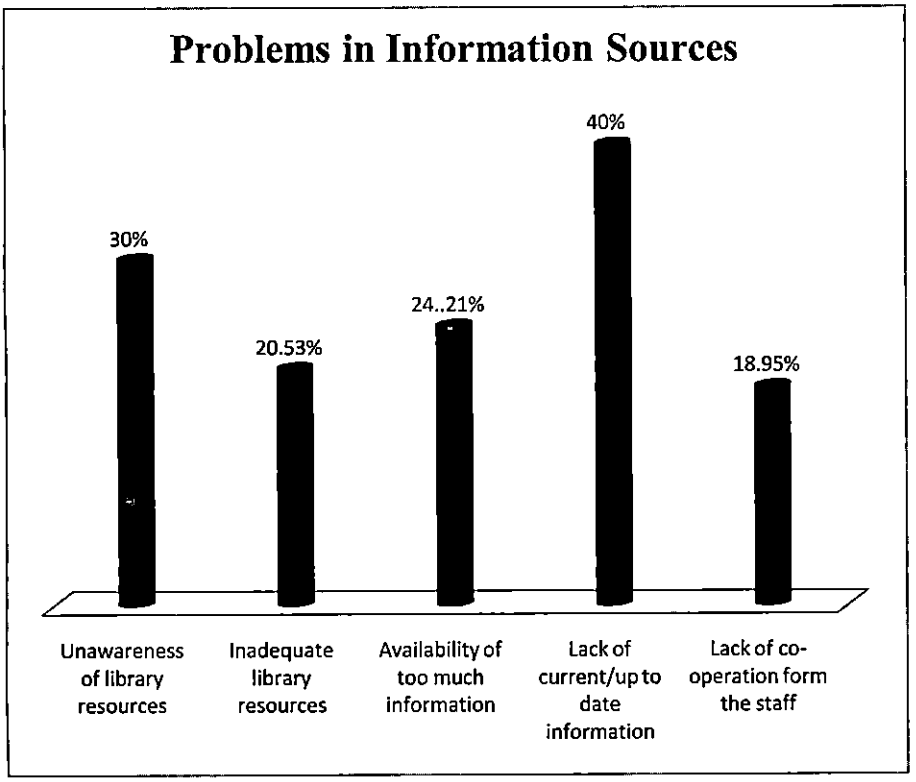


Table- 9 Methods of Learning Internet Skill

Methods	Total	Percentage
Own learning	49	56.97
With the help of friends	17	19.76
Trial and error	12	13.95
Help of library staff	8	9.30
Through Reading Books	0	0
Through Library Orientation	0	0

Source: Table compiled from the data collected from the questionnaire

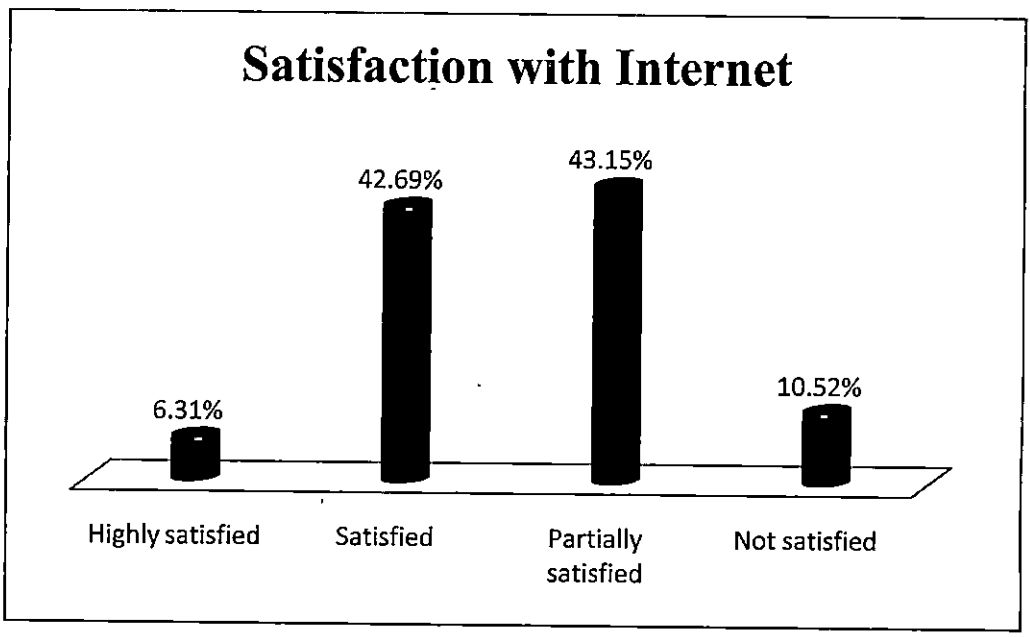
As per **Table 9** most of the users seek guidance from Own learning and 19.76 respondents seek guidance from with the help of friends. Results show that 13.95% users learnt Internet skill through trial and error method. 9.30% respondents in the University learn internet skill through library staff. Thus the library needs to arrange some sort of short term training/orientation program for the Internet users.

Table- 10 Satisfaction with Internet

Level of Satisfaction	Total	Percentage
Highly satisfied	12	13.95
Satisfied	37	43.02
Partially satisfied	21	24.41
Not satisfied	16	18.60
Total	86	100

Source: Table compiled from the data collected from the questionnaire

Table-10 shows 13.95% respondents were highly satisfied with the Internet facility whereas 43.02% respondents were satisfied with Internet. It also indicates that 18.60% respondents were not satisfied.



7. Major Findings

On the basis of survey, conducted in respective institutes, the Kurukshetra University following are the Major finding of the study. 31.39% of respondents visited the library daily .38.37% of respondents visited the library twice a week whereas 19.76% of respondents visited the library weekly.

10.46% respondents of NIT visited the library once in a month 36.04% of respondents prefer the use of internet in the library and 30.23% prefer the use of internet in hostel.

Main purpose of the using internet research, education, chatting entertainment etc.

Majority of respondents 53.48% of used the internet for research purpose while 50% respondents of used the internet for chatting whereas 24.41% respondents consults the e-resources.

38.37% of respondents use the internet for entertainment.

36.04% of respondents less than one hour spent time on internet followed by 1 to 2 hours spent time on internet. .

43.02% respondents of Kurukshetra University used e-journal information sources of internet while less number of respondents 27.90% respondents of used e-thesis/dissertation sources on the internet.

A majority of the respondents 88.37% were aware about internet services and 60.46% respondents were aware about the WWW while 38.37% respondents of used the search engine on the internet services.

31.39% of respondents faced problem slow downloading speed regarding problem in using internet and comparatively lesser number of 29.06% of respondents faced problem shortage of time allowed for using Internet while 20.09% of respondents faced the problems time consuming in using the internet.

43.02% of respondents were satisfied with the internet and 24.41% 0f respondent was partially satisfied while 10.52% of respondents were not satisfied with the internet.

8. Conclusion

The university libraries are valued by the users for their support in academic and research through Internet. The present survey was aimed to study the use

of Internet by the students. The main purpose of using Internet is research, communication and education. Chatting and entertainment others feature of the Internet. Most of the users prefer to use E-journals and online articles. They give least priority to find conference proceeding. Most of the users used the E-mail service. Awareness level about WWW and Search Engines among Internet is high .All services are less popular. The users encountered it much information retrieved, longtime taken in downloading, failed to access full text over Internet problems in using Internet.

Based on the findings, the following Suggestions are put forward to improve the Internet in University

1. Library should be organize training/orientation programme for the students

2. The speed of Internet should be increased so that the users can speedily access the information and utilize the information by the important work i.e. research work, education work, entertainment.

3. The library should make the users aware of the others Internet services also.

4. In the University has fixed 30 minutes time in one sitting for all the uses. This is not sufficient time use Internet and library should increase this time to at least one hour.

References:

1. Al-Ansari, H. (2006). Internet use by the Faculty Members of Kuwait University. *the Electrinic Library, 24* (6), 791-803.
2. Aquil, M., & Ahmad, P. (2012). Use of the Internet by Research Scholar and Post Graduate Students of the Science faculty of Aligarh Muslim University. *International Journal of Digital Library Services , 4*(2), 14-21.
3. Buhari, S. R. (2013). Internet Access and Use by Academic Staff and Students in a Nigerian Polytechnic. *International Conference on Communication, Media, Technology and Design*, (pp. 108-110). Famagusta – North Cyprus.
4. Hinson, R. (2006). Internet Adoption Final Year Students in Ghana's Oldest Business school. *Library review, 55* (5), 314-323.
5. Khan, S., & Dominic, J. (2009). Use of Internet by the Faculty Members of Engineering Colleges of Moradabad : A Comparative Study. *ICAL Library*

service , 43-57.

6. Kumar, A., & Parmar, M. (2014). Use of Internet by the Research Scholars & Faculty Members: A Survey Study of Kurukshetra University Kurukshetra in the Disciplines of Science. *IOSR Journal Of Humanities And Social Science, 19* (4), 01-15.
7. Kumar, R., & kaur, A. P. (2007). Internet Use by Teachers and Students in Engineering Colleges of Panjab, Haryana and Himachal. *Electronic Journal of Academic and Special Librarianship, 7* (1), 47-56.
8. Mahajan, P. (2007). Internet Use by Researchers: a study of Panjab University, Chandigarh. *Library Philosophy and practice, 8* (2), 1-4.
9. Veeramani, M., Paraman, V., (2011). Analysis if Information Technology (ICT) Application in Academic Libraries in Kuwait. *Library Hi Tech News.* 28(2), 9-14.
10. Mulla, K. R., & Chandershekara, M. (2006). Internet Users: Mysore University campus (India). *SRELS Journal of information Management, 43* (3), 243-263.
11. R.Bhatti. (2010). Internet Use among faculty Members in the Changing Higher Education Environment at the Islamia University of Bahawalpur: Pakistan.
12. Velmurugan, C., & Ramasamy, G. (2014). Utilization of Information Sources and Services through Internet among the User Community in an International School, Chennai, (TN), India: a Survey. *International Research: Journal of Library and Information Science, 4* (3), 87-98.

Author Biograprhy



Mr. Yeshpal Singh has done his Masters in Library & Information Science and pursuing M.Phil. from Kurukshetra University Kurukshetra. He has qualified the UGC-NET exam in Library & Information Science. He has published articles in national and international conference proceedings. He may be contacted at E-mail: sanwariarulezz@gmail.com

Giving Quality Services in a School Library

Dr Lopita Mukherjee

Librarian
ST. JOHN'S DIOCESAN GIRLS' HIGHER SECONDARY SCHOOL
17,Sarat Bose Road
Kolkata-700020
Email: lopitamukherjee2011@gmail.com

Sabita Kundu

Librarian: Techno India-Batanagar
Chakroborty Para, Batanagar, South 24 Parganas, Kolkta,
Pin: 700 140, West Bengal
bitu130506@yahoo.com
sabita.kundu@biemsindia.org

Abstract: The role of a school library in nation building can not be denied but their condition,as seen in past three surveys, is not very bright. Measures must be taken to give quality service. The Government, the boards of education, the school authorities and the librarians must try and develop the school libraries. The Government must monitor that there is library in every school, supervise the standard, provide fund, build model school libraries and organize seminars and workshops for school librarians. The authorities must keep library period for each class, form library committee, provide internet, computer and photocopying machines to the library and organize book exhibition to attract the students to the library. The librarian must try to inculcate reading habit in the students, must have proper cataloguing and classification system and must try to influence the Principal to achieve the betterment of the library.Social Media tools of ICT may be used to attract the students.

Keywords: School library, Three surveys, Boards of education, Library in every school, Library committee, Betterment of the school library, Social Media.

1. Introduction

Necessity of School Libraries

In every country the academic libraries particularly the school libraries have been considered, at least in principle, the part and parcel of education system. Without properly functional school libraries, the national aspirations cannot be achieved.

The importance and the utility of school libraries have been felt by education commissions, educationists and every person linked with education. The students

are the builders of the nation and development of a country depends largely on the educational development of the students. A school library has a very major role to play in this field. In order to satisfy the thirst for knowledge and to establish the foundation in each subject the school library is very much essential. Since the number of students in a class room is increasing day by day the classroom teaching may not be sufficient for a student; moreover an intelligent student may want to complete his lesson with several books of the same subject in addition to class room teaching. This leads to independent reference work, which is achieved by successful use of school library.A school library also develops independent reading habit of the student. S. R. Ranganathan stated, "The result of modern re-thinking on education is to make the library the heart of the school from which every activity in the school radiates and by which it all gets irradiated."[1]

1.2.Goals of School Library

1. School library creates library habits and a sense of library civics in students.
2. School library work influences the classroom work and vice versa.
3. It develops recreational and inspirational reading habit among the students.

It teaches the art of note taking and bibliography building

4. A school library attracts all students to itself based on every possible stimulus.
5. It helps in character building.
6. It acts as stepping-stone for using other libraries.[2]

2. Condition of school libraries in developing countries

A school library is part of a dynamic ever-changing system largely depending on the local socio-economical and cultural environment and over all educational systems prevailing in a country.

The actual state of affairs of school libraries in many parts of the world is debatable. In the third world countries like India, the school libraries seem to be largely neglected. Specifications and standards for school library organization seem to be lacking Lack of trained staff; adequate books and proper processing system are responsible for their miserable condition. Introduction of modern technology is like a dream and ignorance of library staff and the teachers of usefulness of library and proper utilization of the resources are adding to the misery. There is no fixed ratio between the number of books and number of students and complete

absence of any set standard was felt.[2]

3. Purpose

School libraries are most neglected sector of Library Science. It is very much necessary to discuss the problems and prospects of school libraries in national and international level in presence of eminent personalities.It is also beneficial to state the ways to improve the condition of school libraries.

4. Basis

The suggestions are based on the survey conducted in 2000 of 134 schools, resurvey of same schools in the year 2006 for PhD thesis and again a survey of 15 schools in the year 2015 for presentation in a conference. Several case studies were also carried on for writing several articles.. Experience as a school librarian for more than twenty years has also helped to write this article.

5. Ways to improve the condition of school libraries

How can the development of the school libraries achieved and who can take initiative? These have been in the following paragraphs.

5.1 The persons or organizations taking initiative

The school authorities in case of private schools and the Government or the Board of Education in case of government aided school and the Principal must take initiative to improve the condition of school libraries. A school librarian must be an energetic person always willing to try utmost to give maximum service in adverse condition by maximum utilization of available resources.

5.2 Steps to be taken by Government and the Board of School Education

Government must take steps to help develop the school libraries. They must realize that libraries should be attached to schools and they are to maintain a standard. Similarly the Boards of school education should also strictly monitor establishment and maintenance of school libraries as the most vital focal points in school education. The following suggestions may be implemented by the Government or Board.

5.2.1 Every School Must Possess a Library

According to IFLA / UNESCO School Library Manifesto 1999 "the school library

provides information and ideas that are fundamental to functioning successfully in today's information and knowledge based society. The school library equips students with lifelong learning skills and develops the imagination, enabling them to live as responsible citizens." [12]Hence there is no doubt that every school should possess a library. But merely possessing a library for just decoration is not desirable. The library should function to fulfill the need of the users who are the teachers and the students of the school.

5.2.2. Every School Must Have Trained Librarian

The Mudaliar Commission appointed in 1952, by the Government to examine the prevailing education system commented about the school librarian, "Efficient Library Service must be given by appointing highly qualified and trained librarian who would be able to guide interests of students, give due publicity to good books, old and new, available in the library, prepare and circulate booklist suitable for different grades, display 'blurbs' and cutting of book reviews on notice board, arrange book exhibition, conduct a group reading project and consult in selection of good books."[3]Trained librarian should be there in every school library be it a Secondary, be it a Higher Secondary.

5.2.3. Standard

Certain standard should be fixed for the school libraries in respect of number of books, types of books, number of staff and services to be offered. A minimum number of books should be fixed for a minimum number of students and there should be a ratio of student and books. The books should be of different types not merely a number of useless books for increasing the stock. Absence of standard had resulted in variation of condition and services of the school libraries.

5.2.4. Training for the Teachers Looking After the Library

In many schools the teachers looked after the libraries. The teacher librarian, as viewed by Ralph, does not require an extensive knowledge of classification and cataloguing as the main emphasis is "on teaching pupils to use a library rather than on library techniques in its narrower sense.[5]They must know principles of school library administration, technical processes in school library necessary for its efficient functioning, how to use basic reference books and how to motivate the reading habits of the children. They can be given practical training in a school library.

5.2.5.Workshop / Seminars for School Librarian

Very few workshops were arranged for the school librarians. Government, School Authorities, Heads of the Schools or persons linked with school education can arrange workshops or seminars on school libraries. This will enrich their knowledge, as the librarians will be able to meet each other, exchange their views and solve common problems together.

5.2.6. Adequate Finance and Basis of Fund

The source of financial support for library in case of Government aided or Government schools are nominal library fee and irregular Government Grant. In case of non Government schools the funding depended on the will and whim of management or the Head of the institution .The `library fee' collected by the schools are not always spent for library development. Efficient functioning of a good library needs fund. The school authority must be fully aware of it and they must provide the library fund needed for efficient functioning. A fund calculated on the basis of number of students must be fixed and Government should provide this money for the Government Schools and Government aided schools and motivate the private school authorities to provide the same amount of money. Firstly a capital grant should be provided for basic collection without which a library cannot function. Recurring grants for purchase of books, periodicals and other library materials should be provided annually. The grant sanctioned for the library should be spent for library development only.

5.2.7. Library Fee and Fine

In most of the schools library fee was collected from the students. In case of Government or Government aided school library fee was nominal and non Government schools charged handsome amount and it varied from school to school. The school may collect a library fee, which may be fixed keeping in view the economic condition of the students. It should not be too much or to little. However, late fine should be collected and fine for loss of library cards must be imposed. But the fund collected from library should be spent on library only. It should not be used for other purposes

5.2.8. Model School Library

Government may construct some model school libraries which will be regarded as examples to other schools. The authorities and the school librarians will try to develop their school libraries in that way.

5.2.9.Inspection and Supervision

Dearth of any committee for supervision of school libraries have resulted in discrepancy in stock, staff, processing and services offered by the school libraries. A committee may be formed by the Government for monitoring utilization of grant, advising the Government regarding amount of library grant and on observance of standard.

There should be some arrangement for inspection of the school libraries by some officer of the education department annually. It is to be also seen whether the library grant is really spent on library development and the number of books and periodicals purchased annually. The general condition of the library is also to be ascertained.

5.2.10. Library Oriented Syllabus

The syllabuses of secondary, higher secondary and even for graduation courses are framed in such a way that no reference studies at library is needed. The syllabus is rather text-book oriented than library oriented. This system should be changed and special credit should be given to those students who will prepare the answers after serious library work.

5.3 Steps to be taken by the School Authority

The school authority must realize the importance of school library and must try to provide quality service to its customers. In order to do so they may consider the following –

5.3.1. Book Selection

Book selection must be done properly, with the help of teachers, students and Principal. A register should be maintained to note down the request for purchase of books throughout the year. Subject teachers must be consulted for buying subject books and English and Bengali teachers for selecting storybooks. The students who borrow the books regularly may be consulted as their opinion will be valuable, the importance given to them will encourage their reading habit and other students will try to follow them to get importance. Books possessed by these libraries should be of three categories, namely (1) informative books, (2) recreational books, and (3) inspirational books.[6]

5.3.2. Library Committee

A library committee should be formed consisting of the Principal, librarian, some of the teachers and interested students. The committee will help the librarian in major decision taking process. The demands for requisitions forwarded by a

committee will be stronger. The committee will know the condition of the library and will enlighten the other members of the school about it. Finally, book selection, periodical selection and other activities will be more democratic in nature, not wholly depending on the whim and will of the librarian.

5.3.3. Library Hours and Library Period

The library should be open during school hours for the students and the teachers. The librarian or the library staff should be there instead of going to the classroom to teach or to do substitution or examination duty. It is better to open the library half an hour before school and close it half an hour after the school gets over so that the interested students may come, as they do not have free period. It is better to have a separate break time for the library staff, avoiding the break time of the school for its maximum use.

Each class must have a library period or at least some fixed time, once a week, to come to the library. If the class consists of a large number of students half the class should come at a time otherwise the quality of service will be not up to the mark.

5.3.4 Technological Advances, Photocopying Machine

Computer and photocopying machine should be there in these libraries.

5.3.5. Non-book Materials

The school libraries must have non book non-book materials like CDs, cassettes etc along with maps and charts.

5.3.6. Internet Connection

There should be Internet connection in every school libraries as it plays major part in dissemination of information.

5.3.7 Book Exhibition

Book fair or book exhibition by the publishers should be encouraged by the school authority as the display of colourful books will make the students eager to possess books and read books thus inculcate reading habit in them.

5.3.8. Meeting of Librarian and Teachers

A major set back of a school library is the librarian's total ignorance of curriculum, instructional method and teachers' ignorance of the library and its resources. This problem can be solved if the teachers and librarian sit together once a month. The teachers may inform the librarian the topics they will teach or the project works that would be given and the librarian can direct them to the library resources that

can be provided for the purpose. In addition to this the librarian must give the different subject teachers the list of books which are there in that subject.

5.3.9. Cultural Programmes

To attract the students to the library the cultural programmes of the school may be organized from the library. This will bring them to the library and they will automatically use the books which are needed for these programmes like books for drama, books for songs and poems, books for General Knowledge etc and gradually will develop the habit of choosing and using books.

5.4. School Librarian

A school librarian should be an energetic personality, full of new ideas who will be able to attract the students to the library. He / She must have soothing and charming personality and must be able to guide the students to the required books. A school librarian may play a major part in improving reading habits of the students. It is from him/her that the students learn the library civics. A student enters the school library at a very early age. An able librarian with necessary help and guidance may turn him towards libraries throughout his life. A librarian may take the following steps for this purpose.

5.4.1. Improving Reading Habits

Serious measures should be taken to develop reading habits of the students. Story telling, as suggested by Ranganathan, with the help of music may be arranged. [1]

Dramas written by eminent writers may be staged during the cultural programmes of the school. This usually attracts the students to that book and to that author. Directing the students to write book review and reading out the best one also helps. The students who have taken the maximum number of books from a section may be given a prize at the end of the year.

5.4.2.Proper Cataloguing and Classification System

Proper cataloguing and classification system should be adopted so that the students will be habituated with them. If the fund, time and budget do not permit the librarian to adopt proper technical means there should be some sort of arrangement so that the books can be traced.

5.4.3. Student Background and Library Service

The type of library service rendered may be determined according to the economic condition of the students. In most of the aided schools the students come from poor family. They do not have enough money to buy the textbooks. So preservation

and distribution of textbooks must form important library service in these schools.

In well renowned English medium schools the students can buy the textbooks as they come from middle class or upper class family. So, textbook preservation is not too important in these schools. Rather encyclopedia and other reference which the students often need for their project work are more important here. But it may be noted that the students of these schools also need text books other than the book prescribed by their school as a careful scrutiny of number of books in a subject strengthen their basic knowledge of that subject, and the students of the aided school may also be provided encyclopedia if the `budget permits.

5.4.3. Approaching Benevolent Organization andPersons of the Locality

The school librarian and the Principle may approach benevolent organizations, or the educationist or leaders of the nations may make a general appeal to them. The school library may also approach the ex- students or benevolent persons of the locality for help.

5.4.4. Library as Information Center of School

The library may be made an information center of the school. Various information delivers to students: like from when the examination or vacation will start, the last day for submission of project work, the sports day and annual function day andmuch other such information may be generated from the library.

5.4.5. Students Taken to Various Libraries

The students coming to the schools libraries did not know how to behave in the library and how silence must prevailed inside the library. Most of the students did not know the library civics..They may be taken to reputed libraries from where they can know what they are expected to do in the libraries.

5.4.6. Influence on Principal / Management

Generally the Head of the institute does not want to fulfill all the demands of the librarian. It is the job of the librarian to make him / her realize the active role library can play in teaching and learning. He / She must have the personality and the power of reasoning necessary for this purpose.

5.4.7. Influence on Teachers

It is the librarians' job to make the teachers acquainted with the library stock and make them realize how they can be useful for proper utilization of library resources.

6. ICT in school libraries

With the arrival of ICT libraries are changing in terms of everything in terms of functions, resources, or services, as a result of which the traditional libraries are shifted to automated libraries and finally to Digital Libraries. The e-book, e-journal, e-news, e-marketing etc make millions of users throughout the world. To keep pace with the rising digital environment the libraries are responding optimistically. They are combining their traditional services with internet based services. The academic libraries are responding to these changes. The school libraries are rather slow to respond to these changes.

6.1. Implementation Plan for Modern Technologies in School Libraries

6.1.1.1 Library Automation

A school library must be automated. Suitable software should be used and all housekeeping operations should be automated.

6.1.2. Internet

Internet must be there and it must be used to avail e-books, e-journals, catalogues, encyclopedias, abstracts and much other information.

6.1.3.Main Server and terminals

There should be a main server connected to several users' terminals. Terminals may be placed outside library such as in Principal's room, office etc information exchange can be done beyond the four walls of the library.

7. Main Services

7.1. Free online journals

The teachers and students may have electronic access to e-books and free online journals and protocols for the laboratories.

7.2. Free online books

7.3. Free encyclopedias

7.4. Free Newspapers

7.5. Free online dictionaries

7.6. Free online catalogue services

To save the time of the reader the important websites which are useful for them can be written on the board.

7.7. Question Bank Cell Service

There is great demand for previous years' question paper and model question papers before examination. These must be kept in an organized way and provided on demand.

7.8. Helpline Centre

The library may act as Helpline centre to students. The librarian may give personal service to each student helping him to find documents answering his interest pin-pointedly, exhaustively and expeditiously.

7.9. Telephone or Cell phone service

If the user asks any information through telephone or mobile phone the librarian may give him proper answer and guidance.

7.10. Online enquiry service

If the user wants any information for any project or competition through online it should be answered.

7.11. E-mail service

This service has got advantages of answering in details than what could be possible at a busy reference desk. It provides the librarian the time to think about the query properly, to consult his colleagues or subject experts, if necessary.

7.12. Chat based service

Announcements for tests and internal competitions and many other things may be sent through instant messaging.

7.13. Inter Library Loan service

The reference materials, model question papers and other materials can be shared in this way.(Sheik,2012)

8. Social Network

In the era of ICT social media is playing a lead role. The use of social media is very popular among the youth. If the school libraries use social media they can attract more students. The school library may use blogs to express librarian views and opinion, or to express teacher's opinion about any book, it may be story book, or subject book. Librarian can also use Wikis and You Tube for giving instruction. Wiki can also be used for book recommendation, cataloguing and tagging by the users.[10]

8.1. Blogs

Blogs can be used for academic libraries in various prophases – it provides the opportunity for conversation and communication from home to library. It can be used for library marketing. It can be used to improve the cataloguing department. Its helps to develop writing skill, assists in deep learning.

8.2. Face book

Face book is very popular among the students and can be used successfully for various purposes. New Arrival Display both photograph and names, display of list of books for any project work given to a particular class, any particular information regarding issue or submission of books may be given here. To the school libraries acceptance of Face Book create a new type of rapport with the users and increase consciousness of the collection among the users.

8.3. Flicker

It allows storing, editing, sharing, generating products with images, defining forms of access to images, and maintaining contact with online photography community. [10]Photographs of prize day, annual function, RabindraJayanti celebration, Christmas Programme and similar types of programmes can be shared by flicker.

Flicker enables the libraries to expose their collection of photograph and other images to the world.[10]

8.4. You Tube

School libraries can share Videos of the above mentioned programmes. They can also post any videos that they think will be useful for character building, general awareness or any other of such type.

8.5. Instant Messaging

It is a way to communicate with the students. This is specially effective for the students who are shy and can not approach help desk or other help mechanism.

8.6. Wikis

Wiki is a page or collection of Web pages designed to anyone who accesses it to contribute or modify the content.(http:searchunified, 2016). This can be successfully used to engage the students to write book reviews, preparing list of book they want or list of book school is buying so that they can give suggestion and various such other purposes.

9. Conclusion

The school library plays a great role in nation building as it strengthens the basic foundation of the youth in different subjects. Proper education system should be devised in such a way that the school library can play central or pivotal role in the education system. The educationist, the library scientist and every knowledgeable person of the society must realize the importance of school libraries and are expected to offer new ideas and guidelines. There should be seminars, workshops, and meetings organized all over the country to bring revolutionary changes in the school libraries. It must make room for Modern Technologies and must act as the heart of the school from where all other activities generate.

References:

1. Ranganathan, S.R. *New education and school library: experience of a half century.* Delhi: Vikas Publishing House, 1973.
2. Mukherjee, L. (2009). *An Evaluative study of School Libraries in and around Kolkata.* PhD thesis. Kolkata: Calcutta University
3. IBID
4. India. Ministry of Education (1953). *Secondary Education Commission; A report,* Delhi: Manager of Publications.
5. Ralph, R. G. (1949)*The Library in School. London*: Turnstile Press.
6. Trehan, G. L. and Malhan, I. V. (1980). *School Library Management.* New Delhi: Sterling Publishing Limited.
7. Sheikh.Jahanara (2012).*Innovative Challenges in Information Services: Changing Paradigm for Sustenances of L I Centres in Digital Era: A case study for Government COLLEGE FOR Men, Kurnool, Andhra Pradesh.* Innovative Challenges in Information Services: Changing Paradigm for Sustenancesof Library & Information Centres in Digital Era. Kutub Publication. New Delhi.
8. social-media (2016 March) Retrieve from http://whatis.techtarget.com/definition/social-media
9. Definition (2016 March)Retrieve from http://searchunifiedcommunications.techtarget.com/definition/Skype

10. manifest(2007, April) Retrieve from hhtp://www.ifla.org/vii/s11pubs/manifest.htm.

Authors Profile



Dr. Lopita Mukherjee is the librarian of St Johns' Diocesan Girls' HS School. She is working as a school librarian for more than 20 years. She has Masters Degree in Bengali and Library and Information Science and PhD degrees in Library and Information Science. She has life Membership of Asiatic Society, MALIBNET, ILA, IASLIC and BLA. She has attended more than 30 national and international conferences and workshops and has written over 20 articles in national and international journals and books. She has gone to Srilanka and Mascot to participate in a conferences. Email: lopitamukherjee2011@gmail.com



Sabita Kundu is the librarian of Techno India Batanagar. She is now working as a college librarian. She served more than 20 years in library and information field. She has Masters Degrees in Bengali and Library and Information Science. She has M.A in Bengali, B.Ed and Library and Information Science and pursuing PhD degrees in Library and Information Science. She has attended more than 30 national and international conferences and workshops and has written over 20 articles in national and international journals and books. E-mail: bitu130506@yahoo.com

Indian Statistical Institute Library- One of the Living Learning Libraries: Maintaining and Preserving Past For The Future- A Survey

Sabita Kundu

Librarian: Techno India-Batanagar
Chakroborty Para, Batanagar, South 24 Parganas,
Kolkta, Pin: 700 140, West Bengal
bitu130506@yahoo.com
sabita.kundu@biemsindia.org

Abstract: Guidelines of standard is the route of executing and developing for entire library, discussed by IFLA, UNESCO and ILA. For developing country it is deferred from developed and under develop nation. Indian Statistical Institute (ISI) Library- one of the Living Learning Libraries is research and statistical field. In beginning it was the brain child of Prasanta Chandra Mahalanabis. Now its employ standardized procedures, as far as possible, based on previous records. The nature of Standards should indicate the extent of academic and library in-depth study to which professional members of staff required in the library, and the part is involved in the educational staff should play in other work, programmes of the institution, in e.g. research and education. ISI library started more than one great project over and done with preserving past for the future under the supervision of Dr. Nibadita Gungaly , Deputy Librarian. Apart from ISI library provides information through Major Socioeconomic Databases. Remote Access, Internet through Virtual Private Network (VPN).

Keywords: Standard of entire library, ISI Library, In-depth study, Preserving past for the future, Major Socioeconomic Databases, Remote Access and VPN.

1. Introduction

Maintaining Standardization of document is an irregular idea which interrelated with all related part of organization. The Guidelines of standard for library provide advice and guidance to library and information managers on how to plan, build and maintain public libraries to a high quality. It is the route of executing and developing technical standards based on the consent of different parties that include firms, users, interest groups, standards organizations. Standardization can help to make best use of compatibility, interoperability, repeatability; security, and so on.

2. Standardization recommended by IFLA

In 1973 International Federation of Library Associations (IFLA) has given attention to the application of the standards to developing countries. It may be useful to indicate some of the guidance given to developing countries or which is particularly applicable to them. In some countries library services have been provided on a national basis. This method may be especially appropriate in a developing country where a large managerial unit is mainly important, if limited resources are to be used to the greatest extension.[1]

In 1957 the Indian University Grants Commission appointed a committee, under the Chairmanship of Dr S. R. Ranganathan. The document containing the report, published in 1965, University Grants Commission (Report of the Library Committee, University and College Libraries, New Delhi, 1965). Quantitative standards were given for library Finance, Book section, periodical publications; documentation, technical, reference, circulation, maintenance, administration Inter-library loan, and staff in respect of which it was claimed the administration of the universities needed to adopt a more informed attitude. [2]

3. Standardization recommended by UNESCO

Standards should prescribe the regular collection of selected statistics, on a common basis as recommended by UNESCO, so that the extent to which the service measures up to recommended national or international standards can be established, the use made of the library studied, and effective comparisons made with other libraries. General Standards should indicate: That all libraries should be housed in premises suitable for the efficient performance of the library's various functions. That new library premises should be planned on a functional basis (aesthetic and other considerations being secondary), should be flexible and, while being built to satisfy foreseeable needs, should be capable of extension.

This applies particularly in some developing countries. It will usually be necessary, however, to supplement the country's own output by acquiring books published in other countries and in other languages, particularly in technical subjects. [2]

4. Standardization recommended by ALA

The document was first published by the ALA Standards Committee in 1983, after some portions had been approved by Council at the 1982 Annual Conference. It has been revised several times, most recently by the Standards Review Committee in

2001. The current version is the same as the 2001 version, except that references to the SRC have been removed. SRC was discontinued by Council at the 2003 Annual Conference. At the same time, Council ruled that the Manual should continue. It is accessible on the ALA website (see the Section on Professional Tools, Subsection "Standards and Guidelines"). As part of the annual updating of the ALA Handbook of Organization, the ALA Associate Director for Communications and Marketing will contact the chairs of standards committees in the divisions to remind them about the manual and to ask if any part of it needs revision. The famous library of Indian Statistical Institute (ISI) has maintained standard. From the beginning (1931- till date) ISI library serves researcher, academician, economist, planner and every corner of society. [3]

5. ISI library, brain child of Prasanta Chandra Mahalanabis

As past history of ISI library, we may say that it was the brain child of P C Mahalanabis

Professor Mahalanobis was involved in its growth and development science its beginning. He initiated statistically research in the early twenties in the Presidency College, Calcutta which later developed into the Statistical Laboratory and finally led to the establishment of India Statistical Institute in 1931. The Library was located in small room adjacent to professor Mahalanobis room at the Baker Laboratory of the Physics Department, Presidency College, Calcutta. During the foundational years, the library's collection mainly grew though gifts, donations and exchange of publication with Sankhya: Indian journal of statistics. Early contact with governments, learned societies, research institutions throughout the globe enabled the library to develop a rich and wide ranging collection of books, scientific journals, survey reports, data books in almost all the major languages of the world. Now this library is regulator of statistical world on the basis on previous document which was preserved by library.[4]

6. Standardization of ISI

Libraries should, as far as possible, employ standardized procedures, e.g. in cataloguing and classification. Standards should be such as to permit input to and access to the main international mechanized bibliographical information services. Based on records for (a) books in open shelving and limited access or closed book stacks, and for storage of other material; (b) readers in reference libraries, reading rooms and other parts of the library, allowing to type of place (seats only, large or small tables, carrels, etc.); (c) staff and work methods; (d) amenities (e.g.

lavatories, refreshment facilities) and services (e.g. air-conditioning); (e) other library purposes, such as exhibitions, lectures, meetings, classes, staff training; (f) provision for acceptable movement of users and staff during periods of maximum use. [5]

7. Model Standards of ISI for Library Service

ISI Library is an Academic Library that provides research based information, to researcher scholar, economist and planner. It is delivering, in co-operation with other libraries, since library and information services for the benefit of the students and staff as an essential part of academy; it is facilities for study and research. It should also make their facilities available, under suitable conditions, to other serious scholars and research workers. The library should be administered by a librarian directly responsible for library service. The library should be under the decision-making control of a librarian of high qualifications and suitable experience. Services Standards should indicate that: The library should provide:

(a) Reference collection of the nation's literature complete for current publications through legal deposit and as complete as possible for earlier literature;

(b) Major reference collection of materials in Indian and foreign languages;

(c) Preserving document in up-to-date technology

The lending (apart from specially created national lending libraries) part of ISI library should be controlled, no material provided under legal deposit being lent, except duplicate copies (which was delivered to relevant colleges). The library should issue publications relating to its work and library services generally. 6 http://www.isical.ac.in/~library/#

8. ISI provide independent study by printed and non-print material

Standards would be required indicating the nature of the library's services and how far the library should directly assist other libraries, with the supply of books and other material. A library committee with advisory functions only should be appointed consisting of representatives of the teaching staff and students. The library should co-operate fully with other university or college libraries and with the national and other libraries so as to secure the maximum concentration of bibliographical and other resources. The library should provide accommodation for independent study by students and research workers, together with the printed

and other material required for their work and cultural development. It should provide instruction in the use of the facilities offered by the library. It should provide for the library needs of academic staff and other appropriate persons, including industrial firms and organizations and members of professional groups. It should provide a central catalogue of library holdings and central acquisitions and processing, and library materials should be readily available, with as much open access as possible. The library should provide access to materials in all forms, books, manuscripts, pamphlets, periodicals, newspapers, music, maps, prints, engravings, as well as other means of communication, such as micro-film, gramophone records, tapes, computerized data, bibliographical aids, such as lists of current and older publications, catalogues, indexes, etc.

9. ISI furnishings attractive and comfortable for users in-depth study

The nature Standards should indicate the extent of academic and library in-depth study to which professional members of staff required in the library, and the part should be involved in the educational staff should play in other work, programmes of the institution, in e.g. research and education. Use of the library and in access to bibliographical and other information, and in other ways. The importance of making the library buildings and furnishings attractive to and comfortable for users, and of giving attention to such features as good lighting, temperature, ventilation and noise control. Ways of measuring areas of accommodation required for different purposes, based on figures for: (a) books in open shelving and limited access or closed book stacks, and for storage of other material; (b) readers in reference libraries, reading rooms and other parts of the library, (c) staff and work processes; (d) amenities (e.g. toilets, refreshment facilities) and services (e.g. air-conditioning); (e) other library purposes, such as exhibitions, lectures, meetings, classes, staff training; (f) provision for adequate movement of users and staff during periods of maximum use. Each country-or group of countries-will need to work out building standards according to the particular local circumstances which are likely to affect the total amount of space and proportions required for each purpose. [6]

10. Preserving past for the future

ISI library started a project under the supervision of Dr. Nibadita Gungaly , Deputy Librarian (MA, M.Lib and Doctorate in sociology. E-Mail nibeditagaguly56@gmail. com) who initiated to build up historical document preserved in microfilm and microfiche in a Unit of ISI Library.

a) She started it in 2006 and published.

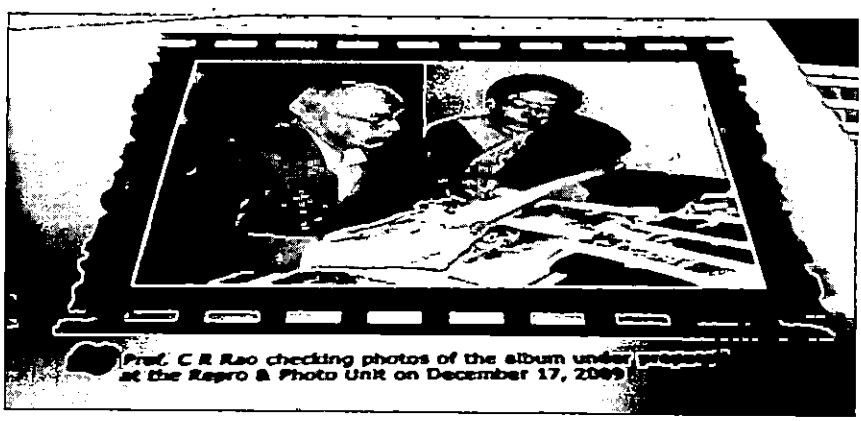
When she first took additional responsibility along with other jobs and took as in-charge of the Reprography & photography unit of the Library, she edited a photo document on eminent Professor C.R Rao, world famous statistician. Professor Rao is very enthusiastic. He is near about 95 years old now. He encouraged Dr. Nibedita. Ganguly to select the relevant document from huge micro film gathering and published an Album on Dr. Professor C.R. Rao. She never violated the copy right norms. Relevant documents are attached in this paper. [9]



Prof. C R Rao looking at the photographs exhibited at the Repro & Photo Unit on December 17, 2009



Prof. C R Rao looking at negatives at Repro & Photo Unit on January



Prof. C R Rao checking photos of the album under preparation at the Repro & Photo Unit on December 17, 2009

b) She also supervised a long project which also started in 2015. The project is edited by her. She tried to build up a history of wealth of ISI and intended to deliver it web technology and serve it in hard format to renowned academic library and others.

C) ISI library has the archive of personal letters of P.C Mahalanabish with famous personalities of contemporary time around the world. A project taken by ISI library to preserve these letters related to Royal Society. All documents are being processed in D-Space under her guidance to be kept in Archives.

11. The document of past should be presented for future

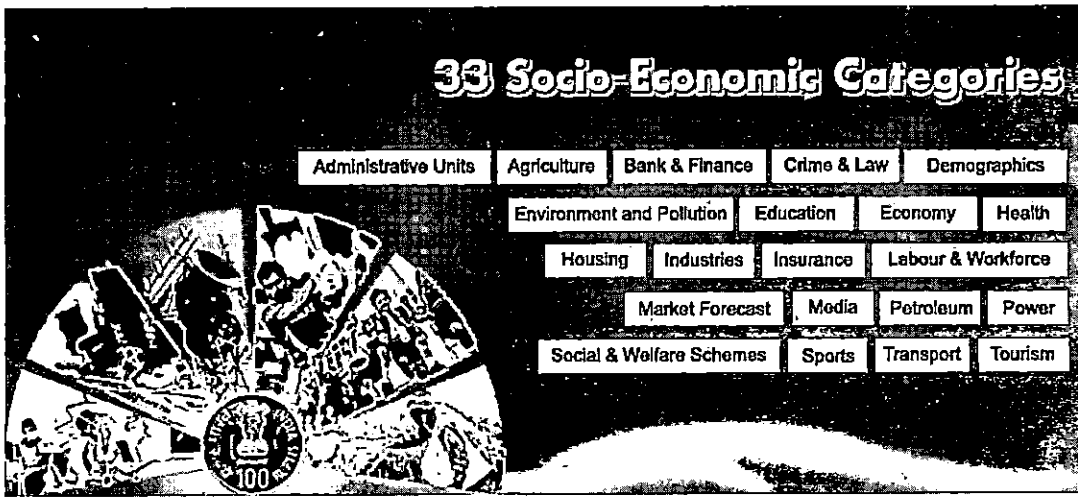
Now all institute run by small number of employees (basically in Government concern) as the vacant post are not filled after retirement of libraries personnel, but the eminent and old libraries have huge number documents due to information explosion. Every single document/ information may be required at any time by any person. If the documents are not preserved properly all become value less. If all are not preserved through proper technology and the treasurable document managed by less number of staff, the historical value is diminished.[6]

12. Others Activities of ISI Library on the basis of own past document at present.

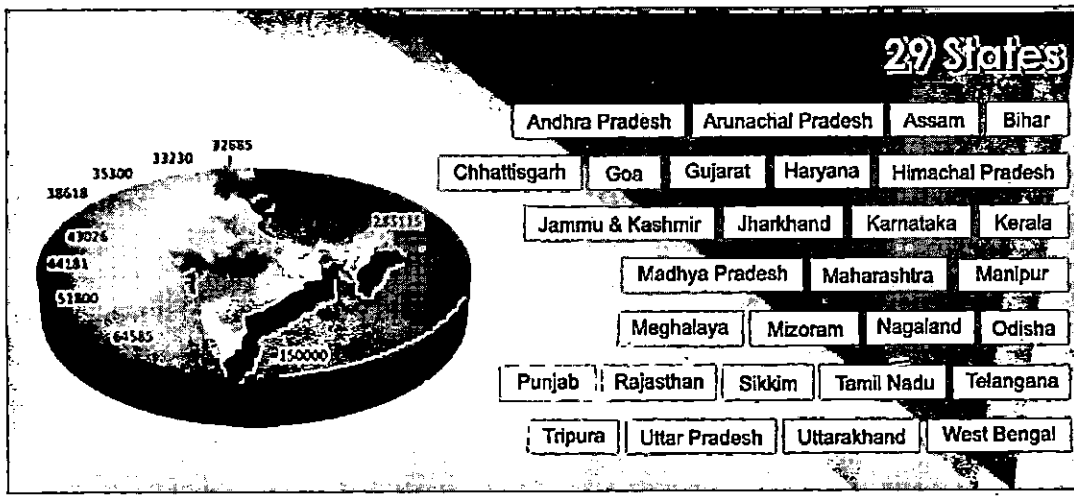
ISI library serve online based service which was primary document of library from beginning. They preserving past for the future and render

13. Major Socioeconomic Databases (Starting year from approx. 2002)

i) State of India-CMIE is a wide-ranging assembly of state-level statistics. The data is sourced from each of the 23 major states and 12 minor states or union territories for economic & statistical research.



ii) Indiastat.com provides secondary level socio-economic statistical data about India and its states, Region and Sector on more than 35 variables from 2004-5 for economic & statistical research.[7]

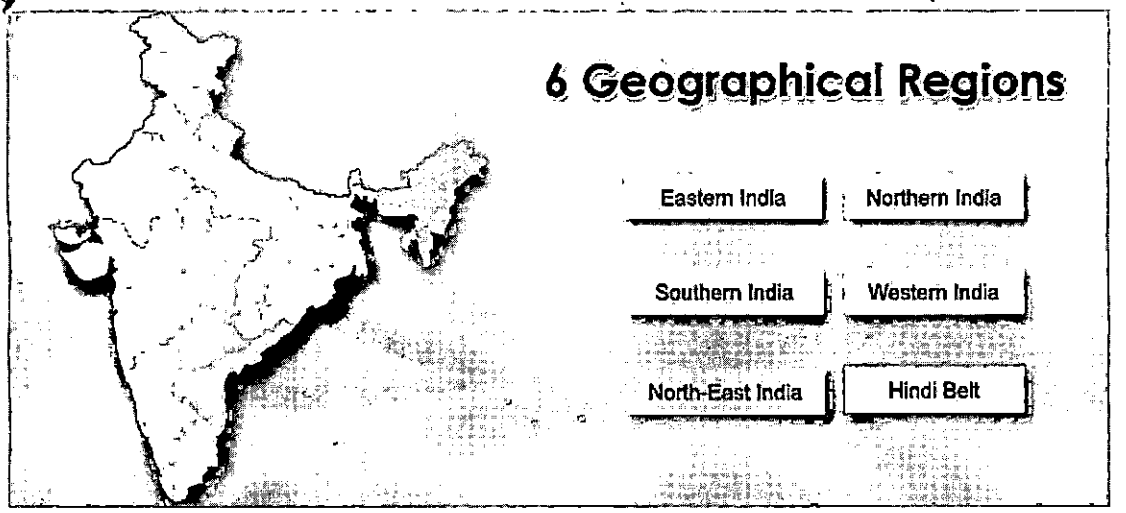


iii) CEIC Databases is delivering a wide range of macroeconomic and industry-specific time series data for India. The database covers over 163,000 time series with historical data from as early as 1951 and offers a wide range of dataset frequencies, from daily to annual mainly used by economist. [7]

14. Remote Access (Starting year 2014-15 and continue)

Home/off-campus access means that you can access the library's electronic journals, rare book converts into e-books, and makes databases, etc. from any

computer - whether are at home or abroad. As an employee, full time student, research scholar of the Indian Statistical Institute, can get home/off-campus access to the electronic resources the Central Library, Indian Statistical Institute subscribes to.[8]



15. Internet through Virtual Private Network (VPN).

Starting year of VPN is 2000 Central Library is accessible via VPN from other Centres.

16. Data Service

ISI provides data to user in multiple forms and multiple ways.

17. Centre for Research in Micro Census Data

Central Library of Indian Statistical Institute Library, Documentation and Information Science Division are always ready to help user as per their requirement about research based works.

18. Conclusion

In short we may say standards should: Stress the vital importance of staff adequate in numbers and quality from the highest professional to the lowest clerical and manual worker, since without them the most comprehensive collection of

library materials is almost useless. Define the minimum personal, educational, professional and other qualifications necessary for work at various levels in the particular type of library, which consists basically of successful selection and organization of materials and promotion of their use. Standards for library service: an international survey State that professional staff should, except in the smallest service points be available to provide professional services at all hours when libraries are open or when such services are required.

Reference:

1. Standards (2017, September) Retrieved from https://www.ifla.org/node/8750
2. Wthers F. N. (1974). *Standards for library service: an international survey* Paris : The UNECCO Press 1974 Retrieved on 2017, September from http://unesdoc.unesco.org/images/0001/000113/011390eo.pdf.
3. Standards manual. (2017, September) *guidelines/standards manual* Retrieved from http://www.ala.org/tools/guidelines/standardsmanual/manual, Proceeding of Indian Statistical Institute: Reminiscence of Platinum jubilees 2006-2007 publish by Kolkata: ISI. Pg 70.
4. Standards (2017, September) http://unesdoc.unesco.org/images/0001/000113/011390eo.pdf on 12/09/17]
5. ISI Library ((2017, August)). Retrieved from https://en.wikipedia.org/wiki/Indian_Statistical_Institute
6. Information data. (2017, August) *isical.ac.in/~library.* Retrieved from http://www.isical.ac.in/~library/census.php
7. ISI Calcutta (2017, September) ISI Calcutta Retrieved from http://www.isical.ac.in/~library/data.php
8. SILHOUETTES OF MEMORIES: A PICTORIAL ALBUM ON C. R. RAO AT INDIAN STATISTICAL INSTITUTE . Calcutta: Indian Statistical Institute. January 2010.

Authors Profile



Sabita Kundu is the librarian of Techno India Batanagar. She is now working as a college librarian. She served more than 20 years in library and information field. She has Masters Degrees in Bengali and Library and Information Science. She has life Membership of ILA, IASLIC and BLA. She has attended more than 30 national and international conferences and workshops and has written over 20 articles in national and international journals and books.

'Information Literacy' Need Of Pg Students: A Comparative Study Of Kurukshetra And Maharishi Dayanand University Of Haryana

Naveen Mehla

Research scholar Department of Library & Information science
Kurukshetra University Kurukshetra
Email: mehla29dec@gmail.com

Abstract: Curious nature of human beings makes them explore information now and then regarding innumerable topics. This quest is satiated trough e-resources as information on each and every aspect is easily accessible to all. But here a strange situation is confronted by people i.e. smart access to required information and this condition aptly termed as Information literary. It enables people to locate and use information effectively available in different formats and unfiltered form. This paper aims a comparative study of two universities considering varied types of information literacy and thus finding out where it is in more effective use. Study empirical in nature makes use of 200 questionnaires, 100 in each university- 55% of male and 45% female respondents participated. Outcome shows that 22.72% of respondents from MDU are using information for purpose of assignment and which is double of KUK- as it is 11.9% here. It's a vast study, data presenting in different 11 tables, study reveals need of library orientation program in KUK because only 9.09% and 25% in respondents from MDU learn with the help of library orientation program.

Keywords: Information literacy, media, digital, network

1. Introduction:

Information literacy includes the ability of critical thinking, evaluating, analyzing and modifying the accessed information. Apart from formal learning, information literacy also makes the handling of the situation flexible enough where information is in different formats and unfiltered form. Information literacy has become a survival skill in today's life. Without proper information literacy skill, it's difficult to locate, evaluate and use effectively the information that we need.

Present age is the age of information and communication technology. In this 21st century, due to advancement in technology information is scattered in different formats and ways. An individual faces many problems in finding, filtering and locating the needed information. That's how the concept of information literacy came into being.

Information literacy has many types such as visual literacy, media literacy, computer literacy, digital literacy, library literacy and network literacy. (Eisenberg, Lowe, & Spitzer, 2004)

2. Review of the literature:

Kovalik, Yutzey and Piazza (2012) the study based on high school students. The study found that the students are aware that the research takes time and need multiple resources. The students are able to use library resources, locate and use information. They know the importance of resources and reliable information related to their research projects, assignments and course work.

Devender Singh and Joshi (2013) the study found that satisfactory significant differences are there the first year and second year students. It also suggests that a single library and information service course may not be enough in itself to inculcate IL skills among the students.

Verma, Sudhir kumar and Boriwal (2016) the study found that majority of faculty members believe that information literacy will be very important to achieve the aims of digital India.

Chaudhry and Al-Mahmud (2014) studied information management behavior of Kuwaiti engineers. It has been found that websites are most used sources to collect work related information. Database are also frequently searched to find engineering information. Result also found that respondents are collecting and receiving information from different sources including websites, institutional repositories, colleagues and professional forums and e-mail attachment.

Maharana and Mishra (2007) Conducted a study among the teachers of different Post Graduate departments of Sambalpur University. It shows that there is an educational imbalance between the rapidly developing technologies and information available to the users. Majority of respondents (98.57%) expressed their need for electronic information. 82.86% respondents indicated that they use e-journal. Apart from this, majority of respondents use e- information to update their knowledge in their subject area.

3. Definition:

According to American Library Association presidential committee on information literacy, "to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (ALA 1989).

Information literacy is the ability to effectively identify access, evaluate and make use of information in its various formats, and to choose the appropriate medium for communication. It also encompasses knowledge and attitudes

related to the ethical and social issues surrounding information and information technology. (California academic and research libraries task force 1997)

4. Statement of the problem:

Today information literacy including so many components as computer literacy, media literacy and government beneficial literacy. In the absence of proper information literacy programs in colleges and universities, the students are generally not very efficient in use of information resources.

5. Objectives

- To know the awareness of information literacy by PG students.
- To check the information literacy skills of the respondents.
- To know how much they are aware about search strategies.
- To determine the awareness of using information resources and awareness of internet related resources.
- To know the suggestions of respondents for improving the information literacy skills of PG students.

6. Methodology

The study was empirical in nature as it was concerned with information literacy needs of the PG students, their information literacy skill and how much these students are information literate in MDU and KUK universities of Haryana. Total 200 questionnaire were distributed in two universities of Haryana among the PG students of KUK and MDU, 100 questionnaire for each University and response obtained of 88 (88%) from KUK and 84 (84%) from MDU University. In this survey questionnaire was open and closed ended. Finally, the analyzed data has been presented in the form of tables. There are 110 (55%) of respondent male and 90 (45%) female. In the study 89 (44.5%) respondents age between 21-22 years followed by 60 (30%) between 23-24 years, 31(15.5%) of respondents age up to 20 years and 20 (10%) of respondents age up to 24 years.

7. Data interpretation

Table.1 Purpose of Information need:

University	Researcher	Assignment	Project work	Update knowledge	Examination	Total
KUK	6 (6.81%)	20 (22.72%)	10 (11.36%)	10 (11.36%)	42 (47.72%)	88
MDU	5 (5.95%)	10 (11.90%)	8 (9.52%)	12 (14.28%)	49 (58.33%)	84
Total	11 (6.39%)	30 (17.44%)	18 (10.46%)	22 (12.79%)	91 (52.90%)	172

The response shows that the half of respondents in KUK University 49 (58.33%) and 42 (47.72%) from MDU University needed information for examination purpose. The response shows that the purpose of information need 10 (11.90%) of respondents of MDU and 20 (22.72%) of KUK is assignment. Half of respondents (52.90%) from both Universities information need for the purpose of examination.

Table.2 Mostly used Format of Information

University	Print format	Electronic format	Both	Total
KUK	17 (19.31%)	24(27.27%)	47(53.40%)	88
MDU	24 (28.57%)	12 (14.28%)	48 (57.14%)	84
Total	41 (23.83%)	36 (20.93%)	95 (55.23%)	172

Table2 shows that half of respondents use both format of information in MDU (57.14%) and (53.40%). 28.57% respondents of MDU preferred information in print format, whereas 27.27% of KUK preferred electronic format.

Table.3 Criteria for Inclusion of Documents in Research/Periodicals Database

University	Fond of the internet	Not fond of the internet	Owned by your library	Relevant subject matter	Total
KUK	41 (46.59%)	8 (17.04%)	24(21.33%)	15(30.66%)	88
MDU	38 (45.23%)	7 (8.33%)	28 (33.33%)	11 (13.09%)	84
Total	79 (45.93%)	15 (8.72%)	52 (30.23%)	26 (15.11%)	172

The respondents were asked about the criteria for inclusion of items in research/periodical databases. Table-3 shows that the maximum number of

respondents in KUK 46.59% and MDU 45.23% state that research or periodical databases are designed to include items that are found on internet. Only 15 (8.72%) respondents are not fond of using internet for required information, in both universities.

Table.4 Awareness of Boolean Operators

University	Character and values and moral	Character or values or moral	Character, values and moral	Character, values or moral	Total
KUK	39 (44.31%)	12 (13.63%)	26 (29.54%)	11 (12.5%)	88
MDU	35 (41.66%)	30 (35.71%)	12 (14.28%)	7 (8.33%)	84
Total	74 (43.02%)	42 (24.41%)	38 (22.09%)	18 (10.46%)	172

In order to see whether the respondents understand the use of Boolean operators, they were asked to prepare a search statement using Boolean operators. They were given the situation, which required searching a database using synonymous terms. Table 4 shows that only 24.41% respondents including 13.63% of KUK ticked the correct answer i.e. 'character or values or moral' 43.02% respondents which includes 41.66% from MDU and 44.31% from MDU preferred use of operators 'And' instead of 'Or'.

Table.5 Awareness of Citation

University	A Book	A chapter in a book	A journal article	A conference	Total
KUK	30 (34.09%)	26 (29.54%)	21 (23.86%)	11 (12.5%)	88
MDU	25 (29.76%)	35 (41.66%)	17 (20.23%)	7 (8.33%)	84
Total	55 (31.97%)	61 (35.46%)	38 (22.9%)	18 (10.46%)	172

To check the awareness about citation, a citation statement was given to the respondents and they were asked to identify the type of document of the given citation. Table 5 shows that there are more respondents from MDU 41.66% as compared to KUK 29.54% who were aware of the citation, i.e. they ticked the right option (a chapter in a book).

Table.6 Awareness of Website URLs

University	Commercial	Government	Organization	College University	Total
KUK	19 (21.59%)	25 (28.40%)	20 (22.72%)	24 (27.27%)	88

MDU	15 (17.85%)	21 (25%)	16 (19.04%)	32 (38.09%)	84
Total	34 (19.76%)	46 (26.74%)	36 (20.93%)	56 (32.55%)	172

In order to see whether respondents were aware about the website URLs, they were given the URL of a document and they were required to tick the appropriate owner of the website. Table 6 shows that there are more respondents from MDU (38.09%) are aware of college and university website in compare of KUK (27.27%). There is only little difference in awareness of commercial, government and organization websites in both university.

Table.7 Choice of Information Source for Historical Background

University	A latest book on the topic	A journal article	A general article	An encyclopedia	Total
KUK	45 (51.13%)	21 (23.86%)	12 (13.63%)	10 (11.36%)	88
MDU	44 (52.38%)	20 (23.80%)	18 (9.52%)	12 (14.28%)	84
Total	89 (51.74%)	41 (23.83%)	20 (11.62%)	22 (12.79%)	172

The respondents were asked what would be their first choice to consult for historical background of a new topic. Table7 shows that half of respondents (51.74%) choose information source for historical background is a latest book on the topic. Study shows that 9.52% from MDU and 13.63% respondents from KUK choose a general article for historical background.

Table.8 Access Tool of Searching a Book in the Library

University	Subject	Call number	Title	Author	Total
KUK	42 (47.72%)	8 (9.09%)	18 (20.45%)	20 (22.72%)	88
MDU	29 (34.52%)	20 (23.80%)	21 (25%)	14 (16.66%)	84
Total	71 (41.27%)	28 (16.27%)	39 (22.67%)	34 (19.76%)	172

Table-8 shows that subject (41.27%) is first priority for access tool of searching a book in library. In the study only (9.09%) respondents access a resource through call number in KUK and (23.80%) in MDU. 22.72% of respondents access through author in KUK and only 16.66% in MDU.

Table-9 Methods of Searching Information on Internet

University	Keywords	Boolean operators	Truncation	Field search	Total
KUK	60 (68.18%)	16 (18.18%)	4 (4.54%)	8 (9.09%)	88

MDU	50 (59.52%)	14 (16.66%)	5 (5.95%)	15 (17.85%)	84
Total	110 (63.95%)	30 (17.44%)	9 (5.23%)	23 (18.60%)	172

The respondents were asked the method of searching information on internet. Table-9 shows that majority of respondents in both the universities- is KUK (68.18%) and MDU (63.95%) used keywords for searching information on internet. 16.66% respondents of MDU preferred Boolean operators, whereas only 09.09% respondents of KUK preferred field search. Thus, the majority of respondents (63.95%) would prefer keywords for searching information on internet.

Table.10 Preferred Search Engine

University	Google	Ultra vista	Yahoo	Others	Total
KUK	72 (81.81%)	2 (2.27%)	12 (13.63%)	2 (2.27%)	88
MDU	70 (83.33%)	2 (2.38%)	11 (13.09%)	1(1.19%)	84
Total	142 (82.55%)	4 (2.32%)	23 (13.37%)	3 (1.74%)	172

Table-10 shows that google is first choice for search engine in KUK 81.81% and 83.33% in MDU followed by Yahoo 13.37%, ultra vista 2.32% and only 1.74% of respondents preferred other search engine by both universities.

Table.11 Awareness Program by University

University	Seminar/ conference conduct by university library	Library orientation tour	Information by reference librarian	Tutorial on library website	Instruction for use of e-resources by teacher	Total
KUK	31 (35.22%)	8 (09.09%)	8 (9.09%)	18 (20.45%)	25 (28.40%)	88
MDU	28 (33.33%)	21 (25%)	12 (14.28%)	13 (15.47%)	10 (11.90%)	84
Total	59 (34.30%)	29 (16.86%)	20 (11.62%)	31 (18.02%)	35 (20.34%)	172

Table-11 shows that 34.30% of respondents aware of IL through seminar/ conference conducted by university. 09.09% respondents of KUK got awareness through library orientation tour and 25% of MDU. 28.40% respondents of KUK aware through instruction provided by teachers and only 11.90% of MDU.

8. Conclusion

Today information explosion has emerged as a big problem. Information is scattered in many formats. Therefore, we need information literacy- to provide the right information to the right reader in right time. In a study based on this

issue there are 55% of respondents are male and 45% female. In this study 44.5% of respondents, age is 21-22 year. The study found that most of respondents use the information for the purpose of examination in both the universities. There are 22.72% of respondents from MDU use information for the purpose of assignment its double of KUK (11.90%). MDU preferred the print format of resources, whereas KUK respondents preferred electronic format of resources. Half of respondents in both universities succeeded in finding their information through internet. In the study 34.09% respondents of KUK preferred the citation through a book, whereas MDU 41.66% of respondents preferred a chapter in a book for citation. Most of respondents are aware with the college and university websites. Subject is the first choice of respondents for searching a document in the library. In MDU 23.80% respondents preferred call number for searching a document in the library whereas only 09.09% in KUK. Most of respondents use keywords for searching the information on internet and few respondents of KUK use field search. Google search engine is the first choice by researchers of both universities. The study found that there is need of library orientation program in KUK because only 09.09% of respondents learn with the help of library orientation program in KUK whereas 25% in MDU. Teachers in KUK 28.40% lead the program of providing the instructions for use of e-resources and only 11.90% in MDU.

Reference

1. Verma, R., Kumar, S., & Boriwal, C. (2016). Information literacy competencies among faculty of medical colleges in Madhya Pradesh (India): A Study and a Plan. In P. K. Jain, H. Kretschmer, D. C. Kar, P. Babbar, & Akash, *Bibliometric Data and Impact Managment in Information Science* (pp. 362-372). Delhi: Bookwell.
2. Devendra Singh, & Joshi, M. K. (2013). Information literacy competency of post graduate students at Haryana Agricultural University and impact of instruction initiatives: A pilot survey. *Emerald*, 453-473.
3. Ukpebor, C. O., & Emojorho, D. (2012). Information literacy skills: A Survey of the Transistion of Students from Secondary to University Education in Edo State, Nigeria. *Library Philosophy and Practice(e-journal)*, 824.
4. Kovalik, C., Yutzey, S., & Piazza, L. (2012). Information Literacy and High School Seniors: Perceptions of the Research Process. *Research Jorunal of*

the American Associatio of School Librarians, 1-26.

5. Naveed, Q., & Sharif, A. (2015). Assessing the needs and measuring the impact of the imformaion literacy sessions at the Aga Khan University's Instutute for Educational Development. *Asian Review of Social Sciences*, 20-29.
6. Pinto, M. (2012). Information literacy perceptions and behaviour among history students. *Emerald*, 304-327.
7. Eisenberg, M. B., Lowe, C. A., & Spitzer, K. L. (2004). *Information Literacy: Essential Skills for the Information Age.* London: Libraries Unlimited.
8. Kaur, P., Sohal , M. K., & Walia, P. (2009). Information Literacy Curriculum for Undergraduate Students. 556-560.
9. Kumar, R. B. (2016). User Education in Libraries. *International Journal of Libraries and Information Scince*, 01-03.
10. Lau, J. (2006). *Guidelines on Information Literacy for Lifelong Learning.* Mexico: IFLA.
11. Maharana, B., & Mishra, C. (2007). A Survey of Digital Information Literacy of Faculty at Sambalpur University. *Library Philosophy and Practice(e-journal)*, 1-9.
12. Chaudhry, A. S., & Al-Mahmud, S. (2015). Information Literacy at Work: A study on information management behaviour of Kuwaiti engineers. *Emerald*, 760-772.

Introduction to College Libraries of Ukhrul District, Manipur

Augustine Zimik

Department of Library & Information Science,
Tripura University, Suryamaninagar, Tripura, India
(augustinezimik@tripurauniv.in)

Abstract: The importance of Library is often being overlooked. At this age of google and social media, people tend to take library for granted. Unkhrul is a Hill District of Manipur in the Northeast region of India is no exception despite the poor internet penetration. The district is inhabited by the Tangkhul Naga. There are 221 villages and a population of 204,230 (according to 2001 census) speaking over 200 different languages of their own.

There are three colleges in the District, a survey method was employed to study the status of their Libraries by using interview and observation technique.

The study revealed the Library functioning and Services provided to the users are way behind the expected standard.

Financial crunch was the major problems cited by the Librarians of the institutions. However, the lack of awareness on the part of students regarding their rights to the library and also the ignorance of the parents may be other factors affecting the Libraries.

Keywords: Academic Library, College Library, Status of Library, Ukhrul District, North-east-India

1. INTRODUCTION

Development has never been in unison in any given country or amongst countries. Whether it be; technology, education, infrastructure, economy, etc. This unparalleled development may be attributed to various factors such as geographical location, topography, climate, religion, politics, and so on.

In India, geographical location seems to have a huge impact on the development of a particular region. Consequently, the parity between two geographical areas of India in terms of development is two huge that social stratification is a necessary evil. Moreover, Reservation, caste system and ultimately racism arises from the gap. Fair competition till today, cannot be a practical concept in India under the prevailing socio-economic conditions.

Nevertheless, education can play the deciding role to bring equality in the real

sense. Therefore the government of India is addressing this issue by implementing free education for every child under 14 years of age, scholarship for poor etc.

The government, both state, and Central have a number of educational institutions that provide free education. The library, being the heart of every educational institution, has a direct role in bridging the gap. If every student gets the books he/she wants (every reader his/her book) and is given equal opportunity to the quality library, the difference between poor and rich may be diminished. Thereby, making an impact on the students in particular and society in general.

The overall aim of a Library, regardless of its location, size or parent organization is to provide organized library services to meet the information needs of its clientele in their activities relating to education, research, management and any other specialized services (Khatri 2016). A good Library can help the poor rural students who cannot afford to buy books, inculcate self-education and life-long learning.

The importance of Library is often being overlooked. At this age of google and social media, people tend to take library for granted. It appears that despite the innovative services the information organizations offer, the incorporation of technological advances and the new roles the information professionals have assumed, the misconceptions of the librarian's work persist (Vassilakaki and Moniarou-Papaconstantinou, 2014).

However, the library cannot be considered obsolete at least in India till date. Due to the facts that 1.) Everyone cannot afford to have access to internet 2.) The internet penetration in India is only 28% according to TRAI (September 2016) which means over 72% are not connected to the internet. 3.) The information is every growing, whereby authentication of information sources become a Herculean task.

Critic surmised that the role of the librarian would become peripheral and that user would be able to able to access information at the touch of a keypad. However, experience has shown that the librarian is central to the provision of effective service(Salmon & Smart, 2017)

In fact, the need for a library is increasing as the universe of knowledge is growing bigger. Everyone needs a library for fast access to authentic information. Some student who cannot afford a smartphone or computer relies solely on the library. This statement is more relevant in the context of the rural population.

The American Baptist missionaries were the first to spread modern education in English in the hills (including Ukhrul District), using the Roman script. William

Pettigrew brought education with his missionary activities to Ukhrul. He started a school at Ukhrul on the 10th February 1897("Educational Profile of Manipur," 2005). Therefore, the formal education in the area is comparatively younger than most of mainland India. So also the Library as a concept is not understood so well even today. Which adversely affect the library system in the district.

This paper is an attempt to explore or rather expose the prevailing condition of the Libraries in Ukhrul District, Manipur. Which is situated in the NER of India. The difference between college Libraries in rural NER and Mainland India may further be investigated.

2. METHODOLOGY

Manipur state is a border state in the North Eastern corner of India. Unkhrul is a hill district of Manipur in the Northeast region of India. The district is inhabited by the Tangkhul Nagas. There are 221 villages and a population of 204,230 (according to 2001 census) speaking over 200 different languages of their own.

The Tangkhul Nagas of Manipur are the largest community after the majority Meitei community in Manipur. Ukhrul district is the home of the Tangkhuls since time immemorial. The Tangkhuls predominantly inhabited the whole district of Ukhrul measuring 4,544 sq. km. Jessami, Wahong, Poi, Tusom, Chalao, and Kharasom are the northern most villages-boundary with the Nagaland state. In the east, Chamu, Khayang, Chatric Khullen, Kachouphung, Chahong Khunou, Kongkanthana and Kangpat Khullen villages bordering Sagaing Division of Myanmar. The Southern-most villages are Nambashi Khullen, Lairam Khullen bordering Chandel District and in the west Kachai, Champhung, Sana Keithei, Hongman, Mapao, etc., border Senapati and Imphal East (Shimrei & Phil, 2015).

There are only four colleges (one defunct) in the district. Each of the colleges at least has their own library and Librarian. The college Librarians were interviewed individually to ascertain the status and condition of their library. Examination of the Libraries was done based on the guidelines given by NAAC (National Assessment and Accreditation Council) on Quality indicators in Library and Information Services: Affiliated/Constituent Colleges. The parameters used to study the three college Libraries are based on a recommendation made by the council.

3. SIGNIFICANCE OF THE STUDY

While the Libraries in the cities of India talks about latest Information and Communication Technologies available for libraries today. The rural libraries

(academic or public) Ukhrul District of Manipur are struggling to get classification system implement in their respective Library.

Library in this part of the country has not seen the light of advancement in Library system that we can see the other parts of the country. The need for change struck the mind of the author.

As long as the knowledge of the author is concerned this paper may be the first literature on Library Science from the district. Literature related to examination of Libraries in the said district has not surfaced on the public domain. That in itself is a clear indication of the lack of awareness of library as a concept or as a discipline in the said district.

The Libraries in Ukhrul District need to be exposed to the world by doing a survey on the existing condition. By means of which, I hope to get some attention from Library Associations and passionate Library Professionals who are kin to bring about change in every corner of the country. Thereby, a dawn of library movement may be initiated in the said district.

4. OBJECTIVES OF THE STUDY

To examine the current status of college libraries in the district.

And to study the factors affecting the standard of libraries in the district

To explore the scope for upgrading the status of college libraries in the district

5. BRIEF PROFILE OF THE COLLEGES

5.1 PETTIGREW COLLEGE

Pettigrew College was established in the year 1965. It is the oldest college in the District. The college was founded by Yangkahao Pheiray consequently he was the Principal of the college for 20 years (1965-1985). The college is funded by the Government of Manipur. And affiliated to Manipur University. The college is housed in the 23.5-acre campus. It is situated in the Ukhrul District Head Quarter. With a total of 12 departments and a strength of 36 teaching faculties. There are approximately 600 students in the college pursuing Bachelor's Degree in Arts and

Sciences.

With the inception of the College Library was established. Under the leadership of the principal, the college Library functioned efficiently with an active Library Committee in place for 20 years. After the college experienced degrading Library system. There was four library staff, of which 3 retired and never replaced.

The college Library is housed in the single room. Where a librarian in his early 60s is looking after the library. He obtained his Bachelor's degree (B.L.I.S.) from Shivaji University, Calcutta in the year 1985. He singles handily manage the duties and responsibilities of providing Library service to more than 400 students in the college.

6. SENTINEL COLLEGE

Sentinel College was founded 1996. It is a privately supported, secular, non-political, co-education, and the non-residential institution of Science, Arts, and commerce. The college was founded by eight alumni of Delhi University. Since inception, the college despite impoverished set-up has been excelling in producing students; securing letter mark and toppers. Currently, there are 500 (approx.) students enrolled in the college including higher secondary students.

The college has a publication called "sentinel today" which is published quarterly. It serves as the mouth piece and custodian of the daily event of the institution. Also, facilitate communication within the college.

The college provides a modest Library taken care a Librarian and staff. The library remains open on all working days (i.e. Monday to Friday) from 10:00 am to 4:00 pm. The library is funded by the institution itself. The library is being housed in a single room.

The Librarian earned a master degree (MLIS) from North Eastern Hill University, in the year 2007. She has working experience of 3 years.

7. SAINT JOSEPH COLLEGE

St Joseph College is the first Catholic college in Ukhrul district and was inaugurated on 1st May 2015. The entire effort of the college is to ignite the young minds and take them beyond the syllabus and mere examinations. It is to transform them to be enlightened and inspired souls with a deep sense of values and passion to uplift the society, a vision beyond the visible. So it will be a college that will be incredibly exciting, challenging, competitive and ever changing to 'make a difference' in life

and to mold a golden career.

St. Joseph College is affiliated to Manipur University. The motto of the college is to IGNITE, INNOVATE & INTEGRATE.

Archbishop of Imphal most Rev. Dominic Lumon is the chairperson/president of the college. Archdiocese of Imphal (Managing Committee) is the legal holder and has the complete and final authority over the college. The Principal, Vice Principals, and other church personnel are duly appointed by the archbishop. All of them are non-salaried personnel working for the mission of the church. The church is passionate about grooming the leaders, technocrats, and managers to conquer the world by harnessing their latent talent and to build a society based on love. The lecturers and other staffs members are appointed by the principal/secretary of the managing committee. The Principal, administrator, and vice-principals from the governing body of the college to run the day to day administration. The security of the college is entrusted to Mary Help of Christians Parish, Ukhrul.

8. FINDING AND DISCUSSION

Based on the parameters suggested by NAAC, the finding is presented in tabular format. After every table, the findings are discussed. The areas discussed in the tables focus on Management of library and information service, functioning, collection and services provided. The extent of the use of library services could not be determined as it is based on observation and interview with the Librarian. Nevertheless, the extent of use of library services was also examined using the available data.

MANAGEMENT OF LIBRARY AND INFORMATION SERVICES

Table 1: Management of Library and Information Services

Sl. No.	Parameters	Pettigrew College	Sentinel College	St. Joseph College
1	Working Days	Monday – Friday	Monday – Friday	Monday-Friday
2	Working hours	10:00 – 3:00 Pm	10:00 – 4:00 Pm	10:30-3:00 Pm
3	Library advisory committee	No	No	No
4	Qualification of Librarian/ Experience	BLIS/30 years	MLIS/3 years	MLIS/3 years

5	Salary of the Librarian	80,000 (INR)	7800 (INR)	9000 (INR)
6	Number of Library Staff	1	2	1
7	Training for staff	No	No	No
8	Library Space	Single Room	Single Room	Single Room
9	Seating capacity (at a time)	10	15-20	150
10	Electricity/ current supply	Out-current	Out-current	Out-current
11	Overall maintenance and cleanliness	Poorly maintained	Okay	Okay
12	Does the library have computers and Internet facilities?	No	No	No
13	Are the library functions automated?	No	No	No
14	What are the financial/funding sources	State Govt.	Institution	Institution
15	Is there any defined policy for collection development, stock verification, promotion and training of library staff?	No	No	No

This table examines the management of the libraries. As it is clear from the table that all the three libraries follow the same working days and hours i.e. Monday to Friday from 10:00 am to 3:00 pm, except for Sentinel college where the working hour is until 4:00 pm. We found that not even a single Library has library committee which is a matter of concern. All the librarian were found to be library professionals. However, an irony was spotted in terms of salary. Each of the MLIS

degree holders in the private colleges gets below 10k/month but the personnel having BLIS degree is paid 80,000. Here, we can see a huge difference in the salary paid to library professionals in govt and private college. It may be mentioned that the difference arises because of two reasons, firstly, the year of work experience, secondly, because of the parent body/funding agency.

It was also found that all the three libraries except Sentinel college library have only one library staff. It implies that all the works in the library are performed by a librarian. One can imagine, how well a librarian could manage all the activities in a library.

9. COLLECTION AND SERVICES PROVIDED TO USERS

COLLECTION DETAILS

Table 2: Collection information

Sl.no	Library Materials	Pettigrew college	Sentinel College	St.Joseph College
1	Books	-	-	1800
2	Text Books	-	1500	4000
3	Reference Books	-	-	200 +
4	Current Journals 1. Indian	Nil	Nil	Nil
5	2. Foreign	Nil	Nil	Nil
6	Peer reviewed Journals	Nil	Nil	Nil
7	Back Volumes of Journals	Nil	Nil	Nil
8	Magazines	Nil	Nil	Nil
9	E- Information Resources	Nil	Nil	Nil
10	CD's /DVD's	Nil	Nil	Nil
11	Databases	Nil	Nil	Nil
12	Online Journals	Nil	Nil	Nil
13	Special collection	Nil	Nil	Nil
14	Competitive Examinations	Nil	Nil	Nil
15	Braille materials/Rare collection	Nil	Nil	Nil
16	AV Materials	Nil	Nil	Nil

6.2.2 Ratio of the library books to the number of students enrolled

Table 3: Book-student ratio

• Sl. No.	Pettigrew college	Sentinel College	St. Joseph College
• Books to student ratio	• 15:1	• 4:1	• 6:1

10. SERVICES PROVIDED

The library has a key role in supporting the academic activities of the institutions by establishing, maintaining and promoting library and information services, both quantitatively and qualitatively. The library offers a wide range of services from reference to electronic information services. College libraries may answer the following basic questions for ensuring appropriate services to the academic community.

Table 4: Services Provided

Sl.no	Services	Pettigrew College	Sentinel College	St. Joseph College
1	Circulation Services	Yes	Yes	Yes
2	Clipping services	No	No	No
3	Bibliographic compilation	No	No	No
4	Information display and notification services	No	No	No
5	Reference/referral services	Yes	Yes	Yes
6	Photocopy and printing services	No	No	No
7	User Orientation/ Information Literacy	No	No	No
8	Resource sharing/ILL	No	No	No
9	Internet / digital resources availability	No	No	No
10	Any others	-	-	Compulsory Library Period

11. EXTENT OF THE USE OF SERVICES

Table 5: Extent of user service

Sl. No.	Use of services	Pettigrew College	Sentinel College	St. Joseph College
1	An average number of books issued/returned per day.			
2	Number of reference inquiries (users) on an average per month (percentage may be specified)			
3	Number of services delivered per capita per month			
4	Average no. of users who visited/consulted documents per month	1,250	1,250	Library hour is mandatory for every Student pursuing B.A. once in a week.

12. BEST PRACTICES FOR COLLEGE LIBRARIES

Listed below are some of the best practices that can enhance the academic information environment and usability.

Computerization of library with standard digital software.

The inclusion of sufficient information about the library in the college prospectus.

Compiling student/teacher attendance statistics and locating the same on the notice board.

Displaying newspaper clippings on the notice board periodically.

Career/Employment Information/ Services.

Internet Facilities to different user groups.

Information literacy programs.

Suggestion box and timely response.

Displaying new arrivals and circulating a list of those to academic departments.

Conducting book exhibitions on different occasions.

Organizing book talks.

Instituting Annual Best User award for students.

Organizing competitions annually.

Conducting user surveys periodically.

13. CONCLUSION

This paper is an attempt to explore or rather expose the prevailing condition of the Libraries in Ukhrul district, Manipur. Which is situated in the NER of India. The difference between college Libraries in rural NER and Mainland India may further be investigated.

References

1. Khatri, R. (2016). *Library Administration*. New Delhi. A.P.H. Publishing Corporation.
2. Educational Profile of Manipur. (2005), 205–225.
3. Salmon, F., & Smart, C. (2017). The Role of the Academic Library in Facilitating Scholarly Communication, *58*(2), 67–79.
4. Thanmung, M., & Ph, D. (2015). *Christianity and Social Change among the Naga Tribes of Manipur*.
5. Virginia, M. (2014). American Library Association, *60*(1), 63–72. https://doi.org/10.1081/E-ELIS3-120044705 http://www.naac.gov.in/docs/Guidelines-Colleges-Library.pdf
6. Vassilakaki, E. and Moniarou-Papaconstantinou, V. (2014), "Identifying the prevailing images in library and information science profession: is the landscape changing?" *New Library World*, Vol. 115 Nos 7/8, pp. 355-375.

Library Guides, Signage and Digital Technology

Dr. Dharam Kumar & Dr. Pardeep Rai

Librarian
Aryabhatta College (University of Delhi)

1. INTRODUCTION

The libraries are peoples universities which are visited by the numerous library users on the day today basis. The libraries are generally housed in the big buildings and internally the collection and services are organized in a systematic pattern, for instance, the library collection is arranged in the libraries in the classified order based on the Classification Scheme adopted in the library. Similarly, sometime the building of the library consists many floors and annexes and users feel confused how and where the particular service will be available. To ease such problem the library scientists evolved a way to put the library guides at the various points to help and guide the users regarding the building plan, floor arrangement, shelves guide in the stacks hall and important messages of 'Dos and Donts'. The form and style of these library guides, or may be called signage, keep changes time to time when any new invention/ advancement in the technology or the material which may be used for such signage is invented. Generally, in the pre internet and ICT age, the manually painted guides were in the practice but as the technology paced forward the design, style and its material changed and now the computer operated digital multimedia signage are used to guide the library users.

Network and multimedia technologies led to emergence of many computer convergence applications. Digital signage through the use of Internet is one of the innovations being adopted by the marketers and advertisers. The traditional signs were static and being replaced by digital signs rapidly.

The term 'digital signage' is frequently used in literature, but often misplaced by referring to any kind of simple digital poster signage. It is described as "screens both large and small that are used to show content and advertising. These screens are usually networked to a main content server which can usually be administered from anywhere in the world, where an Internet connection is available"[1]. Digital signage is a form of business communication where a dynamic messaging device is used to take the place of or supplement other forms of messaging. It is a networked, audiovisual information system that allows remote controlling contents – either program driven or manually – but in any case from a centralized system. It consists of several decentralized digital displays interconnected with

a central system consisting of a content management system and user rights management system. Such intelligent digital signage systems can also adapt the displayed contents to the actual audience in real time and even enable simple non-contact human computer interaction.

The smart digital signage has three significant characteristics. These are : -

(1) the possibility for local contents and local rights to use these in the 'content program',

(2) actually that allows to display new contents within a few minutes on the global network or at single location, and

(3) user rights management that allows distinct users to manage distinct 'program blocks' that are shown on a display.

Digital signage content may include advertisements, community information, entertainment and news. These screen networks are known by many names but the most popular internationally terminology is Digital Signage.

2. WHY DIGITAL SIGNAGE

The digital signage provides many advantages over the traditional signage. Some of the characteristics are as follows:-

1. **FLEXIBILITY** of Content, time and channel
2. **INTERACTIVITY** – these digital signage are more than merely a display screen. Many interactive screens are "looking back" to monitor behaviors and observe the characteristics of the library users/consumers.
3. **ENTERTAINMENT** – Digital signage have strong entertainment component as they have useful information, pleasant scenes and sounds can act as enhancers to users in the library.
4. **INFORMATIVE** - Plenty of information useful to the users can be provided through these signage.
5. **ATTRACTS ATTENTION** - Digital Signage has a considerable impact on the direction and magnitude of library users visual attention during decision making. The moving images of digital signage attracts viewers attention and act as a more effective atmosphere stimulus than those that are static.
6. **HIGH RECALL** – The moving images of digital signage act as a more effective stimulus with high recall value.

7. **HIGH PURCHASE INTENTIONS AND SALES** – Digital Signage drives and motivate customers to buy or take the action. It also creates the positive impact on buyers. In case of libraries these characteristics will increase the attraction of the library users and maximize the utilization of library resources and services.

3. TYPES OF DIGITAL SIGNAGE

The digital signage is evolving as the new technologies are becoming popular day by day. New Inventions and innovations in technology are leading the newer forms of signage. The invention of LCD and Plasma screens the traditional signages are becoming outdated. New Concepts are to use water and fog as screens. Many sensory techniques have also been invented which not only grab attention of the viewer but also interact with them. The 'magic mirror' and 'touch wall' are the latest innovations of the digital signage. Some of the popular innovative signage are mentioned below:-

1. **HOLOSCREEN:** The holoscreen is a revolutionary holographic film which displays any image fed through a projector at a specific angle on to a transparent display. All other lights are ignored. The result is a remarkably bright and sharp image quality, even in brightly lit environment. The screen is a rectangle of glass with a translucent sheet attached to it. The give the sound the speakers may be also attached. The projector can take various inputs such as TV, DVD and computer. From Cable services to free to air Television, DVD, Videos, PC or Laptop, even games consoles, pretty much anything that can be plug into a television or computer screen.
2. **FOG SCREEN OR WALK THROUGH SCREEN:** The walk through Fog Screen is a novel & intriguing method for forming a superior quality physically penetrable dry fog display. FogScreen walk through screen uses ordinary water to generate a thin, dry fog upon which the image is projected, hence making it possible to walk through an image floating in mid-air without getting wet. Walk-Through Screen is an excellent eye catcher.
3. **WATER SCREEN:** The Water Screen is a high – resolution projection surface created entirely in a cascade of water. The unique screen is one of the most significant advancements in multi-media projection technology in years. The interaction of light and water brings a whole new visual dynamic to the presentations. Imagery takes on a holographic look and actually appears to

be floating in mid –air. The Water Screen has been engineered for use with lasers, video, film, intelligent lighting and all multimedia projection and lighting sources. This is unique and inspiring liquid display medium. Every Water Screen is made of connected modular parts. Screens are created by combining 4' nozzle sections made from high grade aluminium alloy extrusions. This allows for endless configuration and shapes to suit users needs. Nozzle sections are light weight and easy to carry and mount. The difference between fog screen and water screen is that later uses water instead of fog as a screen to display images.

4. **INTERACTIVE FLOOR:** Interactive floor projection is a unique medium which allows users to interact with images projected onto the floor or wall. It is colorful, projected animated floor. For it to move, one must move. The Interactive floor projection system consists of the following components: computer System, Infrared Tracking Kit, Interactive Software and projector. The software for Interactive Floor Projection system is modular based with a built-in motion detection engine. Each interactive floor effect can run on its own or seamlessly integrate with each other to create a continuously changing environment.

5. **INTELLIGENT SIGNAGE:** Computer Vision methods of face detection, classification and recognition of people's behavior in front of digital displays can provide some objective data about the people demographics data such as age and sex etc. By using an inexpensive video sensor on the top of the screens the system can be made intelligent by measuring and adapting to the actual audience in real time. The Digital signage or receptive signs automatically learns the audience preferences for a particular content in different contexts based on the attention time on the content and then it presents content accordingly. The e-Mir, digital signage show human faces which react to audience emotion. The face detection classifies facial expressions and determines gender. This information is used to let a human character on the screen react accordingly and encourage interaction with the face/sign. Chen et al.., 2009 describes a vision based gesture recognition approach to interact with digital signage systems. Using different techniques and algorithm, a set of hand gestures can be recognized in real time and converted to various gesture commands to control and manipulate the digital signage display[2]. Therefore it facilitates interaction with digital signage using hand gestures. Thus an intelligent digital signage system can give the right message to the right audience in real time.

4. DIGITAL SIGNAGE HARADWARE/ SOFTWARE

The Important hardware/ software producers for digital signage are as follows: -

1. **Media Matrix** – USA based division of Peavey one of the world's largest manufactures of professional audio equipment. Media Matrix revolutionized the high – end audio technology market with its computer based audio processing and control interfacing systems.
2. **Peavey Commercial Audio** – Founded in 1965, Peavey is one of the World's largest manufacturers and suppliers of professional sound equipment.
3. **SVSi** – SVSi's voLANite digital media distribution and matrix switching solution connects any combination of analog and digital sources to any number of outputs over the most reliable switching solution in the industry. It provides easy to install, cost effective Networked AV products offer point to multipoint streaming of HD Content over standard IT Infrastructure.
4. **Whirlwind Music** – For last 35 years it has provided a complete line of interface solutions. Fom mic cables, Medusa snakes, splitters and custom metal fabrication to advanced digital audio solutions.
5. **Adder Corporation** – Adder is a leading developer and thought leader in connectivity solutions. Adder's media networks, extenders and keyboard, mouse and video switch solutions enable the control and distribution of IT systems around the world.
6. **Black Box** – Black Box offers everything you need to set up end to end digital signage systems. Solutions include iCOMPEL appliance/ players platforms for easy to implement signage, plus extenders, splitters, switches, converters etc. The company's site blackbox.com/go/guidesDS may be visited for AV multimedia and digital signage Design and Sourcing Guide.
7. **Blackmagic Design Inc.** – It deals with Mini converters which are easy to use SDI Converters. HyperDeck shuttle gives the quality and flexibility of compressed DNxHD and uncompressed recording from SDI and HDMI direct to common low cost SSDs.
8. **CastNET** – CastNET is an easy to use yet powerful software solution for managing digital signage. It combines multiuser approval workflow and critical IT features with dynamic visual content.

9. **DA-LITE** – Founded in 1909, Da-Lite Screen Company is the leading producer of high quality commercial and residential projection screens worldwide. Da-Lite manufactures projection screens and accessories for Fortune 500 companies, entertainment and major broadcast networks, education systems and governments around the globe.
10. **DVIGEAR** – It is leading supplier of Digital connectivity solutions for a wide range of professional display applications like splitters, switchers, matrix routers etc..
11. **Gefen** – Gefen supplies the best selection of signal switchers, splitters, extenders, scalers, KVM, digital signage and home theatre accessories.
12. **IAVI** – provides pro AV distribution to resellers, integrators and installers worldwide with value added services.
13. **LG Electronics, USA, Inc.** – It is world leader in digital products including commercial grade LCD and Plasma displays.[3]

5. APPLICATION IN LIBRARIES

The libraries in US and European countries are switching to digital singage from the traditional plastic or paper signage. There are various reasons as the traditional signage is not effective and are invisible due to static nature, not upto date and so on. The libraries may use the digital signage for giving information regarding the building plan of the library. The large Digital display may inform the users about the various sections like Reference Section, Periodical Section, Circulation Section, and the Internet access facility area/ section inside the library. The large university libraries may also utilize the digital signage as Guide to Public Utilities like Toilets, Canteen and Photocopy counter.

In addition to the above, the digital signage may help the libraries as Rack Guide in the Stack Hall. The touch screen Tablet size screens may be installed on Racks to inform the users about the books available on the particular rack, with abstract of the book and catalog information. The New Arrivals of Books, Journals and E-resources may be informed to the users in more effective manner. The Users Orientation is an important part of effective library services. The digital notice boards displaying important messages, circulars etc. may be used in the libraries. The library staff and the Users may be asked to create content for signage and the campus planning, student life, career services etc. may be displayed more vibrantly with currency.

6. CONCLUSION

The digital signage has revolutionized the modern day advertising with multimedia technologies. Simple animated banners have been replaced with Water and Fog Screens. The sensors and visual capture devices are being used to interact with the viewers. The digital signage promotes interactivity, high retention and maximum recall value. The digital signage may help to improve the public relations front of library. It will allow the library to communicate with and engage its users community far more effectively than with printed signage.

REFERENCES

1. Donald A. Barclay, Thomas, Bustos and Teal Smith, Signs of Success: Digital Signage in the Library, C&RL News, June, 2010.
2. Ii Chen, Q. and others. (2009). Interacting with Digital Signage Using Hand Gestures. In, International Image Analysis and Recognition, 347-358, Springer, Berlin Heidelberg.

BIBLIOGRAPHY

1. Anderson, C. (2015). 10 key Stats that are Accelerating the Adoption of Digital Signage. Retrieved on 11/09/2017.
2. Dennis, C. Brakus, J J, Gupta S. and Alamanos, E. (2014). The effect of Digital signage on shoppers' Behaviour: the role of the Evoked Experience. Journal of Business Research, 67 (11).
3. Neilson. (2015) Nielson study Highlights Efficacy of Digital Bilboard. Retrieved on 11/09/2016.
4. Yackey, B. (2009). A beginners guide to digital signage. Digital Signage Today. Retrieved on 11/09/2017.
5. Matt, Enis. Signs of the Time. Library Journal, June 15, 2016.
6. SVC Buyers Guide 2012 : www.svconline.com as on 19/09/2017.

Management Of Library And Information Science In Kendriya Vidyalayas

Rakesh Kumar Pandey

(M.A (History); B.Lib.I.Sc; M.Lib.I.Sc.;M.Phil.;UGC NET;CIC) Librarian,
Kendriya Vidyalaya , OEF Kanpur, UP

Now a days automation has become a very common term in Kendriya Vidyalaya. Even the children of beginning classes are becoming familiar with the library and its automated works and services .Automation of library does not mean to automate the library in itself, but it is an automation of library and information activities to fulfil the need of vidyalya library by saving of cost, time and manpower. The latest generation computer and communication technologies have played important role in library automation. For conversion of traditional vidyalaya library into modern automated library and for its functioning, proper planning and management is must.

1. LIBRARY AUTOMATION

In present era, we can't imagine a library without automation. The beginning of library automation took place during 1945 when Venneral Bush devised a mechanical library known as "Memez"that allowed search for bibliographic items from different access points. The computerisation of library started in 1960's and one step ahead microcomputers were used in 1980's .The use of telecommunication technology and internet has brought the phenomenal changes in the automation scene. Now a days even small libraries are being automated and even small kids are being benefitted with the automated library facilities.

The automation word is derived from the Greek word "Automos" means power of spontaneous motion or self-movement .In the context oflibrary it is mechanisation of all library activities. According to **ALA Glossary** of library and information science automation is defined as "The performance of an operation, a series of an operational process by self-activating, self-controlling or automatic means. Automation implies the use of automatic data processing.

Equipments such as a computer or other labour saving devices". However, in general library automation has come to mean the application of computers and related data processing equipments into library works and services. Computerisation of library and information system includes;

- Library works , practices and procedures ,

- Information technologies –computer hardware, software , having database management system, and
- Work force i.e. library personnel.

In such a way library automation refers to the automation of library activities and services such as acquisition, serial control, cataloguing, circulation, Management Information Services (MIS). The services of telecommunication and reprographic technologies have been equally important as it supports to library automation.

2. WHY LIBRARY AUTOMATION IN VIDYALAYA?

As we know necessity is the mother of invention .New inventions and their use is being made in all field of society. In such an atmosphere, how will a library and information institution remain deprived from the updating? Automation is no doubt a costly affair, the question arises what is the purpose and need of library automation? In such situation, the major factor that plays important role is Cost and benefit analysis, it means if the cost invested in any new device, is beneficial to the organization in future, then the new device ought to be implemented. Library is not like other business institutions, it is a service institution therefore it cannot be measured with the same parameter. The benefit derived by library users becomes major consideration. Library benefits the vidyalaya in indirect way and it makes the vidyalya user knowledge smart by providing latest information, therefore the cost of automation of library is justified.

The manifold increase of information output and usage has posed the problems for librarians and information scientists to handle the information in effective manner, as per the need of modern society. The house keeping jobs of libraries and other related works became complex and could not satisfy the modern requirements of users. Due to advancement in technologies, minimization of the cost, updated users expectations and change in attitude of librarians and information managers, to manage the information efficiently, automation of library activities became the only option. Moreover, the computer and network technologies have proved the information storage, processing and retrieval speedily, accurately than traditional manual system. For the job like filing, sorting, typing, and works of repetitive nature can be replaced by the use of technologies. In nut and shell, we need the automation of library and information service due to the following reasons:-

- To organise manifold increase of information ,
- To meet increasing demand of services of modern society ,

- To handle the work through minimum work force ,
- To facilitate electronic access for required information and to provide information to the people residing in remote localities ,
- To provide latest information to users ,
- Document Delivery Services as soon as possible,
- To provide services beyond place and regions.

3. STEPES OF LIBRARY AUTOMATION IN VIDYALAYA

Once it is decided to automate the library, it is necessary to be familiar with all the aspects of library automation so that task can be completed in a smooth manner .As library is a growing organism, if any system is going to be implemented in library, it should be done properly and in planned way, keeping in view of present and future needs of library. As automation is a major and multi-directional task, the coordination of administrative authorities, technical personnel ,library and information professionals is necessary .The automation work of any library implies the following stages;

Stage I	To study the internal work flow and need of library,
Stage II	Retrospective conversion of library holdings and access to local resources,
Stage III	Provision of external resources – Document Delivery Services; provision of online data exchange, integrated online resources and World Wide Web resources;
Stage IV	Inter operability of system/ services, keeping in view global trend and developingdigital libraries.

4. APPROACHES TO LIBRARY AUTOMATION

Library automation needs a fair coordination among various agencies and individuals. The range of approaches starts from library collection, user's transactions and services are important. It is necessary to consider all the aspect of library at the time of planning of library automation because the need, type of users, size of collection, and actual number of transaction, range and variety of services differs from library to library. After properanalysis of library requirements, the library software and other set up should be adopted .If library plans to give OPAC and remote access,accordingly appropriate system should be implemented to back

the services. Kendriya vidyalaya libraries has adopted e granthalaya software for automation of library .NIC provides all types help in implementation and running of this software.

5. HOW AUTOMATION HELPS THE VIDYALAYA LIBRARIES?

The increased flow of information has created a challenge to perform the house keeping operations i.e. Acquisition, technical works –classification & cataloguing, circulation serial control, search and management. Computer and other information technologies offer an efficient and effective tool for handling the burgeoning knowledge problem. On the other hand the growth of literate population has increased the demand of specialised and quick information services, the users of information society have realised the importance of information and knowledge .Thereby emphasizing the critical role libraries play in dispensing information ,they expects more and more from libraries today .The traditional method is not fit to provide quick answer. Therefore it is thought that automation of library is the enhancement of the library .The pressure of inflation .budgetary cut and information explosion are forcing vidyalaya librarians to form networks and consortia with a view of resource sharing .Automation helps in following ways :-

- Minimise man power in library works and services ;
- Reduce routine and repetitive jobs ;
- Multiple outputs become possible ;
- Productivity is increased;
- Quality of services are increased;
- Helps in new production and processes;
- Helps in answering the multiple queries;

6. PEOPLE INVOLVED IN LIBRARY AUTOMATION

Library automation is not one man job .But kendriya Vidyalaya is one man handled library. The human element is very important in implementing an automated system .The human skill of different fields is needed for different types of works. In Kendriya Vidyalaya Librarian alone is playing all the role .In general the coordination and association of:-

- The library staff,

- Administrative and governing authorities,
- Regulatory agencies ,
- Purchasing departments ,
- Computer center personnel,
- Vendors ,
- Consultants and attorneys,
- Other libraries, and
- The library users are essential for library automation.

7. CHECK LIST FOR LIBRARY AUTOMATION

The followings are the check-list of library automation:-

- Proposal for library automation ,
- Provision of budgetary aspect,
- Computer hardware ,software and other peripherals needed,
- Human skills needed for different works ,
- Time target for different steps and completion of works ,
- Provision of alternate library services during automation period ,
- Vendors and agreement with them ,
- Hardware maintenance agreements ,
- Professional trainings to library personnel.

8. MANGEMENT OF LIBRARY AUTOMATION IN KENDRIYA VIDYALAYA

Management is an important aspect for achieving perfection in any job. Management of library automation includes planning, implementation and evaluation of library automation.

The proper management of automation helps the library to avoid some of the hazards of automating too much, automating too little, automating the wrong aspect of library or trying to automate without necessary support needed. For example before finalizing the library software it should be kept in mind whether following aspects are going to be fulfilled properly or not by the software:-

- AUTHORITY CONTROL: It is used to maintain constant standard for specific searching at the local level and also at the union catalogue ;
- ACQUISITION: There should be proper provision for themaintenance of acquisition works -. approval ,selection ,ordering, accessioning ,billing etc.as per professional need ;
- CIRCULATION: System has provision of charging and discharging of documents and fool proof security;
- CATALOGUING: MARC record should be allowed to be copied from different sites;
- REPORTS: It should behelpful to give report, such as overdue, holdings, fines, circulations, statistics, lostitems, category wise documents etc.
- STOCK VERIFICATION :It should have a suitable system of stock verification ;
- UNION CATALOGUE: For copying of bibliographic record union catalogue is used, it saves the time and man power;
- ELECTRONIC RESOURCES: The software should support the access to electronic resources under network environment;
- REGULAR UPDATE: The software should have the facility to cope with the latest challenges arising, etc.

9. THE FEASIBILITY STUDY

The major feasibility study includes:-

- Technical feasibility study,
- Operational feasibility study,
- Economic feasibility study,

Under technical feasibility study, the following aspects are considered:

-Whether hard ware and software are suitable,

- The technical guarantee of accuracy, reliability, security, backup, etc. are up to the mark.

Under operational feasibility study it is examined that the system which is going

to be implemented is suitable for parent organization's environment and suited to the personnel employed.

Under economic feasibility, as all the libraries are facing the challenge of shrinking of budget and raising the cost of materials. Therefore, it is studied that whether the proposed system is economically viable to the organization or not.

10. SERVICES OF CONSULTANTS

The services of consultants are helpful to know all the aspects from beginning to end of automation. It plays role like an architect in construction of apalace. The important thing to remember is that when we hire a consultant, we are entering into a partnership with knowledgeable professionals with the skill and experience necessary to the success of project. As all the fields of work which are covered during the automation go beyond the library staff experience and expertise .A consultant can guide regarding proper data collection method, evaluationprocess, the system we purchase is not under configured from the outset and will guarantee, that our performance, expectations are compatible with the system being purchased and adequate for long term.

The following areas can also run under supervision of consultant and get benefited:-

- Benchmark test of system which is going to be installed .It includes system reliability test ,functional performance test ,full load response and time test;
- Priority of retrospective data feeding as per institutional need ;
- Time line to perform step by step automation work ;
- Guidance to library staff as and when needed.

11. THE HOUSE KEEPING WORKS AND AUTOMATION

The library house-keeping jobs cover all the related works of the library which are categorised into Admin , acquisition ,cataloguing ,serials, micro- documents , budgets , and search e .A brief discussion regarding automation of major section are discussed below.

12. ACQUISITION

The works of acquisition covers, recording and maintaining files of document ordered for library .Purchasing of new items is a regular feature of any library .In automated system the related records of acquisition section is maintained mechanically and relational database prevents duplication works .For example, in e-granthalaya ,the related works are covered through following access points – author directory, check duplicate title ,add new title add acquisition record , general approval ,update approval ,add order details ,general order, receive documents ,accessioning ,add bill details and add payment details .Due to ever increasing use of ISBN and ISSN,the automation works of acquisition have become most popular and at reasonable cost .Asuitable system allows the following works :-

- Maintains record of acquisition ,
- Verification of bibliographic data of required items ,
- Duplicate checking –whether the items are already available /under process or not ,
- verification of price ,
- Minimise repetitive works of ordering and prepare orders ,
- Encumber the correct amount of money ,
- Maintains claims for late or non-delivered items,
- Maintains and updates the on ordered /in process file ,
- Receive the orders and check the completeness of orders'
- Prepare payment authorisation forms and orders ,
- Maintains the needed financial and statistical reports.

13. CATALOGUING

Under technical works the cataloguing section attracted much to the librarians for application of computer .It made possible more work in minimum manpower.E granthalaya covers the cataloguing works under following headings –retro conversion ,full cataloguing ,change copy status, update holdings ,status wise collection ,stock verification , general bar- code labels .In general, any system should have the following capabilities :-

- Provision of large database to incorporate large amount of titles,

- Can give cataloguing product such as –card, computer output microfilm, book catalogue and catalogue on machine readable magnetic tape,
- On line access to the database,
- Provide online authority control to ensure all entries of the database are consistent in their use of proper forms of names and subject headings,
- It should follow the high standard of quality and latest cataloguing rules ,
- Provision to show cataloguing online and modify the cataloguing as per local rule ,
- Provision to incorporate such data so that required statistics can be generated.

Yet there is not any system which is full proof to perform all the cataloguing works, even then automation has played a vital role in technical works of libraries.

14. SERIAL CONTROL

Management of serial is the most challenging task in library field .Its nature of change from time to time,subscription, titles, frequency,billing, binding after completion of volume, etc. varies from time to time. Under automation, the system has facilitated the maximum serial management works .Automated serial management covers the following areas:-

- Duplicate checking and maintaining of records of new serials,
- Allows for ordering ,renewing and cancelling subscription ,
- Allows cataloguing of serials,
- Allows to find out missing issues and generates its reminders ,
- Maintains binding records ,
- Maintains budgetary records.

15. CIRCULATION

The circulation section maintains the record of charging and discharging of documents .Automated circulation management keeps the record of member's registration, issue, renewal, return and reservation of documents .A unique member code is given to each member of library. User card is given to all the

users. At present bar codes are also being used in libraries for issue and return of documents .The details about position of document ,when ,by whom ,and in what quantity material have been borrowed, returned ,renewed, requested, damaged ,lost or stolen ,heavy used books and rarely used books are also identified.

16. INFORMATION SERVICES BASED ON AUTOMATION

Beyond above house-keeping works, amodern library and information system refers various kinds of information services to its users in anticipation and also on demand .The important services are Current Awareness services (CAS), Selective dissemination of Information Services (SDI) and Electronic Clipping Services,etc.

Online bibliographic search service seeks to mount of range of database prepared to meet the requirements of a specific users and it acts as an intermediary between the database producer and the end user .These databases include both the bibliographic and document database .The type of on line search services include the traditional supermarket service, specialist search services publishers and bibliographic utilities. Online search makes use of search of index terms and command language and interfaces.

In the age of information explosion, it is not possible for any library to subscribe or procure all the relevant documents in a subject .Therefore document delivery serviceis a must. The automated system has facilitated users such a services that they are benefited at any corner of the world.

17. CONCLUSION

Automation of library means application of computer and communication technologies in library works to provide quick, quality and reliable services. It is a skilful technical work. It needs proper planning as per requirement of concerned library, sufficient budget, training to staff, administrative support, step by step implementation and overall zeal of modernisation and a change. in kendriya vidyalaya libraries e granthalya software is adopted .libraries are handled by single librarian .Therefore it is expected to the librarian to have jack of all library automation skills . Library blog has become usefill tool for dissemination of information .

REFERENCE

1. Duval, B.K and Main(1992).*Automated Library System;*A Librarians Guide

and Teaching manuals .London: Meckler.

2. Salmon,Stephen.Library Automation .In: encyclopaedia of Library and Information Science.vol.14.New York: Marcel Dekker.
3. Lovecy,In (1984).automating Library procedures-A Survivor'sHandbook. NewDelhi;D K Agencies (P)Ltd.
4. Sharma,Pandey, S. K.(1995).library automation .In: Fundamentals of Liobrary Automation .New Delhi's;EssEsspublications.
5. Sharma, Pandey, S .K. (1999).*Library Automation System.In: Encyclopeadia of library automation System and Networks.Vol.4.Organisation of library Automation*. New Delhi: Anmol Publications Pvt. Ltd.
6. Retrospective Conversion: Guidelines for libraries.
7. Kumar ,P.S.G.(1987)Computerisation of Indian Libraries .Delhi. B.R.publishinghouse .

Marketing Of Library Resources, Services And Products: A Case Study Of IIM Lucknow

Ms Simran Gupta

Prof Asstt, Education Library
Dayalbagh Educational Institute
(Deemed University), Dayalbagh, Agra (UP) India
E-mail: proficientsimran111@gmail.com

Dr Mange Ram

Deputy Librarian & I/C
Central Library
Dayalbagh Educational Institute
(Deemed University), Dayalbagh, Agra(UP) India
E-mail:mram72ster@gmail.com

Abstract: The present paper explores the concept of marketing in general and in library. In the present papers authors discussed the marketing strategies and products in IIM Lucknow library. IIM library fulfilling the requirements of their customer (users) by applying the information technology in an effective way. The present paper explored all marketing products of IIM library for their users.

Keywords: IIM Lucknow, Gyanodaya Library, Library Marketing, Information Technology

1. Introduction

Now technology has changed and allowed ever new ways of creating, storing, organizing and providing information, customer expectation and the role of Libraries has increased. Now the users want information quickly, they want full text of a document instead of a citation to it, and they want information that clearly answers their questions. Library's prime function is to satisfy the complex and increasing demand for information products and services. If the customer is not satisfied with the particular Library then he/she certainly will go for the other alternate as Internet and other Library[1].

1 Mange Ram, (2005) 'Marketing of Information Services in Libraries' in a Book 'Information Technology for e-libraries. Raj Publishing, Jaipur, p. 224-231.

2. Gyanodaya Library, IIM Lucknow

IIM Lucknow is a global center of excellence, in the field of management. This institution is the fourth in the prestigious IIM family of management schools to be established in India. It is also ranked 4th with 71.58 scores given by National Institutional Ranking Framework (NIRF) of Ministry of Human Resource Development (MHRD) in the year 2017 after IIM Ahmadabad, IIM Bangalore and IIM Calcutta. IIML aesthetically designed campus has a beautiful and renowned learning resource center Gyanodaya Library. The IIML Library System comprises of a Gyanodaya Library and one IIML Noida Campus library that collectively cater the needs of teaching, research, management development programmes, executive programmes and training programmes of the institute. Gyanodaya Library has an enormous qualitative collection of about 1.25 lakh information sources including books, reference books, gray literature, theses, reports, CDs, microfilms, bound volumes of journals, databases, journals (online+print), e-books related to the field of management, marketing, commerce, IT, English literature, Hindi etc. The faculty, the staff, spouses of both, kids of both and students are members of the library apart from corporate and alumni. This literary treasure is the member of e-ShodhSindhu consortium which came into existence after the merger of three major consortia viz- UGC-INFONET Digital Library Consortium, N-LIST, and INDEST-AICTE consortium.

3. Library Marketing

Libraries spend a huge amount of funds in their collection development as storing, processing and dissemination of information in available resources. Marketing means optimum utilization of information resources and identifying the customer by many means. Marketing helps the Libraries in optimum utilization of their resources to identifying the customer. User's satisfaction is the central point of any types of Library. Marketing identifying the reasons of dissatisfaction of the customer by survey, questionnaires etc. and suggests the solutions of the problems and leads to the Libraries to continuous improvement in their services operations etc.

Now in the changing environment or in digital era the user expectation has increased due to huge amount of publication, research on complex and interdisciplinary subjects. Without adopting the new technology as computers, Internet etc. in their services Libraries cannot perform their functions correctly and cannot fulfill the reader's increasing requirements and expectation. "The products and services of Library and information centre can be promoted in three

ways, through packaging of products and promotional activities and personal means (Libraries and Library staff doing in personal way)[2].

Marketing helps the Libraries in adopting the new technology for performing better services to the customer.

P. Kotler's view of marketing is, "the analysis, planning, implementation and control of carefully formulated programs designed to bring about voluntary exchange of values with largest markets for the purpose of achieving organizational objectives"[3].

According to Mathews "Marketing is an activity directed as satisfying need and wants or offering a perceivable benefit to the consumer through an exchange process[4]".

4. Library Marketing in IIM Lucknow

IIML Gyanodaya Library is providing different services and products to their users as mentioned below:

5. Gyanodaya Library Web Portal

A library web portal is the strongest and the most efficient apparatus to elaborate its functioning, explain library resources, information services, and information products. With the help of library website, a user can fulfill all his queries regarding library system; it's functioning, rules, regulations, library hours, library staff, new databases, journals and books acquired by the library immediately. This knowledge reservoir has maintained a website (Exhibit 1) to complete all these motives smoothly. It updates its website regularly to keep in touch with patrons, to sustain its powerful image and strong position among its clienteles for marketing its products and services smartly.

2 Nikam, K. Laiser and Talwar, V.G., (1999). Application of marketing principles in Libraries and information centers in Vistas in Library, information systems and networks, Venugopal, M.V. and others (editors), Agra, Y.K. p. 257-292.

3 Kotler, P. (1982). Marketing for non-profit organization, New York, Prentice Hall

4 Mathews, Anne J. (1984). The use of marketing principles in Library Planning in Marketing for Libraries and Information Agencies, Ed. By D.E. Wainganga, New Jersey, Alex, 1984



Exhibit 1. Web Portal of Gyanodaya Library, IIM Lucknow (IP based- 192.168.1.13)

6. E-resources

The knowledge bank of IIM Lucknow acquired 414 e-journals (Exhibit 2) including 132 Indian periodicals and 282 overseas journals, ProQuest EBook Central (Exhibit 3) which comprises e-books on business, economics, computer science, IT, anthropology, commerce, management and many other subject fields. This knowledge bank subscribes 58 e-databases (Exhibit 4) and 17 from e-ShodhSindhu. For providing simple & seamless access, this library system categorized its databases into four categories (Exhibit 4) which are as follows-

a. Corporate database (Business Monitor Online, Crisil Research, Prowess, IBID, Euromonitor, etc.)

b. Database of e-journals (ABI INFORM Online, Econlit, ACM, IEL, Informs, Taylor & Francis, InfoSci Journal, Emerald, Wiley InterScience, Elsevier, etc.)

c. Indian statistical & economic database (CapEx, India Trades & IndiaStat.com)

d. Legal database (Judgements Information System, SCC Online & Westlaw India)

This library provides its online resources accessible via four different channels as access through IP address, CD Server, password and available only in the library (See exhibit 5). Gyanodaya Library has a rich and renowned collection which enhances its importance among its library patrons. This learning resource center also subscribes a unique e-news database (Exhibit 6) named Library Press Display

by Press Reader which provides seamless access of near about 4000+newspapers and magazines in 60 different languages from 100 countries over the globe. These e-resources cater the information needs of clienteles seamlessly, quickly, beautifully and comfortably. Gyanodaya Library is a member of the e-ShodhSindhu consortium, and it also gets access to 17 databases from this consortium (Exhibit 7). For maximizing its usage this learning resource center takes user statistic from publishers annually and display it on the notice boards and also upload in the Gyanodaya Library Web Portal. This knowledge bank also prepares poster which illustrates whole scenario of library resources, services and products investment, usage and growth,



Exhibit 2. E-journals subscribed by Gyanodaya Library

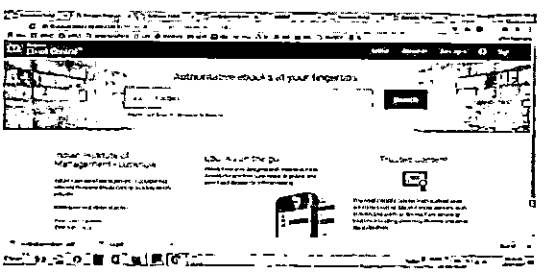


Exhibit 3. E-books subscribed by Gyanodaya Library

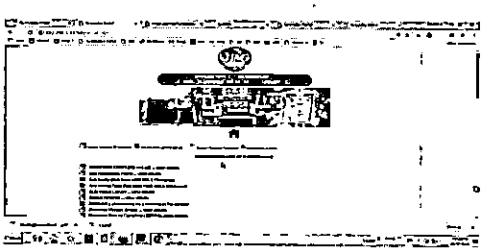


Exhibit 4. E-databases subscribed by Gyanodaya Library

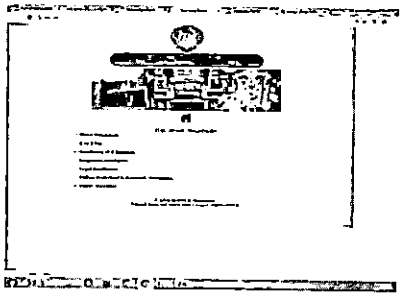


Exhibit 5. Categorization of databases @ Gyanodaya Knowledge Bank

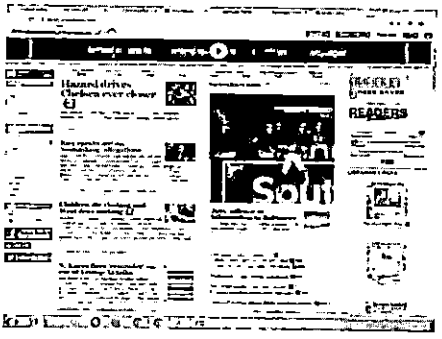


Exhibit 6. E-news database subscribed by Gyanodaya Library

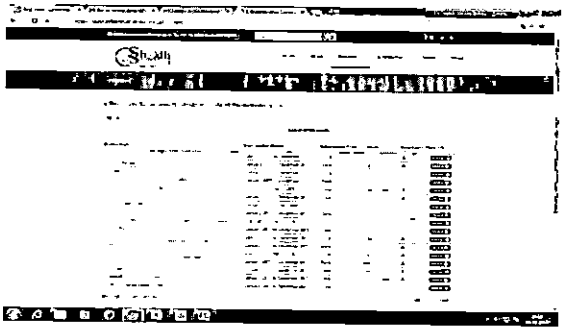


Exhibit 7. E-resources subscribed for IIM Lucknow through e-ShodhSindhu (www.inflibnet.ac.in/ess/eres.php?memID=347)

7. WebOPAC

IIML Gyanodaya Library has maintained a union catalog which includes holdings of Gyanodaya Library & IIML Noida Campus Library. This online union catalog is available on the intranet at http://192.168.1.94:8480/opac/ (Exhibit 8). For enhancing its search facility this library system installed a setup for WebOPAC searching including two computers (Exhibit 9)

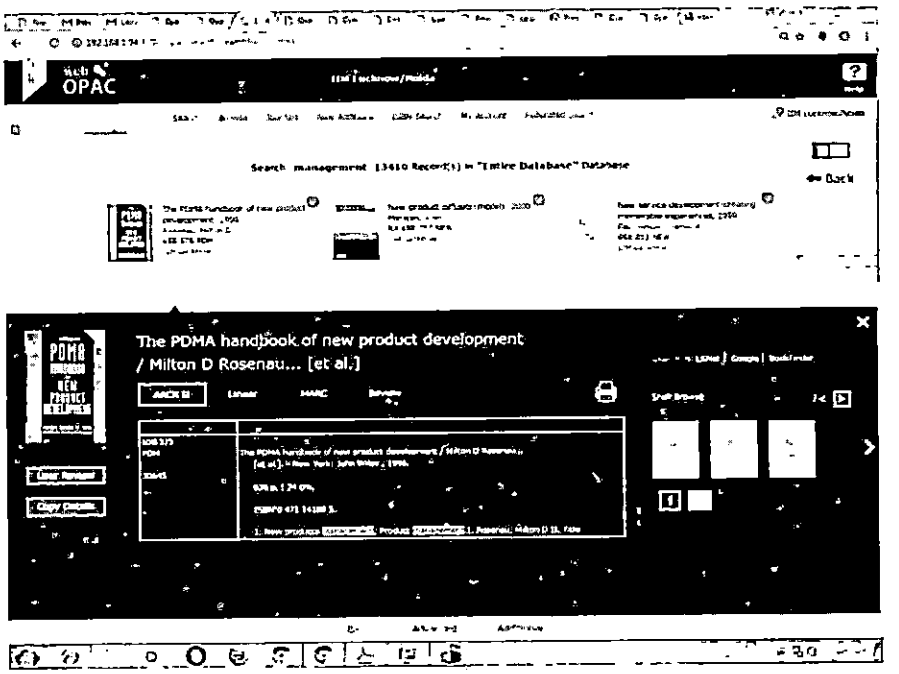


Exhibit 8. WebOPAC/ Union Catalogue maintained by Gyanodaya Library



Exhibit 9. WebOPAC area @ the Gyanodaya Knowledge Bank

8. Discovery Service

For getting more relevant and precise search within few seconds, Gyanodaya Library subscribes Summon discovery service (Exhibit 10 and 11), to facilitate its patrons' hurdle free. This discovery service has unified index to WebOPAC, databases, e-journals, e-books, e-magazine, etc. This unified index provides a single search window facility to its clienteles for accomplishing the fourth law of library science (To save the time of the reader).



Exhibit 10. Single Search Window facility at the homepage of Gyanodaya Web Portal

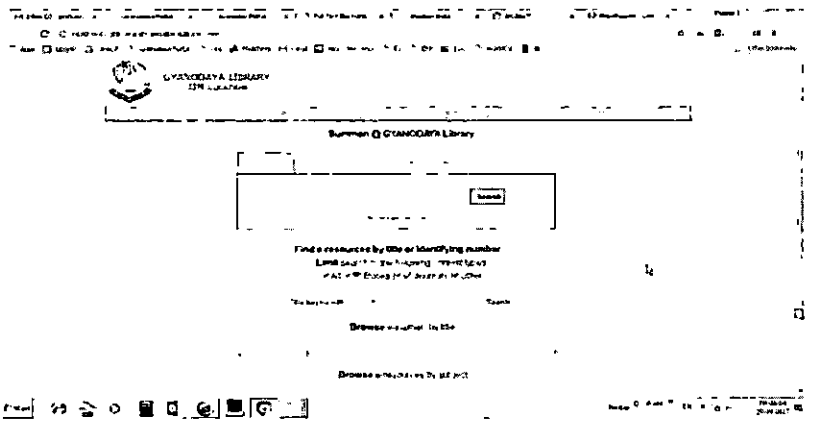


Exhibit 11. Summon discovery service at Gyanodaya Library

9. Audio-Video Library Service

This knowledge repository contains 361 videos for providing seamless information access to library users. Many commemorative stories of renowned managers, CEOs, MDs, many influencing movies, many lectures by eminent professors and

veteran personalities of various fields, many class lectures, and many important interviews are available in video (Exhibit 12 and 13) form which is stored in CDs & makes accessible in the web through WebOPAC.

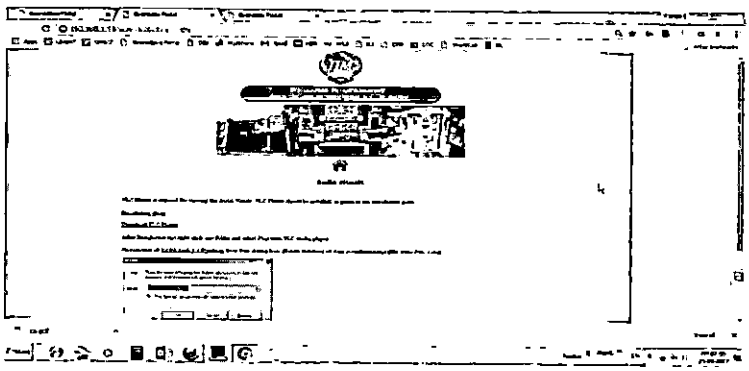


Exhibit 12. Process of accessing Videos @ Gyanodaya Library

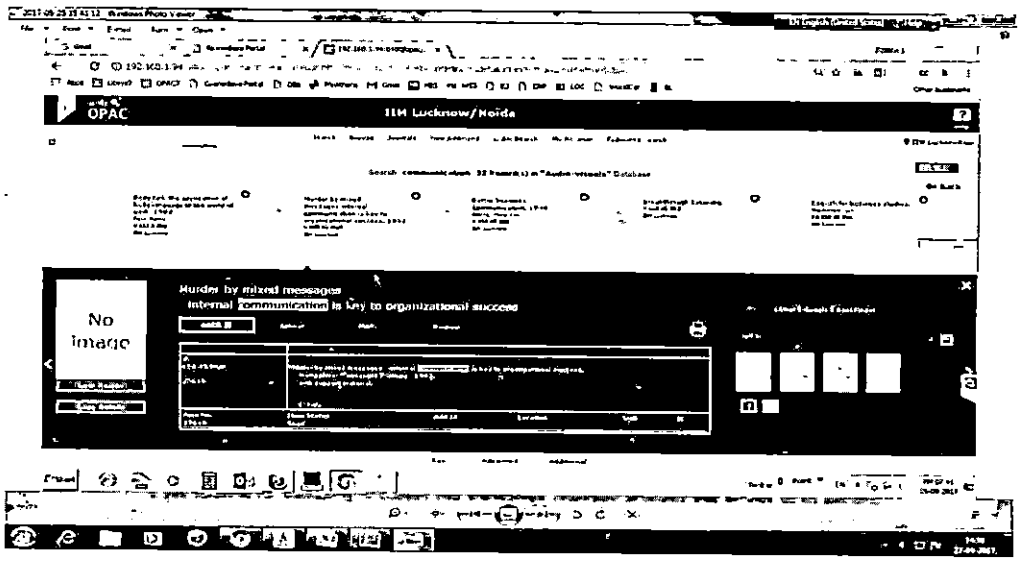


Exhibit 13. Videos available through WebOPAC

10. Inter Library Loan Service

To get a solution for dwindling in the budget, this knowledge reservoir provides this service to its patrons. As IIML Noida Campus Library is a part of IIML's Gyanodaya Library consequently, it provides ILL service to both of the libraries users. Gyanodaya Library is also the member of DELNET (Exhibit 14), so it also arranges unavailable information sources which are available DELNET on inter-

library loan request basis.

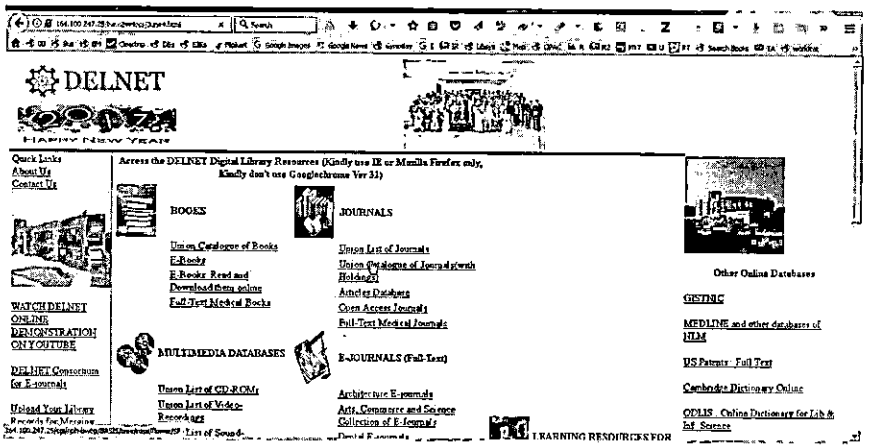


Exhibit 14. Screenshot of DELNET interface

11. List of Current Additions/CAS Bulletin

Technical section of this knowledge bank prepares CAS Bulletin (Exhibit 15), in the reference of current additions for its clienteles bimonthly. This bulletin has also been uploaded in the Gyanodaya Library web portal regularly under information services option. A user can also access recent additions through WebOPAC (Exhibit 16). Library also maintains new arrival racks and books are displayed for fifteen days in those stacks before placing them in the exact location. Acquisition Section also sends a circular mail to the recommender for borrowing that document and library wait for three days after complete processing of the book and reminder circular email.

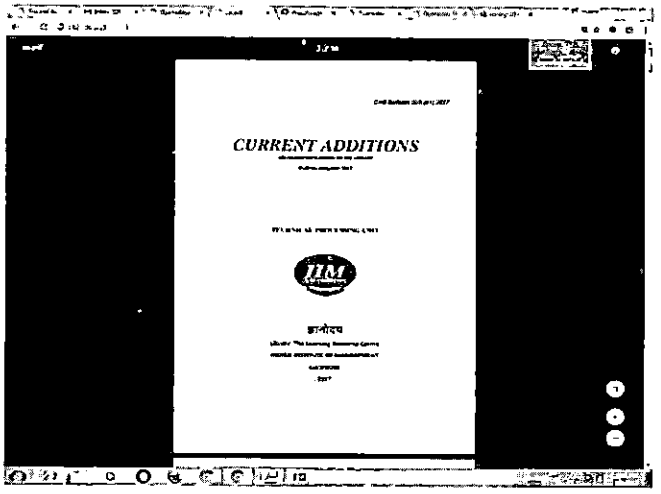


Exhibit 15. List of Current Additions/ Bimonthly CAS Bulletin

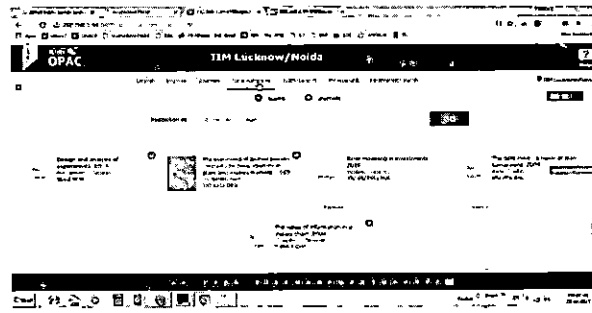


Exhibit 16. Current Additions available through WebOPAC

12. Internal Library Extension Service/ Reading Beyond Curriculum Service

To attract its patrons and to enhance the usage of information resources Gyanodaya Library learning resource center prepares a unique list which contains three interesting sections which are as follows, to attract its user beautifully-

a. Indian College and Campus Literature (Exp- Watch out! we are MBA: a novel, five points someone: what not to do at IIT, Second degree: one crazy year at IIM-A, etc.)

b. Management Novels/ Parables (Exp- A better India, a better World, Beyond the bottom line, the deadline, A business tale, Heroz, High five, It's not luck, etc.)

c. Management Humour and Irreverent (Exp- Eat or to be eaten, joy of work, piece of crack, etc.)

A user can download this file by clicking the link which is available on the home page of Gyanodaya Web Portal (Exhibit 17). A physical hard copy of this file is also available 24x7 at the lobby reading area of the library.

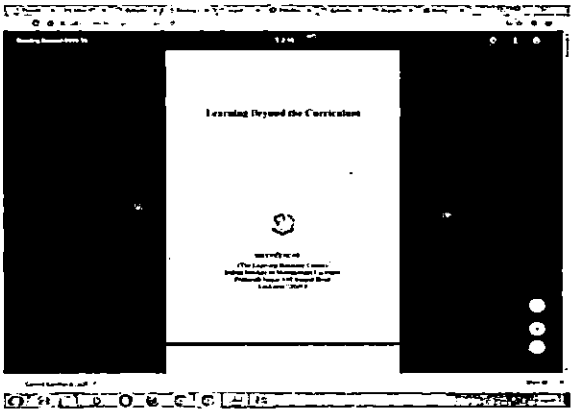


Exhibit 17. Internal Library Extension Service/ Learning Beyond Curriculum List

13. E-news Clipping Service

Gyanodaya Library provides daily personalized current awareness service, e-Newspaper clipping service (Exhibit 18), to the higher authority of the institute and some specific users as per requirement. The reference section of this library provides this service. The reference professionals acquire, ferrets and collect valuable, beneficial and fruitful news from authentic and reliable news sources as e-magazines, news portals, websites and e-newspapers by pre-decided keywords to keep up-to-date to the users. It's a daily e-CAS which runs digitally. It prepares in softcopy, delivers to end-user by daily email and stores its softcopy in external hard disk for future reference.

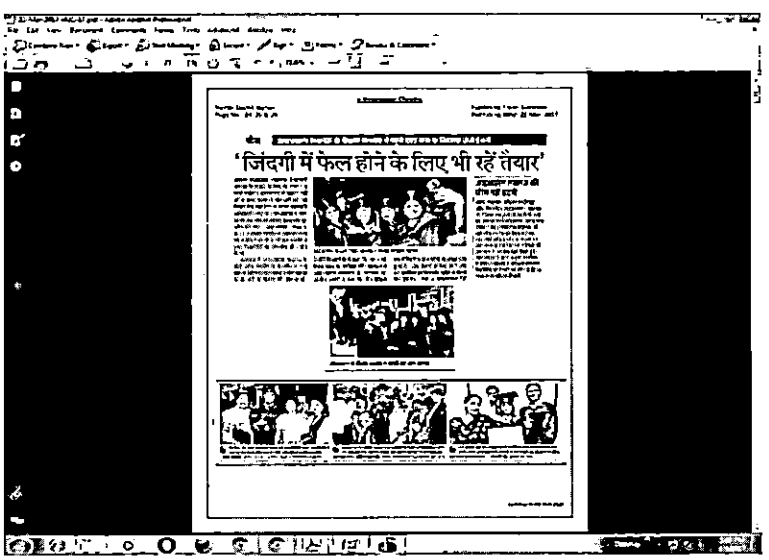


Exhibit 15. Screenshot of e-Newspaper Clip

14. Remote Access Facility

To implement all five laws of library science effectively Gyanodaya Library System of IIM Lucknow provides remote access facility to its clientele. For providing hassle-free information web environment to its patrons without the barriers of time and place this learning resource center provides remote login services via Athens remote access account (Exhibit 16) and sometimes via TeamViewer software.

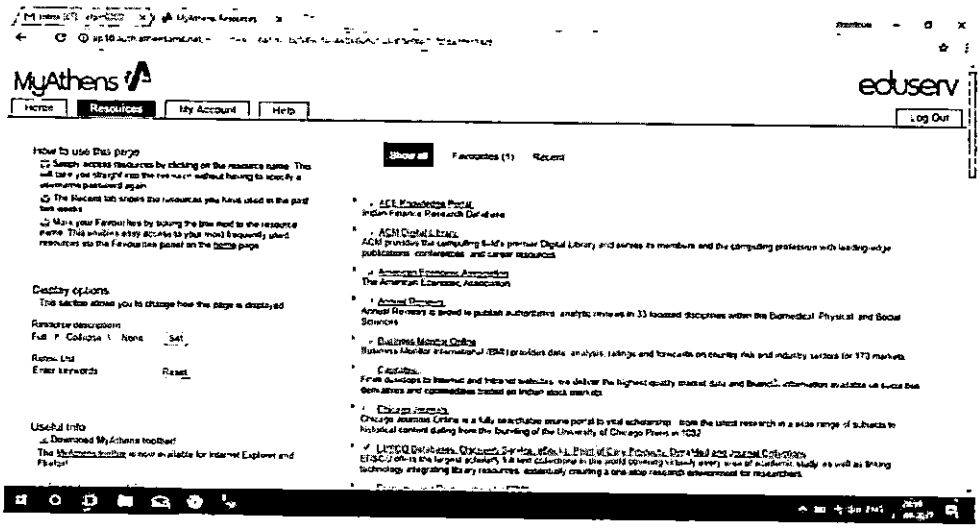


Exhibit 19. Athens remotely accessed account screenshot

15. Doctoral Theses and Gray Literature

Theses and gray literature of any research institution are the most valuable, pure and authentic output. This knowledge treasure gives complete bibliographic details of these documents via WebOPAC (Exhibit 20). A user can consult these bibliographic details to get the exact study material without waste his/her precious time in other irrelevant documents.

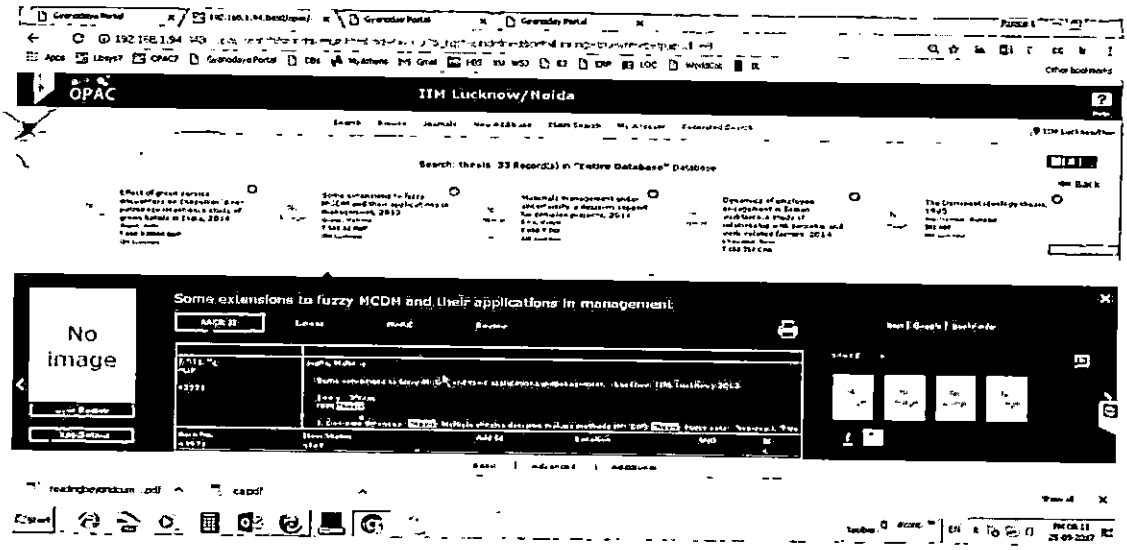


Exhibit 20. WebOPAC interface for theses and case studies

16. Atmospherics

For providing healthy reading environment and to enhance readership in the library, this knowledge bank contains all necessary and advanced features as- this library offers 24x7 reading area (Exhibit 21), this library is fully air-conditioned, this library has installed RFID facility (Exhibit 22) for an easy lending of books, proper light facility, appropriate indicators & signage's, pure & chilled water facility, excellent & comfortable furniture arrangement including research carrels for research scholars, juvenile furniture for its juvenile library members at Children Section, reprographic facility, audio-video lab facility, video conferencing facility, seminar hall and other suitable facilities.



Exhibit 21. Reading area at Gyanodaya Library



Exhibit 22. RFID Gate @ Gyanodaya Library

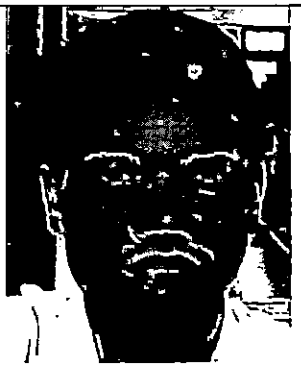
17. Conclusion

Libraries aim is not making profit as like in other organization but the application of marketing in Libraries certainly improve the services of Library and maintain a good status of Libraries. Marketing is a better way to know the requirements of the users and to achieve the goal of Libraries and parent organization. IIM library is applying marketing concept in their services and products very well. In other libraries of India there should be systematic application of marketing concept and overcome the barriers in the way of marketing. The Govt. and parent organization should inspire the Libraries in application of marketing of information services.

Bibliographies

1. Hasan, N. & Azim, M. (2017). Paradigm shift in Resources, Services and Products: A case study of Maulana Azad Library System, AMU Aligarh. *MANLIBNET International Conference on Library Technologies, Services & Resources: Current global trends.*
2. http://www.iiml.ac.in/ retrieved on 10-Oct-2017
3. https://www.inflibnet.ac.in/ess/eres.php?memID=347 retrieved on 09-Oct-2017
4. https://www.nirfindia.org/ManagementRanking.html retrieved on 10-Oct-2017
5. Khanchandani, V., & Hasan, N. (2016). Marketing of library resources, services and products: A case study of IIT Delhi. *DESIDOC Journal of Library & Information Technology*, 36(3), 158-163. Retrieved from http://publications.drdo.gov.in/ojs/index.php/djlit/article/view/9813/5601

Authors Profile



Dr. Mange Ram is did his M.A. ,M. Lib. & Information Science from Kurukshetra University, Kurukshetra, IDC (Integrated Diploma in Computer), , and Ph.D. in Library & Inf. Science. His research interests are User Studies, Total Quality Management in Libraries, Open Source software and Stress Management for Librarians. He has an administrative experience of 19 years. He holds membership of Indian Association of Special Libraries & Information Centers (IASLIC), Indian Library Association (ILA), Society for Advancement of Library and Information Science (SALIS), Haryana Library Association (HLA), Society for Information Science (SIS), Indian Association of Teachers of Library and Information Science (IATLIS) etc.

Dr. Mange Ram has authored 6 books (including one book published LAP-Lambert (German), 14 invited book chapters and 43 articles. He attended many National International conference, seminars and workshop etc. He is actively engaged in academic work of many reputed universities. He is also Managing Editor of JLICT (UGC Approved Journal) published Online and Offline. He is the joint editor of International Journal of Library and Information Management (ISSN: 0975-878X). He is also editor of INTERNATIONAL Journal of Digital Library Services (IJODLS) ISSN: 2250-1142. Now he is working as Deputy Librarian & Incharge at Dayalbagh Educational Institute (Deemed Univ), Agra (Taj City) INDIA.

E-mail: mram72ster@gmail.com



Ms. Simran Gupta is working as Professional Assistant at the Education Faculty Library of DEI (Deemed University) Agra. Prior to joining DEI, she worked as Research Assistant Library at Gyanodaya Library of IIM Lucknow. She also worked as Library Intern at the Central Library of IIT Delhi before joining IIML. She holds the bachelor degree in Art, Bachelor of Library & Information Science, Master of Library & Information Science and PGDCA. She is a recipient of Gold Medal for being a topper in B.Lib.I.Sc. She has participated and involved in various national and international conferences, seminars and symposiums. Her realms of interest are- Digitization (she worked in the ETD project of IIT Delhi), virtual reference service, marketing of LIS products, e-resource management, and IR.

Email: proficientsimran111@gmail.com

Preservation and Promotion of Library and Information Services in Social Era

Mohit Gupta

Student
DLIS, Bundelkhand University Jhansi , India
mohitg1407@gmail.com

Vinay Pratap Tiwari

Student
DLIS, Bundelkhand University Jhansi, India
vinayprataptiwari@gmail.com

Chanchal Rai

Student
DLIS, Bundelkhand University Jhansi ,India
Chanchalrai995@gmail.com

Abstract : One of the challenging task for the libraries has to promote and preserve their services and Information for long time by increasing their no. of patrons. Now-a-days social media is being very popular among the patrons throughout the world due to the easiest way to connect with each others. Social media is playing vital development of libraries and providing a portal to discuss and to disseminate the information. A large audience has connected through the social media that increase the area of library services and also being a medium to avail the library services globally. So to go with the main stream of ICT (Information and Communication Technology) Era libraries should also go with the social trends. The Social media has a big list of advantages for library services but these depend on some factors for making promotion successful like good content, know the audience, consistency in posts are being discussed in paper. Social media can also be used for analytical purposes and to user study.

Keywords: Social Media, Social Library Channels, Channel Guidelines, Facebook, Instagram, YouTube, Social Preservation.

1. Introduction

Development of social media and its services has changed the whole online world dramatically in some past decades. Social media is not a new approach or channel, In the early days of web in 1990s classmate.com was started and then my spaces in 2003 based on these two site it can be noticed that social media is about to

twenty years old .This is one of the best tool and service of web 2.0, where users not only can get information but also can generate as well as share. Social media channels are creating a dynamic environment on the web, almost every major as well as minor both type of organization, business or brands are using the powerful social channels to promote their services. Since the user of social networking sites are being increase rapidly (fig.1), there is a huge amount of information has been being published on the social media and this is also being used by a large number of libraries around the globe to broadcast, share and to disseminate the information. Libraries are promoting, their services to the users and also to the non users.

These social media channels provide a unique platform to library where every social site user can get updated with library that provides a boundary less and unrestricted platform. Since libraries play a vital role in providing formal as well as informal education the powerful social channels can help them out to accomplished their service and these channels also can be used as medium of preservation of frequently ask question , request and of the broadcasted information.

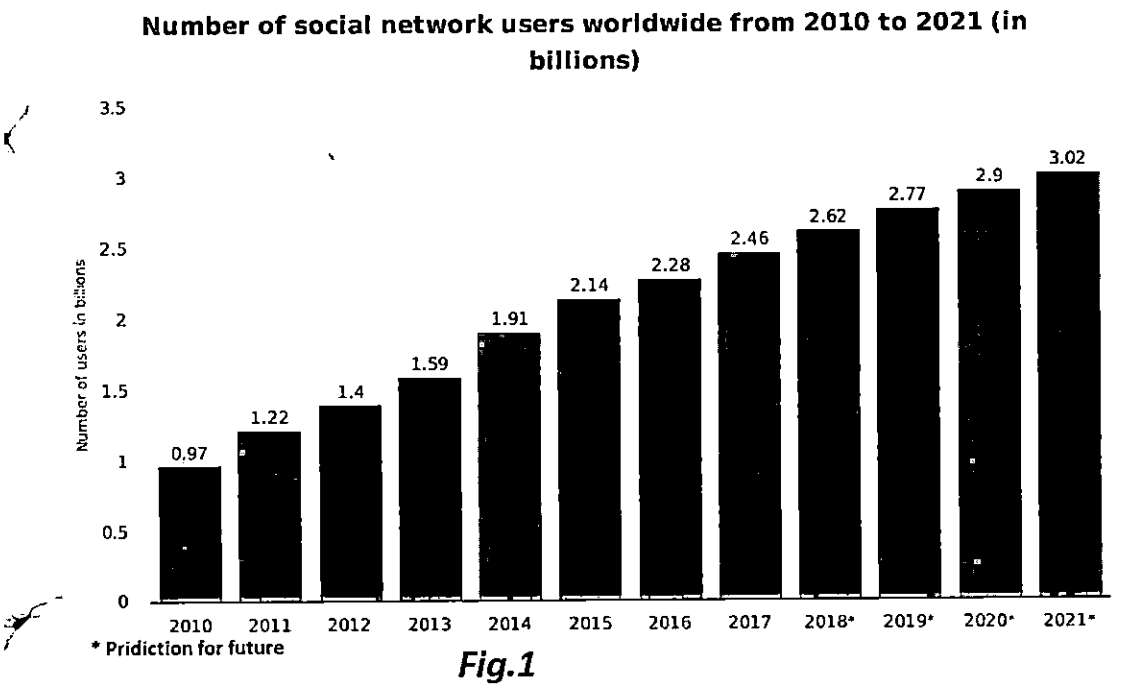


Fig.1

2. Why Social Media In Libraries?

The primary objective of any library or any information centre is to provide, promote and preserve these collection online as well as offline. The social media channels are currently being very popular among youth and over 3 billion people will be connected by these channels. Since Dr. S.R, Ranganathan says in his five laws of library science that "Library is a growing organism" so library should also get updated with all the services in present and with the emerging technology to provide an easy, quick reliable dissemination of information. These technologies also help in implementation of five laws of library science. Social media captured a major part of web and day by day being rapidly increased. Library always focused on providing services to the maximum persons since libraries are social institution.

Now-a-days a majority of patron uses social networking channels to be get updated from there surrounding so all the brands and organization giving importance to it and like others library should also get into it. We can summarize the needs of social media and the social networking channels in following five points.

1.-***Observing:*** Social channel provide a way to observe the need and the general trends. Providing a # tag, post, broadcast, by creating groups, through library page or library's instant massaging app You can observe what the patrons demands and currently in trends, that assist in making plans according to current needs. So observing is one of the best practices for planning.

2:-***Connecting:*** One of the main aspects of many people to use the social channels is to get connect with the people whom they want to know. People also used social channel for publishing their views, thoughts and other event. They comments on the broadcasted post of the various pages of corporate users. Libraries should have create a page on these platform as well as create an account on instant massaging apps through the page library can post the stuff and when user follow the page by subscribing or liking they will get an notification when library upload any information , then it will established a connection between user and library.

3:-***Openness:*** Social platform are open platform any person at any age from anywhere can follow the library page and get update with the library so this will help the library to make the users in every location, because of the rapid increments in user of the social media channels. Everyone who uses internet, is approached social networking directly or indirectly through absence.

4:-***Suggestion :*** Social channels provides comments section for the user to

express their opinion, So library can utilize this feature for taking feedback or suggestion on books acquisition and regarding, services, many library of the world are practicing it.

5:- **Mobile** :- According to statista.com a statistics analyses site, there were more than 4.61 billion mobile users s and 2.1 billon users of smart phone in the year of 2016 around the world . Now-a-days people love their smart devices very much instead of desktop and other gadgets. So that mobiles help the library for the instant delivery of information.

3. Social Media Channels

There is a big list of social networking site and many of them have different feature that makes them unique form other. Some of them are being describe below

1. Facebook: - Facebook is one of the most popular social media platform among the users, facebook has the largest number of users among the other social networking site as shown in fig 5 and has the biggest user database. Facebook allow user to create, share like and comments feature; Users can upload their photos, video, textual post etc. Facebook seems very popular among libraries throughout the worlds, libraries are posting their various activities, like asking users for feedback and also conveying their message to the Facebook users as in fig2 in which New York Public Library providing information user with library card. Facebook is a free platform but for promoting the page to increase the number of likes and the popularity they have to pay Rs. 332 to Rs1327or US$1 to 10 according to gaining the like, here you can filter the user by their age and sex wise. Facebook provide, Facebook audience insight and Facebook page manager for analytical purpose of the page to monitor the post, page and the users and their approach. Facebook is also a medium to preserve and to promote the rare materials, events etc, as this being done by Punjab digital library in fig 3.



Fig. 2



The great antiques heist in Punjab

CHANDIGARH:While digging a mound, a 10-year-old girl discovered a stone sculpture at Mand Khera village in Sangrur in 1980.

TRIBUNEINDIA.COM

Fig. 3

4. YOUTUBE

YouTube is the second largest popular search engine, that is a social video serving platform of Google. YouTube provides a platform to the users where they can upload their video and can reach to their audience , YouTube also provides many features such as , like, unlike , comment and subscribe option to user. If a user subscribe channel and enable to get notification then whenever channel upload any video subscriber will get a notification. Here libraries can create their channel and upload the videos of many activities that are being performed by them like social , events, virtual tour and history of library (as by library of congress) in fig.4

They will be created at once and then accessed by any time but here library have to pay some attention on colour scheme, videos/audios quality and ensure that the fifteen second should be interesting. Youtube provide analytics in the form of view, comments like and the subscribe.



The Library of Congress Is Your Library
34 587 views

Fig. 4

LibraryOfCongress
Published on Mar 12, 2015

SUBSCRIBED 65K

An overview of the history of the Library of Congress.

For transcript, captions, and more information, visit http://www.loc.gov/today/cyberlc/f...st

SHOW MORE

5. WHATSAPP

Whatsapp is different from others ,this is a social platform but here audience is limited and your account can't be accessible to others but through WhatsApp you can disseminates the information rapidly and also can observe the needs of library user by creating different types of subject group and the feedback since WhatsApp hold a big share of social networking platform so we can't deny it.

6. TWITTER

Twitter is a social networking platform that provide user to type only written in 140 letter . And user can attach video, photo with the post. Twitter provide a powerful action of tag and to search any post. So while posting library should also make an appropriate and that increase the number of followers of library. Twitter provide analytical to analyze that content, number of favourite, tweets, retweets and replies.

7. INSTAGRAM

Instagram now a part of Facebook since it is purchased by Facebook, provides a platform on which user can share their photo , video. Instagram may be very useful for library if library post the regular picture of event, study rooms or about any new and interesting book that can create the influence among the instagram

user to follow the library page and to visit the library to get in touch with all events and to study. Instagram does not provide any analytics but you can measure it by number of likes, comment, view on video file. Analysis can also be performed through external software. After creating an account on instagram it must be checked that the accounts in public mode not in the private, so user can check the stuff that is uploaded by library.

8. LinkedIn

LinkedIn is a business focused platform where professional user shares their resume and past job history. Library can also use LinkedIn to be got connected with the professional community but library should remember the every post on LinkedIn should be professional in proper manner or sound like that.

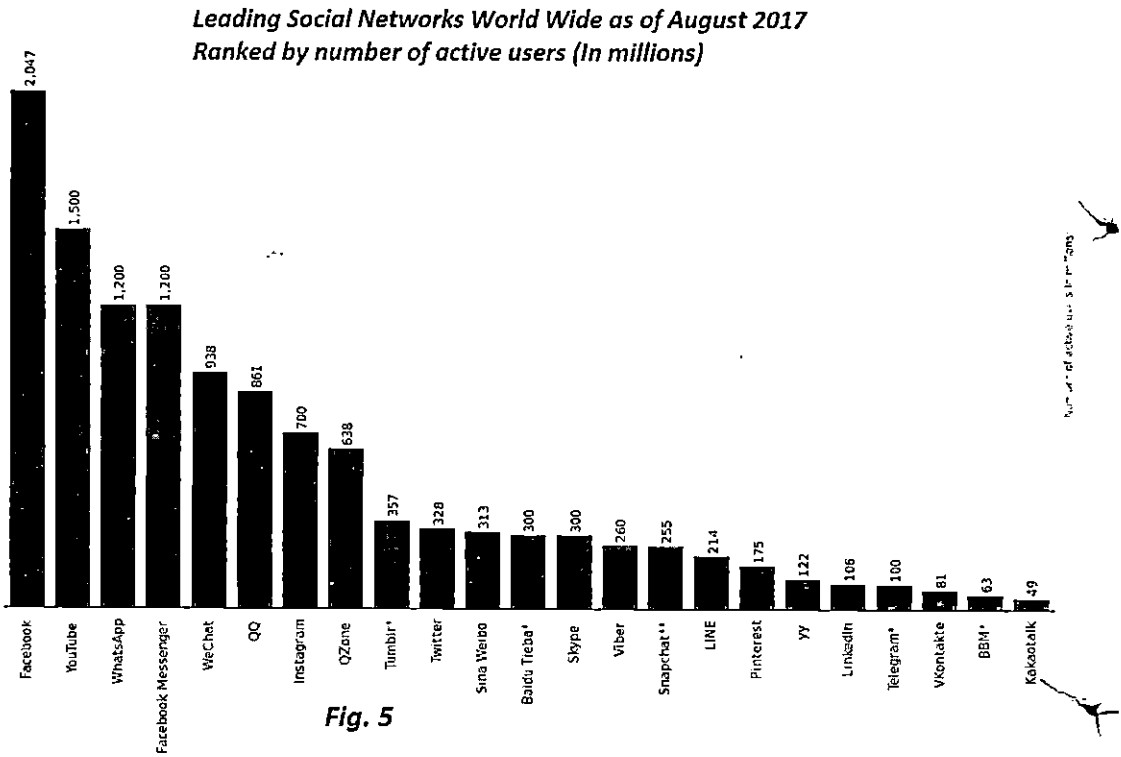


Fig. 5

9. Guidelines to setup a Social Channel for Library

No matter a library how much big or small every library can promote their services via social platform (Facebook, Twitter, Blogger etc.)without paying a single penny.

Here are some guideline to set up a library channel and towards content are being discussed below

- A library page should have an profile picture that can be logo of the library or it's building that will help the user to recognize the page. Page should also have a cover picture that can be from inner stack view of that library or the building.
- Library timing, address and other contact detail should be mention on page.
- The content of the channel is king because the patrons is following the page for the content of the page that should be well enough to describe not so much lengthy or not so short.
- Regular publishing of post, it is noticed that many organization create their social channel first they post much content but after some time they losing their continuity as the result of it, they also loses their followers.
- Content should be relevant, helpful for the humans and in a joyful manner so that increase the interest of user.
- While posting or broadcasting any message library should encourage the user's participation through comments and messages.
- Library should also monitor the comment and the feedback of user and provide them, their answers that increase their faith and interest.
- A list of event should also be posted on channels and on Facebook, library should fill up events, feature to notify the users in a better manner.
- Library should post their photographs of events hosted by library e.g. exhibition, book fare etc.
- There should be a small social media team to regular monitor the content, comments and to post the stuff.
- While posting a video on YouTube channel, library should give their name on the first and the last frame of video and on the photographs the footer note of libraries name.
- Every post should be published by remembering that who is our audience

and for whom we are publishing.

- After creating page library should promote his page online by website as well as offline by notifying there user through pamphlets and verbally.
- In case of publishing a copyrighted stuff take prior written information from concerning body to publish.

Preservation and Marketing:

These channels can be used to preserve the library's material which is being provide through social media e.g. if a video of any event or audio-visual form lectures that library have in C.D. or D.V.D. form are published on YouTube channel that can be retrieved by user whenever they want that can be accessible from anywhere of the world end that increase the popularity of the library and stuff would be preserved for a longer time.

Like any other organization library can also promote and marketise there various activities without paying a single penny but if library want to provide add like promoting then the social networking host charge some money for promoting the page in order to gain likes.

10. Conclusion

Now-A-Days the first approach of users is to get information and every service on their finger tips so to fulfil this requirement of users every organization is promoting themselves online where social networking channels are the most popular because these are most popular among youths, so libraries are also moving towards this way of promotion and getting good results. Libraries always believe ion users' satisfaction that's why library change and accept every emerging and the technology wh'ch is useful for users, so social channels should be adopted by library to provide a better, and reliable way of communication.

References

1. King, David Lee. "Managing Your Library's Social Media Channels." *Library Technology Reports* (Ameerican Library Association), January 2015: 5-35.
2. Pal, AMIT KUMAR, VP KHARE, MOHIT GUPTA, and VISHAL CHAWLA. "SOCIAL NETWORKING SITE: A PRESENT SCENARIO, CONCERN &
3. INTROSPECTION" Impact : International Journal of research Arts And Lit-

erature 5, no8 (2017) :1-8

4. Das, Biswajit, and Jyoti Shankar Sahoo. "Social networking sites-A critical analysis of its impact on personal and social life." *International Journal of Business and Social Science* 2, no. 14 (2011).
5. Bernard, Phyllis E. "Bringing soul to international negotiation." *Negotiation Journal* 25, no. 2 (2009): 147-159.
6. "Most famous social network site ." *Statista* . https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/ (accessed October 6, 2017).
7. "New York Public Library." *Facebook.* https://www.facebook.com/nypl/ (accessed October 8, 2017).
8. "Number of global social media users ." *Statista.* https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/ (accessed January 6, 2017).
9. "Punjab Digital Library." *Facebook* . https://www.facebook.com/Panjab-DigiLib.org/ (accessed October 8, 2017).
10. "The Library of Congress Is Your Library." *YouTube.* https://www.youtube.com/watch?v=63Ze_bpATac (accessed October 8, 2017).

Authors Profile



Mr. Mohit Gupta is a student of M.Lib&I.Sc from Bundelkhand University, Jhansi. He has done B.Sc in Maths, Statistics & Computer scince in the year 2016. He is gold medalist in B.Lib&I.Sc examination in 2016-17. He has attained many National and International conferences and contributed 10 Scholarly articles in journals and conferences. He got a best paper award in NCTL-2017 organized by BABAU, Lucknow. He developed a mobile app and website for Central Library, Bundelkhand University, Jhansi.

E-mail: mohitg1407@gmail.com



Mr. Vinay Pratap Tiwari is a student of M.lib & I.sc from Bundelkhand University, Jhansi. He has done B.lib & I.Sc from the Bundelkhand University in 2016-17.

Email: vinayprataptiwari@gmail.com



Ms. Chanchal Rai is a student of M.lib & I.sc from Bundelkhand University, Jhansi. She has done B.lib & I.Sc from the Bundelkhand University in 2016-17.

Email: chanchalrai995@gmail.com

Public Libraries of Lucknow: A Boon for Academic Community

Dr. Subhash Chandra

Asst. Librarian
M.J.P. Rohilkhand University, Bareilly-243006
E-mail: s73chandra@rediffmail.com

Abstract: For the dissemination and promotion of the knowledge and information to the common person, libraries play a very significant role that is why Public Libraries are existed in the Lucknow city. This paper discuss the concept, functions, shortcomings of the public library, Uttar Pradesh Public Library Act, etc. in the present situation.

Keywords: Academic community, Public libraries, Uttar Pradesh Public Libraries Act, Lucknow.

1. Introduction:

Libraries are the major sources of providing equal, safe and reliable access to information. It is a community centre for constantly transmitting knowledge to individuals. It is an important hallmark of a developed society and works as a catalytic agent to propriety. The development of the institution of library is a natural and logical outcome of corresponding developments in different spheres of human knowledge [(1)].

A public library which is very often called a "peoples' university" is a democratic institution operated for the people by the people that conserves and organizes human knowledge. The scope or command of a public library that meets not specific but general requirements of the public thus remains quite broader in its vision. It differs from the other types of libraries in that by offering opportunities of informal self-education it inculcates reading habit amongst all types of general readers and, as a consequence, maintains a sizeable collection of light literatures, i.e., fictions, novels, story books, etc., for recreational studies, and a children's corner equipped with juvenile literature.

2. Concept of Public Library:

A public library is a library that is accessible by the general public and is generally funded from public sources, such as taxes. It is operated by librarians and library paraprofessionals, who are also civil servants.

4. Chakrabarti, B . (2005). Concepts of community information service in the West and India. In Goon, A. M., Sengupta, S., Ganguli, S. & Ghosh, A. (eds.), Sen, S. K. (executive ed.). *Politics, culture and society : collection of essays in memory of S. M. Ganguly. (pp. 279 - 291).* Kolkata : New Age Publishers.
5. Abu, R. Grace, M. & Carroll, M. (2011). The role of the rural public library in community development and empowerment. *The International Journal Of the Book, 8(2).* Pg. 63 – 74. Retrieved September 30, 2017 from https://codeethiopiadigitalbooks.files.wordpress.com/2014/08/rolecommunitylibrary.pdf
6. IFLA/UNESCO public library manifesto. (1994). Retrieved May 15, 2015 from http://archive.ifla.org/VII/s8/unesco/eng.htm
7. Merriam Webster. Retrieved September 30, 2017 from https://www.merriamwebster.com/dictionary/community?utm_campaign=sd&utm_medium=serp&utm_source=jsonld

5. To find the areas of library services to be improved or upgraded.

3. Methodology

In this study a questionnaire was prepared and data was collected through it. The questionnaire was designed in a user friendly way so that users may feel free while giving the information. The only motto of designing the questionnaire was to collect the real time and the correct information about the library and the services. And the questionnaires were distributed to the secondary and Sr. secondary students of both of the schools.

4. Data Analysis:

1. **Usefulness:** First point was the usefulness of the library services to the students.

Tabulated data about usefulness of library services Kendriya Vidyalaya. The questions were asked to the students of Kendriya Vidyalaya in relation with the services provided by the school library. The below data table shows total 412 responses were received.

Table 1.1 (Source; Primary)

S.No	Library services	Very Useful	Useful	Not useful	Total
	Circulation services	15	24	3	42
	Reference services	14	22	5	41
	Abstracting & indexing services	9	21	10	40
	Bibliographic Services	23	16	3	42
	Audio Visual service	20	19	3	42
	Internet Services	22	11	7	40
	Inter Library Loan	16	16	10	42
	Reprographic Services	14	21	6	41
	Translation services	24	13	5	42
	SMS Alert services	10	17	13	40
	Total	167	180	65	412

Tabulated data of usefulness of library services to the students of Delhi Public School, the same questions were asked from the students of Delhi Public School and total 615 responses were received as below:

Quality Service Of State Central Public Library Arunachal Pradesh : A Case Study

Joram Tayam

Government College Doimukh ,
E- Mail Joram Tayam@gmail.com

Abstract: The study aimed at investigating the user's opinion of services quality provided by the Central Public Library of Arunachal Pradesh. Survey study among library users was conducted, the study is based on materials available and personal interview with library professional. Findings of the study revealed that the Central Public Library of Arunachal Pradesh is offering quality of services up to the satisfaction for its users. Users were satisfied with different library services facilities including, library books, journals, dictionaries, encyclopedias, Internet services, special collection, periodical collections, reference service, adult education program, reading room facility, library environment, opening hours and attitude of library staff with the library users. Respondents demanded e-resources of information in the library and suggested that library should organise training programs for its users to make the better use of library services. Study concludes that the overall quality of services offered by the Central Public Library of Arunachal Pradesh is not much satisfactory.

Keywords: User's Opinion, Public Library, Central state Library, Arunachal Pradesh.

1. Introduction

Public libraries is social and community information institution were provide free formal and informal education to the community, In Public library is open for irrespective of users using information and resources facilities for the individual knowledge development. The Public library is democratic institution special information and resources for the peoples ,off the peoples and by the peoples. Public library are considered as "peoples University", play a very significant role in developing informational system for lifelong learning of the general public. Public libraries can access the global information by utilizing the virtue of information technology. Public library can provide access to the peer-reviewed online journals and help the individuals of the society in obtaining quality information for improving education, research and knowledge. Librarians working in public libraries can meet the new demands of the users by fulfilling their information needs in effective way (Haggstrom, 2004). Public libraries are crucial institutions for providing education. It is essential for adult education and improving literacy rate in any country (Akparobore, 2011). Public library is a cultural library that aims at satisfying the customer's information needs (Zhong, 2007). Public library

can develop quality services to fulfill the needs of target market. Public library through careful planning strategies can attract the attention of potential users by encouraging them to use the library services for their needs (Change & Hsieh, 1996). Public libraries can tailor quality information services to meet the information needs of its users. Public libraries can attract users with careful marketing and planning strategies to attract the potential users (Nsieh, 1997). The Central Public Library Arunachal Pradesh is regarded as a prestigious and historical institution of the City. It has a very fine building of classical Italian style of architecture. It was founded in 1924 by the Nawab Sir Sadiq Muhammad Khan Abbasi. It has three separate blocks for the users. The library possesses more than one lack collection of information to cater the information needs of the locality.

2. Profile of Arunachal Pradesh state.

Arunachal Pradesh the land of the down lit mountains .India's eastern most frontier is 84000 Sq.Km. in area with a population of 7,00,000. It touches the perpetual snow of the southern boundary of Tibet, right down to Brahmaputra river. The land mostly is hilly and great rivers and stream and natural forest. Erstwhile NEFA (North frontier agency) was renamed in 1972 as Arunachal Pradesh . The first Indian land to great the rising sun)It was union territory till January ,1987. On 20th February ,1987 it attained statehood (Ratan.T 1994).The public library service actually originated in 1956 when the capital of the state was at Shillong through establishment of the state Central library. which later on transferred to the present state capital. It is now situated at Itanagar (secretariat Complex).It is the apex body of the library services in Arunachal Pradesh. All the District libraries of Arunachal Pradesh are governed by the Central library (Ratan.T .1994).

Table No. 1. Number of public libraries in Arunachal Pradesh.

S/No	Name of Library	Nos. of Library
1).	State Central library.	01
2).	District Library.	16
3).	Divisional library	02
3).	Branch Library.	02
5).	Sub Divisional Library.	18
6).	Block library	26
7).	Circle library.	38
	Total	107

* Sources of data from Directorate of Public library Govt. of A.P

3. To study Significance role of central state Public library in the state.

Public libraries can play significant role in the development of information society in any state. Public libraries must build effective information services for satisfying educational and informational needs of its users. To provide effective information services, it is essential to measure the opinion of library users with quality of library services in order to ascertain that whether the library is meeting the diversifying information needs of its users or not. The instant study has been conducted to achieve this aim.

4. Objectives of study.

1. To investigate the user's Opinion of services quality of the Central Public Library of Arunachal Pradesh.
2. To ascertain the purpose of using library service and resources.
3. To explore the Problems faced by the users while using the library.
4. Method of study.

Observation research method was used by adopting survey research technique.

Study used literature based scrutiny and interview with library professional and personal observation and visited in the central library.

5. Descriptive study conducted.

Descriptive study s were applied to measure the degree of responses and to reach the results. Review of Related Studies Investigating user's perception regarding quality of library services is a fine tool to examine the role of library in providing effective information services to its user. It provides feedback for library administrations to evaluate library services and bring necessary improvement in its services if necessary. Given section provides the review of different studies conducted to measure user's satisfaction with different services provided by public libraries in different countries.

Iwhiwhu (2012) studied the users' level of satisfaction with public library of Edo State. Results indicated that respondents were not satisfied with information resources provided in the library. They did not show their satisfaction with the

availability of text books, journals, CD-ROM services and other recreational materials available in the library. Study found that the library is not achieving its objectives in satisfying the information needs of its users. Findings revealed that users were satisfied with other than literary services provided in the library such as sitting plan, library space, air condition, photocopier service, lighting in the library, circulation and computer services. Nzivo (2012) examined the public library system and information services in Kenya. Study used Survey technique questionnaire as a tool to collect data. Majority of the respondents were students (64.3 %) while other were administrator, businessmen, lawyers, accountants and information officers. Findings showed that OPAC of the library is

widely used by the users to find the information, they were using library catalogue (15.2 %). Results also indicated that respondent's satisfaction with library services was (69.3 %). They were utilizing internet facility (63.3 %). They regarded the computer services in the library as very good (84.2 %).Islam (2012) conducted focus group discussion to evaluate the library services in northern districts of Bangladesh. Study also highlighted the information needs of rural community. Respondents mentioned that they need information for education, health care, food and nutrition, family planning, agriculture information needs such as information about weather, soil, seeds, fertilizers and pesticides. They mentioned that they also need information about cultivation of vegetables and dairy development. They described that in leisure time they visit their neighbor or friends. They pointed out that they like to read books on poetry, text books, and books on religion, agriculture, poultry, biography and livestock. They were aware of the rural library services and use library for finding needed information. Pors (2010) analyzed the services for citizens by public libraries in Denmark.

Study found that the library staff working in public libraries of Denmark welcomes the new work tasks. Library visitors in Denmark public libraries appreciated the provision of new services. They utilize the new services for acquiring required information. Manjunatha and Shivalingaiah (2004) measured the customer's perception of service quality in libraries and found that customers of the library expect that library should offer good resources and services. Study found that the satisfied customer brings more users to the library. Study concluded that there is a need of leadership qualities in library staff for promoting library services to the customers. Gallimore (1999) overviewed the challenges faced by public library managers and found that the change with the library science profession has changed the responsibilities of public library managers. Due to this change public library managers are facing issues such as use of technology in libraries, staff and services issues. Data Analysis and Interpretation .

6. Present scenario of central state Public library service in state.

As study conducted in the public library of Arunachal Pradesh regarding quality service in observation most user visited in library gender wise of male more then female less user as compare. There are three different type of Library Users including students, researchers, govt. servants and users from different occupations were visit in the Central Public library in state. However, students were more majority. Frequency and frequently visiting of User's Percent of the Student, Researcher, Professional, occupation Govt. Servant etc. The purpose of library Use were to inquired, reading news papers etc. Majority was using library for general readings. There were also using the library for their research work, entertainment and career development. Gender Frequency Percent and Purposes of using the Public Library Information Sources used by Users. A different type of library resources were provided to the user and they were asked to mention the frequency of their usage. The frequency use library books, journals, dictionaries, encyclopedias, Internet service, govt. publications, yearbooks and media/T.V/ Radio etc. The maximum information sources of the library used by Library Users. User has less frequently visited Using Public library .It shows that library is offering less quality services. How often do you use the Library? Always Satisfaction with Library Services User's satisfaction with library services should be the prime goal of any library. It is find that users that they were not much satisfied with circulation services, reference services, special collection, Internet facility, reading rooks facility and newspaper/magazine Purpose Frequency Percent, General Reading, Research work ,Entertainment ,Career Development, Information source .Book Journal Dictionaries Encyclopedias Internet Govt. Publications Newspapers/ Magazines Media/T.V/Radio Year book /Annual Report services. It was found that library should improve digital collection services and adult education program as the respondents were not fully satisfied with these services.

Satisfaction with Library Services user's Opinion about different Library Services & Staff different library facilities were evaluated in the light of user's opinion. They agreed that library collection is adequate and organized, library environment is conducive, there are recreational facilities for children, it conducts seminars, book fairs, computers are adequate, opening hours are convenient, membership process is easy, library staff is co-operative and competent, library keeps it users up-date regarding new development in their fields of interest. They were satisfied with the overall services provided by the state Central Public Library of Arunachal Pradesh. Opinion about different Library Facilities Opinions .Dev. Library collection is adequate for my needs. Library collection is well organized and easy to find. Library environment cooling, water, noise level,

lighting, cleanliness, is conducive Library provides recreational facilities for the children. Library arranges seminars, book fairs, and book exhibitions round the year. Library computers are adequate for my study needs. Library services Circulation Reference Digital Collection Special Collection Govt. documents Adult education program Internet facility Reading rooms facility Newspapers and Magazines facilities. (latest and old ones) , Library opening hours are appropriate for my study needs. Library membership procedure is easy Books borrowing procedure is easy and is users friendly. Library staff is co-operative, competent and helpful. Photocopying facility is easy for the users .The Library keeps me up-to date about the developments in my field of interest.

Over all most the user were not fully satisfied with the quality of Library services. Problems Faced by Library Users most of the users mentioned that electronic resources are not available in the library .Library should arrange e-resources of information for the users as they are interested in using e-resources. Some of the users mentioned that required information is not found and there is a lack of users training programs .Very few users complained against the lack of support from library staff .Problems Faced by Library Users Problem Frequency Percent required information is not available and non availability of electronic resources. lack of users training program about the use of library resources. lack of support from library staff

7. Problem face by central state Public library in the state :

1. The state central library are lacking infrastructure facilities, resources, human resources, manpower , work culture, none using ICT and apathy of the state govt and concerned authority.

2. The state Central Public Library of Arunachal Pradesh is offering not much good quality of services satisfactory.

3. The library users are partially effectively utilizing library services and visit the library frequently.

4. They are satisfied with different library collections and overall services provided by the library.

5. They are interested in utilizing electronic sources of information and demanded e-resources in the library.

6. They need trainings for utilizing the library more effectively.

8. Conclusion & Recommendations

Study concluded that the state Central Public Library of Arunachal Pradesh is offering good quality of services to its users as the library users were found satisfied with different library collections and services. It is plausible that the library users showed their positive perceptions about the quality of library services and were satisfied with overall services of the library. However, library should not offer electronic resources for the users as they are interested to use e-resources. Library should also offer training programs for the users in using different type of library services. Library should conduct seminar, workshops and user education programs to educate the library users to utilize library services for lifelong learning. Library administration should focus to organize special activities in the library to make the library as the centre for innovation, learning and cultural development.

References

1. Haggstrom, B.M. (2004). The role of libraries in lifelong learning. Final report of the 2.IFLA project under the section for Public Libraries. Retrieved: http://archive.ifla.org/VII/s8/proj/Lifelong-LearningReport.pdf
2. Akparobore, D. (2011). The role of public libraries in promoting adult education inNigeria.Retrieved: ttp://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1471&context=libphil prac
3. Zhong, H. (2007). Research on reader self-services in public library. Library
4. Management, 28(1/2), 101-106. Change, P. & Hsieh, P. Customer involvement with services in public libraries. Library Review, 48(8), 1996.
5. Nsieh, P.N.P.N. (1997). Customer's involvement with services in public libraries. Asian Libraries, 6(3/4), 242-249.
6. Iwhiwhu, B.E. (2012). Public library information resources, facilities, and services: user satisfaction with the Edo State Central Library, Benin-City Nigeria. Retrieved: ttp://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1821&context=libphil prac
7. Nzivo, C.N. (2012). User perception on library services and information resources in Kenyan Public Libraries. Library Review, 61(2), 110-127.

8. Islam, S. (2012). Rural library services: a qualitative assessment of information provision in selected rural communities in northern districts of Bangladesh. New Library World, 113(3/4), 118-138.

9. Pors, N.O. (2010). Citizen services and public libraries: an analysis of new services in Danish public libraries. New Library World, 111(7/8), 263-272.

10. Manjunatha & Shivalingaiah. (2004). Customer's perception of service quality in libraries. Annals of Library and Information Studies, 51(4), 145-

11. Gallimore, A. (1999). Managing the networked public library. Library Management,

Public Library and Community Information Service : A Study

Supriya Mallik

Librarian, Moyna College, Purba Medinipur, West Bengal, India
E – mail : mallik.supriya2011@gmail.com

and

Dhritiman Bhar

Librarian Modern Public School, Chandernagore, West Bengal, India
E – mail : dhrit9237@yahoo.co.in

Abstract : Information is considered as a basic input to all developmental activities. Due to information explosion massive amount of information generate every faction of time. It is very important to easy access to survive. But unequal access to information gives birth to the disadvantage community within the society. Members of such community have less information to perform their day to day activities and they also unaware of their rights and privileges. In this context Community Information Service is very essential for socio – economic development of the said community because a society cannot achieve its ultimate success avoiding the proper development of people of every section of that particular society. Public library plays an active role to disseminate information according to the need of the community to solve problems and able to aware about their social rights and privileges. But without proper planning and policies it is not possible to deliver effective CIS.

Keywords : Community Information Service, Public Library, Community Development, Public Library – CIS.

1. Introduction :

Information is very essential that every person need it for their day to day activities and also for their development. It empowers the society and through it cultural, social and economical growth and development is possible. Information is basic needs of human lives without it overall development of any community is not possible. Community Information Service attempts to provide various types of information for development of a community when formal channels are inappropriate or unavailable or the members of the community unaware about their rights or unable to acquire information related to survival such as housing, food, health, legal protection etc. It is the duty of Government to ensure CIS for development of the community, society and the nation. Public library is one of the important sources of information which can deliver right information, to the right

user at the right time. It always providing effective and efficient CIS to empower the community. Library bridging the gap between the information provider and information needs of the community.

2. Community Information Service :

Community is a body of people living in a particular place with having their common interest and common practice. According to Merriam Webster community is a a group of people with a common characteristic or interest living together within a larger society. Usherwood defines community in a comprehensive way that "any geographical community or neighbourhood will be made up of a number of communities definable by race, social class, or income group, employment, leisure interest, religion and so on, each with its own informal information network that has grown up without the help of librarians or any other information advice workers."

The term "Community Information" (CI) consist of two terms "Community" and "Information". Generally Community Information is one kind of information which is needed individually or collectively by the members of a community for their survival and growth. CI also helps the community to solve the day to day problems of a community as well as helps to its development. Community information provide information related to health, education, housing, finance, legal protection, employment, self – employment, agriculture, political, cultural, legal, fundamental rights, horticulture, Government programs, social welfare and many more which are very essential for overall development of a community.

Library Association, UK, describe Community Information Service as "services which assist individuals and groups with daily problem solving and with participation in the democratic process. The services concentrate on the most important problems that people have face, problems to do with their homes, their jobs and their rights." (Chakrabarti, 2005).

Simply it is said that CIS is the process to collect, organise, store and disseminate non – book and non – document information about the community resources for their development.

3. Need of Community Information Services :

In the evaluation process society can continuously change its nature from one stage to another and presently we are in the "Information Society". Without information we cannot sustain as human beings for a long term. Due to information explosion

a huge amount of various information generated in every fraction of time. This random growth of information divided our society into two groups such as "information poor" who have less information and "information rich" have much information. Lack of access to information members belonging to the information poor community become the disadvantaged group of the society. It also deprived from their development as well as to achieve certain standards of life.

In this context CIS is a very helpful tool to provide needed information to the under privilege community for their survival as well as to improve their standards of living in all respect. It also helps in socio – economic development of a community. It make aware the members of the community about their rights and about the changes around themselves.

4. CIS and India :

The concept of CIS coined in UK and USA during the Second World War time to cope up with the wartime problems. It is mainly established to provide various types of information related to employment, training, food, resettlement, education, legal helps, missing relatives, evacuation, etc.

In India CIS continuously practiced from the ancient time. The examples of India ancient CIS can be traced out from clay tablets, palm leaves, bhurja patras, edicts of Ashoka which disseminate information about the local events, taxation, penal sections, Royal policies, public policies etc. It is also found in ancient India that information flows in one generation to another generation in oral forms. Year after year people of India heard various types of stories from great epics, puranas, uponishad , folktales and also stories from Panchtantra. This tradition similar to modern term "Community Information Service" practiced in India for centuries when the term does not appeared in the West.

It is also found that at the time of Indian Revolution many societies and centres found mainly to disseminate information and inter exchange ideas in various fields. Modern Indian thinkers like Raja Rammohun Roy, Rabindra Nath Tagore, Swami Vivekananda, Mohandas Karamchand Gandhi strongly felt about the essence of Community Information Service.

Now a day this task performs by the Central Government with the alliance of State Governments, NGOs and also some voluntary organizations. Government already took different initiatives for empowering the community by providing needed information.

Recently the Government of India started a $17 billion project to build a

"National Optical Fibre Network" (NOFN) which will connect India's all gram panchayats or village level governments within three years. The vision of this project is to create ICT infrastructure like high speed internet at gram panchayat level, on-demand availability of government services like health, education etc. and digital empowerment of citizens through digital literacy. The "Dgital India" program will be implemented in phase from current year till 2018. The main focus of this program is to cover 50,000 gram panchayats this year, 100,000 next year and remaining 100,000 the following year. The work on "National Optical Fibre Network" will be completed within 2017. Ravi Sankar Prasad, Minister of Communication and Information Technology said that "The entire country will be covered by broadband within three years and the internet will reach the remote villages." The government will create an enabling platform that will aid in delivering government services to citizens well as services in education, healthcare, entertainment and e-commerce. The government also conduct 20hours e-literacy training program in local languages in 200,000 community service centre across the country with the conjucation of state governments. (Bhar, 2017)

The main focus of this mission is to provide needed information to make the lives of the citizens better and it can facilitate to construct a well developed great nation. The policy makers better understand that social transformation can only be achieved if people are fully aware of their rights and privileges.

5. CIS and Public Library :

According to the IFLA/UNESCO Public Library Manifesto 1994 "The public library, the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision- making and cultural development of the individual and social groups. This Manifesto proclaims UNESCO's belief in the public library as a living force for education, culture and information, and as an essential agent for the fostering of peace and spiritual welfare through the minds of men and women. The public library is the local centre of information, making all kinds of knowledge and information readily available to its users. The services of the public library are provided on the basis of equality of access for all, regardless of age, race, sex, religion, nationality, language or social status. Specific services and materials must be provided for those users who cannot, for whatever reason, use the regular services and materials, for example linguistic minorities, people with disabilities or people in hospital or prison. All age groups must find material relevant to their needs. Collections and services have to include all types of appropriate media and modern technologies as well as traditional materials. High quality and relevance to local needs and conditions are fundamental. Material must reflect current trends

and the evolution of society, as well as the memory of human endeavour and imagination." (IFLA/UNESCO, 1994) Library is a social non – profit organisation. Public library collect, organise, store and disseminate information to serve the information queries of the community. It is also a channel of informal education and always supports lifelong learning.

Public Library is providing a focus for cultural and artistic development in the community and helping to shape and support the cultural identity of the community. It collect, repackage information and provide it in suitable form as per the prerequisite of the community. It also stores those information for future use and update its databases time to time.

All the policy makers, thinkers, library activists realize the importance of public library services in the domain of community information service. Public library provides information to all the communities of the society regardless of race, sex, education, age etc. A well planed library and information system disseminate information to all sections of the people. Public library also empowers the society through its library services and helps the community to solve their day to day problem.

National Policy on Library and Information System in India recommended that "the most important task before the Government is to establish, maintain and strengthen the free public libraries in the country and enable them to work as a system. The main thrust in this area should go to the rural public library. A village or a village cluster with an adequate population should have community library, which will also serve as an information centre. Resources of different agencies engaged in the work of public health, adult education, local self government and such others may be pooled to build up this composite centre." (Chakrabarti, 2005)

6. Recommendations :

It is identified that public libraries bridge the gaps between "have" and "have not" by providing information to the under privilege community according their needs. Public library is the best organization to provide CIS. Therefore efforts should be made by all concern to help public library to serve an effective CIS. There are some recommendation to provide effective CIS which are as follows :

1. Make an area profile through which one can easily identified all the communities of a particular locality. Also make an user profile which became very helpful to identify the information need of the user.

2. Identify the information need of the community on which CIS can be designed and developed time to time.
3. Procure all types of information sources such as pamphlets, leaflets, newspaper cuttings, charts etc. which can be helpful to disseminate community information.
4. The procurement of the collection should be based on local community need and all the documents should be up – to – date.
5. All the documents should be arranged in a systematic manner for easy retrieval.
6. All the public library should be networked to share their resources.
7. Libraries should linked with all information agencies such as Government, non – Government and experts to collect easily all the updated information from different fields.
8. Arrange training and development programs to provide effective CIS.
9. Library building should be specious and located within easy reach to the public.
10. Library should have adequate trained professional staff.
11. It should conduct library extension services such mobile library, storytelling, formation of reading circles, arrange library talk, book fairs, music festivals etc.
12. Library should have separate section for children with pictures, little magazines, toys etc.
13. Library should have the adequate space to arrange meetings of the community where they exchange their thoughts, ideas, understand each other, share their problems.
14. It should provide priority to the disadvantaged group of the society.
15. Library should arrange life skill programs so that community can able to develop themselves.
16. The libraries should develop special collections for the community according to their needs. The libraries should develop audio and video collections and organise audio-visual programmes for their benefit.
17. The relationship between library personnel and users should be increased through provision of constant interaction.

18. The library and information centre may encourage the people for their involvement in the socio-economic development projects in their leisure time.
19. Library should build "Local History" collection through which it provide information to community about their past, race, cast, information about that particular place as well as inhabitants of that locality.

7. Conclusion :

Community Information Service is now a very important issue. Public library collects information from different sources, store and prove it to those members of the community who are unable, unwilling or unaware about the information. It is the responsibility of the librarians and library professionals to provide proper guidance and service to the community to achieve their information and solve their day to day problems. Government(s) should have the responsibility to make policies for libraries and information centres, revised continuously and take necessary changes of those policies for better Community Information Services. Provide necessary trainings to the library professionals and information centre workers to accelerate the CIS in effective manner. It also essential to think about the communities live in the interior part of the rural areas those are deprived from the basic needs of the life. We cannot able to build a developed nation if all the people are not fully aware of their rights and privileges.

References

1. Bhar, D. & Mallik, S. (2017). *Digital divide to digital India : vision 2020.* (unpublished book chapter).
2. Majumdar, K. (2016). Community information services through public libraries and information centres : an experience in West Bengal, India. *Qualitative and Quantitative Methods in Libraries,5.* Pg. 797 – 804. Retrieved September 25, 2017 from http://www.qqml.net/papers/December_2016_Issue/544QQML_Journal_2016_Majumder_797-804.pdf
3. Satpathy, S. K. *Community information service (CIS) through public libraries : a realistic approach.* Retrieved September 25, 2017 from https://core.ac.uk/download/pdf/11880591.pdf

Reading Habits of Newspaper among the Engineering Students and Academic Staff: A Survey of Jahangirabad Institute of Technology, Barabanki

Nazia Salauddin

Librarian Jahangirabad Educational
Trust Group of Institutions Jahangirabad
Fort, Barabanki UP
nazia2710@gmail.com
nazia2710@rediffmail.com

Abstract: Reading activities has always been seen as an important element in a person's culture and education. The academic library is attached the academic institution it serves to user community towards readings and the main client are composed of students and academic staff. The library resources and services are the mirror of the academic goal of the institution and meet the information needs of their users. This studied reviewed focus on the activities engaged in by the academic community in their leisure time, the kind of newspapers they read. The role played by institutional library in developing the newspapers reading habits of the students and academic staff are also been given due importance. In this paper researcher are analyzing and indicate that the purpose of reading newspapers, preference of language, timing they are spending, newspapers reading is necessary to help readers requisite information and meet their information requirements among students and academic staff in Jahangirabad institute of technology, Barabanki.

Keywords: Reading Habits, Users Study, Newspapers,

1. Introduction:

Reading has been the passion of the greatest personalities of all times. Humans have been reading since ages and thus words of knowledge have been passed on through generations. The reading habit influences in the promotion of one's personal develop in particular and social awareness regarding the different field. Regular and systematic reading sharpens the intellect, refines the thoughts, emotions elevates tastes and provides perspectives for one's living : and their by prepare the person for an effective participation in social , religious cultural and political life. Reading fires the imagination of person. It add sight of eyes and new wisdom to mind. Newspaper help to improve the reading habits and improve the concentration power for students in all area of specialization. India is a developing with ethnic communities who wish to live together. The Efforts to solve the socio, economic and ethnic problems in our country. Reading and library use habits has a vital role to set up the multicultural structure in our country.

Newspapers help to improve reading habits, knowledge, and awareness. They can be part of good study habits for readers in any area of specialization. India is a developing country with many ethnic communities who wish to live together. Efforts to solve cultural diversity and adaptation problems should be multi-dimensional and long term. Reading and library uses habits have an important role in building the multicultural and diversified structure of a country.

2. Some of the benefits on reading habits:

Reading them helps reader improve his vocabulary in communication and writing. Since one comes across new words, phrases etc. Reader gets accustomed to use them in his daily language.

- Finding significant information in the area of specialization
- Keeping up-to-date subject information
- Getting social integration and current information
- Enhanced the communication skills of readers
- Facilitate cultural passing and adaptation.
- To develop the cultural diversity and intercultural relationship.

3. REVIEW OF LITERATURE

Research reveals that while teachers say they value reading as a leisure activity, many do not make personal pleasure reading a priority. Many are a part of a growing group of people classified as literates. Study of related literature implies locating; reacting and evaluating reports of research as well as report of casual observation and opinion that are related to the individuals planned research problems.

Scott (1996) [1] defined literacy as a "lack of reading habit especially in capable readers who choose not to read." In fact, in the study by Lesley, Watson, and Elliott (2007) [2] researchers expressed concern not just over the reading habits of preserves teachers but their behaviors that were more characteristic of "struggling" readers.

Nathanson, Pruslow & Levitt (2008) [3], Opine that the demands of teaching and personal life have caused teachers to abandon personal reading, one need only consider research conducted with preserves teachers to realize that there is little evidence of strong enthusiasm for reading among those preparing for a teaching

career and that teachers as a group do not have firmly engrained reading habits.

A study by McKool and Gespass (2009), [4] reveals that only about half of the teachers surveyed read for more than ten minutes a day in their free time. While these teachers advise parents of their students to read daily to their children, to allow their children to see them enjoy reading, and to talk about books with their children, it becomes apparent that many teachers do not take their own advice. There seems to be a dis connect between their "preaching" and their practice.

Reading is the ability to understand words contained in a document and make use of the knowledge for personal growth and development (Dadzie, 2008) [5], This implies making meaning out of recorded information either printed or non-printed in the life of an individual. People read for different reasons and purposes, some of which include for pleasure, leisure, relaxation, information and for knowledge.

According to (Ogbodo, 2010), [6] Parents send their children to school to learn. In the school, children are exposed to various experiences which influence their behaviour. Therefore, learning is a change in behaviour. Such a change is seen in their mental reasoning, physical growth, manipulative skills and development of values and interests. The change may be easy or difficult depending on the home and the school environment.

(Palani, 2012). [7] He believes reading is a process of thinking, evaluating, judging, imagining, reasoning and problem solving. Reading is an essential tool for knowledge transfer and the habit of reading is an academic activity that increases skills in reading strategies.

(Deavers, 2000). [8] Reading is an intellectual action which is possible only if a man forms a habit of reading and practices these from childhood. Reading habits, therefore, play a very crucial role in enabling a person to achieve practical efficiency. "Laws die but books never." Indeed, books are the most suitable medium through which knowledge is transmitted from generation to generation

Bhan and Gupta (2010) [9] conducted a research study on habits and academic achievement among the students belonging to scheduled caste and non-scheduled caste group. The results revealed that sex has no significant impact on the study habits and academic achievement of students.

Sohail and Andleeb. (2011), [10] conducted a survey to study the reading habits of the users of the Delhi Public Library, New Delhi. The finding state that the, purpose of reading, preference of language, form of library collection, assistance from the library staff in the use of resources and services is necessary to help users meet their information requirements. The results also opine that people are

unable to visit the library regularly due to lack or shortage of time and literature being mostly read by the users are magazines and newspapers.

4. OBJECTIVE OF THE STUDY:

The purpose of the study is:

- To be identified the language in which mostly users are preferred
- To explore the level of newspaper reading habits of respondents
- To know how much time they spend for reading newspapers
- To be identified the sources of the newspapers.
- To be identified that which newspaper are most read by the users
- To be identified which sections of newspapers are most read by users

5. SCOPE AND LIMITATION OF THE STUDY

The present study is aimed to analyses the reading habits of newspaper among engineering students and academic staff in the Jahangirabad Institute of Technology, Barabanki. This study is only focusing on engineering students and academic staffs that are include faculty members and administrative staffs in JIT, Barabanki.

6. METHODOLOGY

The specific objective of the paper is to study thoroughly the reading habits of the 21st century among engineering students and academic staff in JIT, Barabanki. Researcher treat cumulatively Faculty members and administrative staff as an academic staff, The students and academic staff aim to identify their reading attitudes, purposes, preferences and tastes. The data was collected using the questionnaire method. A total of 450 questionnaires were distributed among the students and academic staff and 414 filled in questionnaires were obtained from the respondents. Sufficient time was given to the respondents to furnish the information. Suggestions to improve the library service are also collected from the respondents. The data collected through questionnaire was and analysed, classified and tabulated by employing simple statistical methods.

7. DATA ANALYSIS AND INTERPRETATION:

The collected information is tabulated by using statistical method, table and percentage. The data analyses are given below:

Table 1: Newspapers readers participated in the survey

Sl. No.	Users	Distributed	Received	Percentage
1.	Students	340	282	(62.66%)
2.	Faculties	65	65	(14.44%)
3.	Staff	45	45	(10.00%)
Total		450	414	(100%)

Table 1 show that the volume of distribution and received questionnaire from engineering students and academic staff. 450 questionnaires were distributed among engineering students which includes 340 questionnaires to students, 65nos. to the faculty members, and 45 to the administrative staff. Out of these 450 questionnaires, researcher were received 414 questionnaires from the respondents are students 282 (62.66 %), Faculty members 65 (14.44 %) and administrative staff members 45 (10%) from the total sample.

Table 2: Language preference of newspapers readers

Sl.No.	Language	Students	Faculties	Staff	Total
1	Hindi	102 (24.63%)	60 (14.49)	45 (10.86%)	207 (49.98%)
2	English	46 (11%)	28 (6.76)	18 (4.34)	92 (22.1%)
3	Urdu	70 (16.90%)	20 (4.83%)	25 (6%)	115 (27.73)
Total		218 (52.53%)	108 (26.20)	8 8(21.25)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414

The data presented in table 2 shows the preference of languages while reading habits of newspaper among students and academic staff. Among 218 (52.53%), students are preferred Hindi language, 46 (11%) students are mentioned English language and 70 (16.90%) students are mentioned Urdu languages only at the time of reading newspaper. In the case of faculty members 60 (14.49%) are mentioned in Hindi language, followed by 28 (6.76%) are preferred English language, and 20 (4.83%) are preferred in Urdu language while reading the newspaper. In case of administrative staff member 45 (10.86) are preferred the Hindi language, 18 (4.34%) are preferred English language, and 25(6%) are preferred Urdu language while reading the newspapers.

Table 3: Time spent for Reading Newspaper

Sl.No.	Time spent	Students	Faculties	Staff	Total
1	Less than 30 Minutes	102 (24.63%)	60 (14.49)	45 (10.86%)	207 (49.98%)
2	30 Minutes to1 Hour	46 (11%)	28 (6.76)	18 (4.34)	92 (22.1%)
3	More than 1 Hour	70 (16.90%)	20 (4.83%)	25 (6%)	115 (27.73)
	Total	218 (52.53%)	108 (26.20)	88 (21.25)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414

Table 3, indicates the time spent for reading newspaper among students and academic staff in JIT Barabanki. Out of 414 respondents, 102 (24.63%) students, followed by 60 (14.49) faculty members and 45 (10.86%) staff members are spent less than 30 minutes per day to reading the newspaper. 46 (11%) students, followed by 28 (6.76) faculty members followed by 18 (4.34) staffs are spent 30 Minutes to 1 Hour time to read the newspaper while some readers are spent more than one hours for newspapers reading as 70 (16.90%) students, followed by 20 (4.83%) faculty members and 25 (6%) staff. It is evident from the above table, among all respondents, majority of readers are spent less than one hour to read the newspapers.

Table 4: Sources of Newspaper by readers

Sl.No.	Sources	Students	Faculties	Staff	Total
1	Individual subscription	71 (17.15)	23 (5.56)	45(10.86%)	94 (22.71)
2	College Library	174 (42.03)	20 (4.83)	18 (4.34)	263 (63.53)
3	College Hostel	37 (8.94)	3 (0.72)	25 (6%)	57 (13.77)
	Total	282 (68.12)	46 (11.11I	88 (21.25)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414

Table 4 shows the various sources of newspapers to read among students and academic staff in engineering colleges in JIT, Barbanki. Out of 414 respondents, 94 (22.71%) has mentioned they are subscribing newspapers individually, which includes 71 (17.15%) students, 23(5.56%) faculty members and 45 (10.86%) staff members. Library subscriptions are the most common source of newspapers for users. But 263 (63.53%) readers are pointed college library is the sources of newspaper reading, while 57 (13.77%) are mentioned the college hostels readings area are also the sources of newspapers. It clearly shows college library is the main source of newspaper readings among students and academic staff.

Table 5: Choice of Newspaper

Sl.No	Name of the Newspaper	Students	Faculties	Staff	Average of Readers
	The Times of India	216 (76.59)	32 (69.56)	55 (63.95)	70.03%
	The Hindu	65 (23.40)	36 (78.260	62 (72.09)	57.91%
	The Indian Express	32 (11.34)	21 (45.65)	22 (25.58)	27.52%
	Hindustan times	78 (27.65)	33 (71.73)	41 (47.67)	49.01%
	The Economic Times	210 (74.26)	39 (84.78)	68 (79.06)	79.43%
	Inquelab (Urdu)	158 (56.02)	26 (56.52)	47 (54.65)	55.73%
	Dainik Jagran	165 (58.51)	31 (67.39)	41 (47.67)	57.85%
	Business Line	62 (21.98)	15 (32.60)	55 (63.95)	39.51%
	Pioneer	110 (39.00)	28 (60.86)	64 (74.41)	58.09%
	Business Standard	143 (50.70)	19 (41.30)	53 (61.62)	51.20%

*Percentages do not always equal 100 due to rounding. n=414 (Responded were allowed multiple answer)

Table 5 show that the choice of newspaper reading among students and academic staff. The respondents are allowed to prefer multiple responses. Out of 414, Majority of the respondents (79.43%) is mentioned their first choice is The Economic Times followed by The Times of India is 70%, 58.09% are Pioneer, followed by 57.91% are The Hindu, 51.20% are Business Standard, 49.01% readers are Hindustan times, 39.51% are Business Line, 27.52% are Indian Express newspaper readers in English newspaper category. It clearly shows the "The Economic Times" newspaper is most preferred newspaper when comparing others English language newspapers. While in others local languages 57.85% are preferred Hindi daily as Danik Jagran and 55.73% are likes Inquelab newspaper in Urdu language.

Table 6: Choice of topics in newspapers

Sl. No	Newspaper Section	Students	Faculties	Staff	Average % of Readers
1.	Sensational News	215 (76.24)	59 (68.60)	18 (39.13)	61.32%
2.	Letters to Editors	235 (83.33)	52 (60.46)	41 (89.13)	77.64%
3.	Advertisement/ Classifieds	55 (26.59)	26 (30.23)	16 (34.78)	30.53%

4.	Education	92 (32.62)	15 (17.44)	12 (26.08)	79.14%
5.	Politics and Social	240 (85.10)	56 (65.11)	35 (76.08)	75.43%
6.	Cinema/Entertaining News	140 (49.65)	30 (34.88)	12 (26.08)	36.87%
7.	Sports	255 (90.42)	69 (80.23)	22 (47.26)	72.64%
8.	Book Review	68 (24.11)	29 (33.72)	19 (41.30)	33.04%

*Percentages do not always equal 100 due to rounding. n=414 (Responded were allowed multiple answer)

As per the table 6 indicates the choices of various topics in news papers are preferred by the students and academic staff are stated. Most of the newspapers readers 79.14% are preferred the education oriented news, while 77.64% are likes to read Letters to Editors is second preferred choice by respondents. 75.43% of the readers are mentioned politics and social oriented topics in newspapers. A very less average of the readers 30.53% are looks Advertisement/Classifieds columns in newspapers, while less numbers of respondents 33.04% are only likes to read book review in newspapers.

Table 7: Purpose for Reading Newspaper

SI. No	Purpose for Reading	Students	Faculties	Staff	Total
1.	To get up to date Information	71 (17.15)	18 (4.35)	15 (3.62)	104 (25.12)
2.	Update current awareness	154 (37.20)	15 (3.62)	40 (9.66)	209 (50.48)
3.	To know the social activities	37 (8.94)	8 (1.93)	14 (3.38)	59 (14.25)
4.	Finding significant information for academic	20 (4.83)	5 (1.21)	17 (4.11)	42 (10.14)
	Total	282 (63.29)	46 (9.90)	86 (16.67)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414 (Responded were allowed multiple answer)

The table 7 indicates the reasons for reading newspapers among students and academic staff in JIT, engineering colleges. Out of 414 respondents, majority of 209 (50.48%) newspaper's readers are mentioned they are using the newspapers for updating current awareness followed by 104 (25.12%) of the readers are stated to get the up to date information while 59 (14.25) are reading newspapers to know the social activities and interesting to knows that only 42 (10.14) newspaper's readers are finding significant information for their academic.

8. FINDINGS

- Majority of newspapers readers 207 (49.98%) are spent less than one hour to read the newspapers.
- 94 respondents, only 22.71% has mentioned that they are subscribing newsp apers individually, which includes 71 (17.15%) Students, only 23(5.56%) faculty members and 45 (10.86%) are staff.
- The Economic Times newspapers are most preferred newspapers comparing to others English daily.
- Only 30.53% news readers are looks Advertisement/Classifieds columns in newspapers
- Majority of 209 (50.48%) of the respondents are mentioned they are using the newspapers for update their current awareness.

9. CONCLUSION

Newspapers are seems to be considered very important resource in the present era. Library users read newspaper to get the latest information about what is happening around. Newspapers are responsible for creating and generating reading habits among university students. This survey has been conducted to study the newspaper's reading habits of the users of Jahangirabad Institute of Technology, library. The analysis of the data reveals that quite number of people goes to the libraries even in the digital environment where technology has taken up a large slice of the available time of the people. But still they have newspaper reading habits and have a positive attitude toward newspapers reading. Almost all the objectives of the study have been fulfilled. This study helps librarians understand the importance of newspapers and improve the services related to newspapers.

REFERENCES

1. Scott, J. E. (1996). Self-efficacy: A key to literacy learning. *Reading Horizons, 36*, 195-213.
2. Lesley, M., Watson, P. and Elliot, S. (2007), "School" Reading and Multiple Texts: Examining the Metacognitive Development of Secondary-Level Preser-

vice Teachers. *Journal of Adolescent & Adult Literacy*, 51, 150–162

3. Nathanson, S., Pruslow, J., and Levitt, R. (2008). The reading habits and literacy attitudes of in service and prospective teachers. *Journal of Teacher Education, 59 (4)*, 313-321.
4. McKool, S. S. & Gespass, S. (2009). Does Johnny's reading teacher love to read? How teachers' personal reading habits affect instructional practices. *Literacy Research and Instruction, 48*, 264-276.
5. Dadzie, P. S. (2008). Reading for Education: The roles of Libraries. *Ghana Library Journal*, 20 (01), 1-14
6. Ogbodo, R.O. (2010) Effective Study Habits in Educational Sector: Counseling Implications. *Edo Journal of Counseling*, 3 (2), 1-11
7. Palani, K. K. (2012) Promising Reading Habits and Creating Literate Social. *International Reference Research Journal*, 3(2.I), 91
8. Deavers, R. (2000), The Effect of Instruction on Early Non-Word Reading Strategies. *Journal of Research in Reading*. 23, 267-286.
9. Bhan, K. S., & Gupta, R. (2010). Study Habits and Academic Achievement among the students belonging to scheduled caste and non-scheduled caste group. *Journal of Applied Research in Education*, 15(1) 1-9
10. Sohail, M & Alvi, A. (2011). Reading habits among the users of Delhi Public Library, New Delhi: a survey, *Brazilian Journal of Information Science: Research Trends*, 5 (2), 69-87

Status of Library Services in Kendriya Vidyalaya and Delhi Public School at NTPC Dadri, UP, India: A Study By

Krishna Gopal

Librarian
Kendriya Vidyalaya NTPC Dadri
Email: eeshukrishna@gmail.com

Abstract: Library services are the key factors in order to establish an institute. Now a days no. of services are being provided by the libraries, especially in school libraries, affiliated with the Central Board of Secondary Education (CBSE) in India. CBSE has given the clear guidelines and procedural manual to its affiliated schools to have a well established library. Well trained human resources are to be employed and most of the services to be provided to the students. Kendriya Vidyalaya and Delhi Public School at NTPC are providing good quality library services to students. Although no library is complete in itself, but there is always a space for growth of library and library services. This study will tell us the status of the library and its services in both of the schools.

Keywords: Library services, Comparison of library services, Library services at NTPC, Library services in Kendriya Vidyalaya, Library services in Delhi Public School.

1. Introduction:

Today's time is digital time every work is being performed through the digital medium right from the household chores to the organizational services. Our libraries are also playing a vital role and catering the information needs and services through the digital medium using the applications of ICT. The libraries of Kendriya Vidyalaya and Delhi Public School are serving their users in digital environment. In this study we will examine the compatibility of the services provided to the users of both of the schools.

2. Objectives:

The objectives of this study are as below;

1. To observe the services provided to the users in terms of usefulness.
2. Users Satisfaction
3. Status of the services in terms of using the ICT Applications.
4. To have a Comparison between the library services provided by both of the schools.

The above charts show that 15 % More users of Kendriya Vidyalaya are very satisfied than Delhi Public School and 12 % More users are satisfied in Kendriya Vidyalaya whereas 12 % users are less partially satisfied of Kendriya Vidyalaya following that very few 8% and 15% less users are dissatisfied than that of Delhi Public School.

6. Impact of ICT:

Another point of comparison was the use of ICT Application while library services are performed.

The given data was collected from the users of Kendriya Vidyalaya and Delhi Public School Both

Table 3 (Sources: Primary)

S No.	Impact of ICT	Kendriya Vidyalaya	Delhi Public School
1	Time Saving	7	92
2	Easier and Remote Access	34	40
3	Storage and Retrieval	6	88
4	Downloading and Printing	7	90

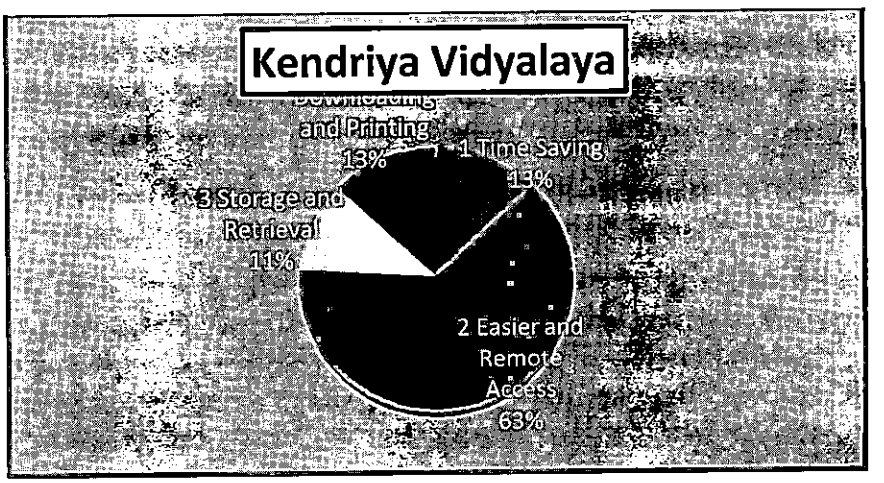
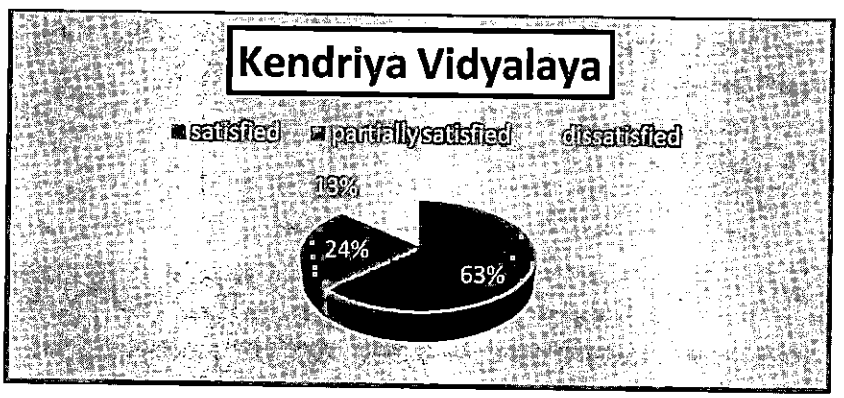


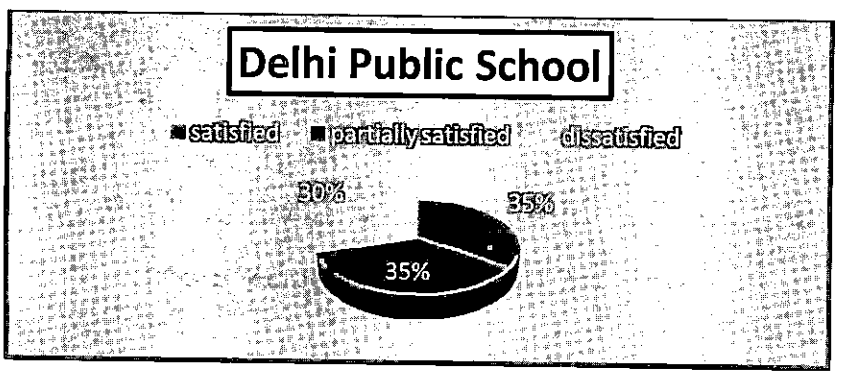
Chart 3.1 (Based on Primary Data sources)

Reference services	23	89	79	9	200
Abstracting & indexing services	80	36	64	20	200
Bibliographic Services	120	30	15	35	200
Audio Visual service	18	82	65	35	200
Internet Services	40	30	26	104	200
Inter Library Loan	47	33	0	120	200
Reprographic Services	36	34	90	40	200
Translation services	32	8	125	35	200
SMS Alert services	37	43	51	69	200
total	497	590	599	514	2200

Comparison



(Chart No 2.1 based on primary sources)



(Chart No. 2.2 based on Primary sources)

12. Shortcomings of the Public Libraries:

In Uttar Pradesh there is no library cess for public library. The finance is given by state government. Most of the Public Libraries still suffer for the lack of minimum facilities such as —

a) A Maintenance of building, good ventilation, standard furniture, fittings, cleanliness, etc.

b) A standard core collection of books and periodicals. The concept core collection was introduced in India so far;

c) A standard salary structure for the staff.

13. Summing-up:

From the above discussions we can say that the public libraries of Lucknow are serving to the academic community within the capacity. These public libraries are being proved as boon for academic community. The services of the libraries may be upgraded and modernized on priority basis.

References:

1. http://ijariie.com/AdminUploadPdf/USERS_SATISFACTION_TOWARDS_PUBLIC_LIBRARIES__A_STUDY_WITH_SPECIAL_REFERENCE_TO_UDUM-ALPET_c_1243.pdf accessed on 02.10.2017.
2. Rubin, Richard E. Foundations of Library and Information Science (3rd Ed.). 2010. Neal-Schuman Publishers: New York.
3. http://www.egyankosh.ac.in/bitstream/123456789/35241/1 /Unit-6. pdf accessed on 12.10.2107.
4. http://rrrlf.nic.in/acts_rules/uttarpradesh.pdf accessed on 10.10.2017.
5. Printed Niyamawali Evam Nirdeshika available at library counter in Aacharya Narendra Dev Pustakalay Evam Vachnalay, Lucknow.
6. Stone Inscription and Niyamawali available in Amiruddaula Public Library, Lucknow.

9. Ganga Prasad Verma Smarak Pustakalay Evam Vachnalay:

The foundation stone was laid down by Sir Tej Bahadur Sapru on 10th March, 1923 and building was inaugurated by Sir William Sinclair Mouris Governor on 14th March, 1925 at Aminabad. The first expansion/renovation was carried out by Shri Chandrabhanu Gupt on 01st October, 1964 and second was also by him on 01st April, 1976. The library is administered by Bharat Seva Sansthan with the help of Librarian and six technical/supporting staff. Nearly 60,000 collections of books (including rare and reference) are available on different subjects in Hindi/ English/Urdu medium. The books are classified as per DDC and catalogued as per AACR-2. Children Section, Women Section and Reference Section are the specialty of the library. The library is equipped with all modern facilities like Internet, Xerox and CCTV system [7].

10. Lajpatrai Pustakalay Evam Vachnalay:

The library building was inaugurated by the then Chief Minister of Orissa Shri Vishwanath Das in the auspicious presence of Shri Chandrabhanu Gupt on 17th August, 1971 at Kaiserbagh. The library is administered by Bharat Seva Sansthan with the help of Librarian and three technical/supporting staff. Nearly 20,000 books (including competitive books and magazines) on different subjects in Hindi/English medium are available for users. The books are classified as per DDC and catalogued as per AACR-2. Closed access system is being followed in library. All reading material (including books) is exclusive for used within the library premises. Seating capacity of the library is nearly forty users at a time [8].

11. Sri Ma Sarada Devi Public Library:

It is situated at Nirala Nagar and was established by Sri Ramakrishna Math. The library is administered by Sri Ramakrishna Math with the help of Librarian and three technical/supporting staff. There is a collection of nearly 46,000 books on different subjects in Hindi/English/Bengali/Sanskrit medium. The books are classified as per DDC and catalogued as per AACR-2. LIBCARE software is being used for in-house activities of the library. Competitive books/magazines are also available for the users. Children Section is specialty of the library. Seating capacity is nearly hundred users at a time. Internet, Xerox and other facilities are available in the library [9].

with the help of Deputy Librarian and ten technical/supporting staff.

There is a collection of 1, 42, 629 books (as on 31st March 2015) on different subjects and general interest in Hindi/English/Bangla/Urdu/Sanskrit medium. The books are classified as per DDC and catalogued as per AACR-2. Open access system is being applied for issue/return of the books. Besides this, Govt. Gazettes and Debates (of some years) of Lok Sabha/Rajya Sabha are also available for the use within the premises of library. A separate section was also established in the library for the books which were donated by British Council Library on its closing in Lucknow in the year 2001. The library has different sections like Newspaper Section, Children Section, Reading Section (for girls), Committee Room, Vichar Manch Room and Computer Section[5].

8. Amiruddaula Public Library:

Amir Hasan Khan, son of Raja Nawab Ali Khan of Mahmudabad became the successor. He was honoured with the designation of Amiruddaula. Amiruddaula Public Library at Lucknow is a symbol of his honour. It was established in the year 1868 with a part of provincial museum and opened in the year 1887 for the students. In the meantime the library was shifted to the upper part on of Lala Baradari and it was again shifted to Chhoti Chatter Manzil in the year 1910 and became famous as Public Library. Ultimately the library was shifted in the newly constructed building at Kaiserbagh. The foundation stone of this present library building was laid by Sir H. Butlar in the year 1921. With an agreement between the then Government and British India Association in the year 1925 the library was renamed as Amiruddaula Public Library. After completion of the present building it was inaugurated by Sir William Morris in the year 1926. Later on, the building was renovated with the financial aid given by National Archives, Ministry of Culture (Govt. of India). There are more than 2, 00,000 books including rare handwritten books/manuscripts on Palm leaves/Birch in Sanskrit/Pauli/Urdu/Farsi/Arbi/ Burmese/Tibetan languages. The books are on different subjects like Philosophy, History, Astronomy, Tantra Shastra, Ancient Medical Science, Literature, etc. The books are classified as per DDC and catalogued as per AACR-2. A special collection of textile designs which were being used in different parts of country are also available. These collections were collected by Dr. J. Forbes Watson in the year 1873. The library is equipped with all modern facilities like Internet, Xerox and Audio/ Video CDs/DVDs. The library is administered by Management Committee under the Commissioner with the help of Librarian and twelve technical/supporting staff [6].

c) To maintain in the permanent library service standards for the development of public libraries and also to ensure that all libraries are follow those standards in the state.

d) To ensure the random inspection of all available public libraries in the state. And also to supervise and coordinate the functions and performance of public libraries in the state, etc.

5. Lucknow:

One of the interesting aspects of Lucknow is its connection with Nawab and the culture of art and literature. Since the state was governed by Nawab and Mughal rulers, Lucknow has often remained as one of the important hub of art and literature. Besides, it is also known to have several vital learning centres and institutions which have connected this place to books and stuffs like these. So, the presence of libraries in the city is the most inevitable thing to experience and deal with. Some of the libraries based in Lucknow have existed since past 7-8 decades and are still serving with greater resources. These libraries cater everything right from the curriculum books for academic purposes research/reference, general interest books, newspapers, magazines, etc. With the age of IT and Internet, you can come across a number of modern resources in the form of CDs/DVDs; this means you can now access knowledge in digital format as well.

6. Public Libraries of Lucknow:

The number of public libraries is existed in the Lucknow city. Due to time constraints and some other reasons five public libraries viz. Aacharya Narendra Dev Pustakalay Evam Vachnalay, Amiruddaula Public Library, Ganga Prasad Verma Smarak Pustakalay Evam Vachnalay, Lajpatrai Pustakalay Evam Vachnalay, and Sri Ma Sarada Devi Public Library have been selected for the study.

7. Aacharya Narendra Dev Pustakalay Evam Vachnalay:

This library was established by ex-Chief Minister of U.P. in the year of 1959 and was named on world level socialist thinker Aacharya Narendra Dev. The library was inaugurated by the then Prime Minister Pt. J. L. Nehru on 30th April 1961. In starting it was opened in Motimahal, 2-Rana Pratap Marg but later on shifted in present building known as Chandrabhanu Gupt Smarak Navchetna Kendra, 10-Ashok Marg, Hazratganj. The library is administered by the Bharat Seva Sansthan, Motimahal

- Encourages wholesome recreation and constructive use of leisure time
- Provides children, young people, men and women opportunity to: a) educate themselves continuously, b) keep abreast of progress in all fields of knowledge, and c) maintain freedom of expression and constructively critical attitude to all public issues and world affairs.

4. Uttar Pradesh Public Library Act:

The Uttar Pradesh Library Act was passed by the state government in the year 2006. It is the biggest State in the country with two State Libraries one at Lucknow and the other at Allahabad. It has 59 Government District Libraries and a large number of aided libraries. The salient features [3] of the Act are as under:-

a) Constitution of State Library Council with the Minister, Secondary Education Department as Chairperson.

b) Provision for Director of Public Libraries, but to keep the Director of School Education, Uttar Pradesh, as the Director of Public Libraries for administration and operation of the provisions of the ordinance.

c) Establishment of two State level libraries one at the State Central Library at Allahabad and the other, State Reference Library at Lucknow.

d) Establishment of District Library in each District.

e) Recognisition of the libraries runs by voluntary organizations.

f) Meeting the entire expenditure from the State consolidated and non-plan budget of the State.

The detailed functions of the Director of Public Libraries are given in the Act. Some of the major functions [4] of the Director of Public Libraries are as under:-

a) The main function of the director of public libraries is to prepare an annual report of five year budget for the development of the public libraries in the state and propose to the Government of Uttar Pradesh.

b) Another main responsibility of the director of public libraries is to collect all types of data like descriptive or statistical data on the working of public libraries and also government aided libraries.

There are five fundamental characteristics shared by public libraries. The first is that they are generally supported by taxes (usually local, though any level of government can and may contribute); they are governed by a board to serve the public interest; they are open to all, and every community member can access the collection; they are entirely voluntary in that no one is ever forced to use the services provided; and they provide basic services without charge. [2]

Public libraries exist in many countries across the world and are often considered an essential part of having an educated and literate population. Public libraries are distinct from research libraries, school libraries, and other special libraries in that their mandate is to serve the general public's information needs rather than the needs of a particular school, institution, or research population. Public libraries also provide free services such as preschool story times to encourage early literacy, quiet study and work areas for students and professionals, or book clubs to encourage appreciation of literature in adults. Public libraries typically allow users to *borrow* books and other materials, i.e., take off the premises temporarily; they also have non-circulating reference collections and provide computer and Internet access to patrons.

The Indian public libraries have achieved its greatest development in large cities. Some cities maintain service that not only comes up to but surpasses minimum standards. Achieving standard library facilities presents special type of difficulties in small cities, scattered suburbs, towns, villages, and rural areas. Even with substantial financial support the small locality is often not able to raise enough money to buy the books needed and to employ the requisite professional personnel. For these reasons many public libraries of the country have not reached on the quality service as per specified norms.

3. Functions of Public Library:

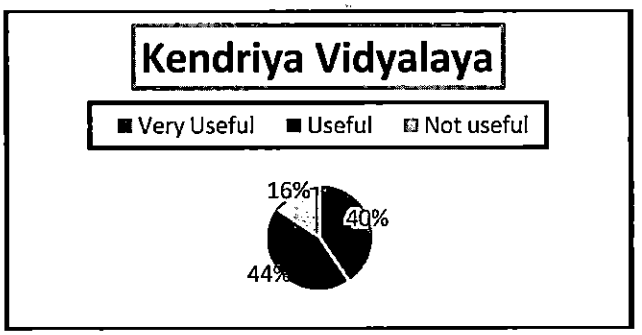
Among its broad based functions to perform in educating the general public as well as the children, the followings may also be quoted:

- It facilitates informal self-education of all people in the community;
- Enriches and further develops the subjects on which individuals are undertaking formal education;
- Meets the informational needs of all;
- Creates and further develops civic sense and habits of the citizens;
- Supports educational, civic, and cultural activities of groups and organizations;

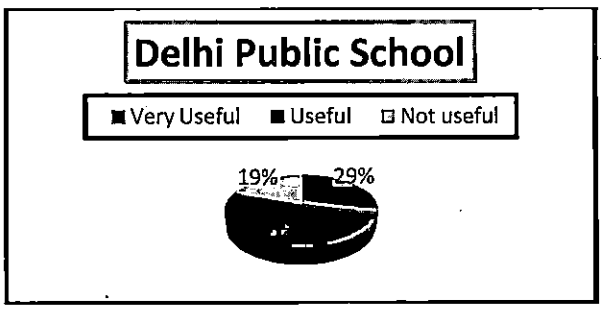
Table 1.2 (Sources: Primary)

S.No	Library services	Very Useful	Useful	Not useful	Total
	Circulation services	60	120	20	200
	Reference services	30	48	22	100
	Abstracting & indexing services	8	22	10	40
	Bibliographic Services	18	18	4	40
	Audio Visual service	14	20	4	38
	Internet Services	12	18	14	44
	Inter Library Loan	11	14	14	39
	Reprographic Services	8	18	8	34
	Translation services	9	21	10	40
	SMS Alert services	8	18	14	40
	Total	178	317	120	615

Comparison



(Chart No. 1.1 based on Primary sources)



(Chart no. 1.2 based on Primary sources)

Above two charts show the comparison between two schools in terms of usefulness of the library services provided by the school to their users. It clearly shows that 11% more users of

Kendriya Vidyalaya accept that the library services, provided them are very useful whereas 8% more users of Delhi Public Schools accept that the library services are useful than of Kendriya Vidyalaya following that 3% More users of Delhi Public Schools say that they are not useful.

5. Satisfaction:

It was another point of the comparative study, below is the data received from the users of Kendriya Vidyalaya and total 442 responses collected.

Table 2.1 (Sources: Primary)

Services	Very Satisfied	Satisfied	Partially Satisfied	Dissatisfied	Total
Circulation services	18	20	3	1	42
Reference services	19	17	4	1	41
Abstracting & indexing services	23	13	2	3	41
Bibliographic Services	21	15	5	-	41
Audio Visual service	5	17	13	6	41
Internet Services	5	14	9	10	38
Inter Library Loan	25	8	6	1	40
Reprographic Services	17	16	3	2	38
Translation services	12	15	8	5	40
SMS Alert services	10	20	5	6	41
total	168	172	65	37	442

Below is the data received from the users Delhi Public School and total 2200 responses were collected.

Table 2.2 (Sources: Primary)

Services	Very Satisfied	Satisfied	Partially Satisfied	Dissatisfied	Total
Circulation services	18	81	80	21	200

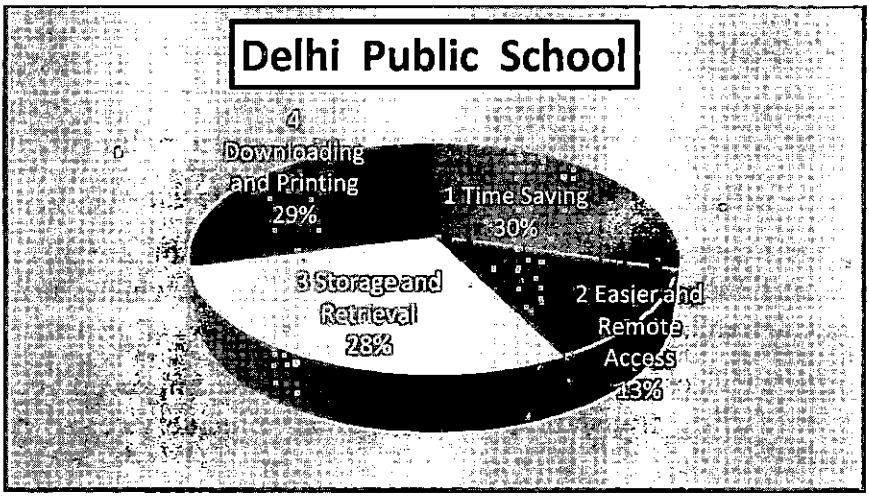


Chart 3.2 (Based on Primary data sources)

Comparison

Both of the above charts show that 63 % users of Kendriya Vidyalaya think that Using the ICT In library services it is much easier and could be accessed the services remotely while only 13% users of Delhi Public School think that it is having less impact of ICT in terms of library services. Around 29% of Average users accept the impact of ICT to time saving, downloading and printing and storage and retrieval. On the other hand around only 12% average of the users of Kendriya Vidyalaya are with rest of three impact of ICT in library services.

7. Result and Discussion:

The above study tells us about the status report of the library services provided by both of the school to the users. The output of this study was clear and tells that the users of both of the schools were aware about the library services provided to them and they know very well the impact of use of ICT application. During the study we came to know that some areas are having the great disparities between both of the school. Also we were able to know that the users of Kendriya Vidyalaya were more benefitted in terms of library services. The users of Delhi Public School were somewhere lacking behind and they need to be made aware about the services and their benefit, which might be more helpful in order to achieve their goal.

8. Findings:

.below are the findings of above study:-

1. It has been seen in the study that half of the users are either partially satisfied or unsatisfied with the services provided to them.
2. Users behavior is uncertain when it comes to the use of ICT application.
3. If the users are not aware or partially satisfied or unsatisfied it means institutions are to think about their services, by which they can uphold their reliability among the students.
4. Some services are to be taken seriously to be improved such as Audio-visual facility, translation facility, Bibliographic services or reprographic services
5. As we see the great differences in the services it means the schools are lacking in the terms of uniformity. Therefore some guidelines are to be provided to the schools by the CBSE for uniformity of services in the schools.

9. Conclusion:

Concluding the above study we see that in the age of the digital era although the CBSE affiliated schools are imparting the education in a better way than that of the state board schools yet schools are supposed to provide more facilities to the students some areas are to be improved and upgraded such as proper use of ICT application, awareness of the services and the rights of the children. Apart from providing the facilities to the students schools needs to improve educational environment, proper availability of study material in libraries, well trained and efficient staff.

References:

1. Use of School Libraries by Teachers: the Case of Oman. (2005, January). Retrieved from https://www.researchgate.net/publication/249945870_Use_of_School_Libraries_by_Teachers_the_Case_of_Oman.
2. *Alison, S.Gregory(2013).* Alison Gregory Named Director of Library Services at Lycoming College. Pennsylvania Libraries: Research & Practice. 1(2) DOI 10.5195/palrap.2013.33

3. Kenneth, W. Berger.(1994). What does the user really want? The library user survey project at Duke University. The Journal of Academic Librarianship, 20(5-6), 306-309.
4. Evidence Based Library and Information Practice1715-720X retrieved from
5. https://doaj.org/toc/1715-720X
6. Michael Buckland (1992). Redesigning Library Services: A Manifesto. Retrieved from https://pdfs.semanticscholar.org/2a7b/918e5a1d6ff5dbed6302405e26b86dd1193d.pdf.
7. Robert Schultz.(2010). The Role of IT in the Ethics of Globalization.Information Science Institute.7,pp.353-368 Retrieved from https://doaj.org/article/000e696be2fc4849b6904ca9b29c4899
8. Charles, Martell (2008). The Absent User: Physical Use of Academic Library Collections and Services Continues to Decline 1995–2006. The Journal Of Academic Librarianship. 34(5),pp.400-407. doi.org/10.1016/j.acalib.2008.06.003
9. William J. Kettinger, Choong C. Lee (1994). Perceived Service Quality and User Satisfaction with the Information Services Function. Decision Sciences,25(5-6), pp.737-766. DOI: 10.1111/j.1540-5915.1994.tb01868.x
10. By Michael E. Casey and Laura C. Savastinuk (2006, 9January).Library 2.0: Services for the Next Generation Library-- Library Journal. Retrieved from http://cil733.pbworks.com/f/Library+2.0+Journal.pdf
11. R.H. Orr, (1973) "Measuring The Goodness Of Library Services: A General Framework For Considering Quantitative Measures", Journal of Documentation, 29 (3), pp.315-332, doi: 10.1108/eb026561
12. Susan Gardner, Susanna Eng (2005, July). What Students Want: Generation Y and the Changing Function of the Academic Library. Project Muse.5(3),pp.405-420. Doi: 10.1353/pla.2005.0034.

Awareness and Usage Pattern of Internet by the Students of Kurukshetra University Kurukshetra

Mr. Yeshpal Singh

Abstract: The rapid growth of information and communication technology has brought change in information scenario. Advent of ICT and its use in library operation has changed information needs and behavior of the users. The purpose of the study is to find out the use of Internet by the users of Kurukshetra University, Kurukshetra. Data for the study was collected via a well-structured questionnaire that was administered to 100 users of library. Out of 100, a total of 86 questionnaires duly completed were received back, showing an overall response rate of 86 percent. The data so collected were analyzed and interpreted with the help of MS Excel. The study findings reveal that 43.02% of respondents used e-journal while 27.90% used E-thesis/dissertation on internet. Majority of the respondents used the internet for research purpose. It was noted that 50% respondents used the internet for chatting. The purpose of the study was to investigate the type of internet sources used by the respondents and their Internet services. The study found that E-mail services were the most used among the respondents. The aim of the paper is consider the various factor of internet usage such as purposes, problems, various e-resources, using methods of internet and satisfaction with internet.

1. Introduction

The information has been the basic need of the society always but at no point of time, Information communication technology (ICT) has played such a crucial role as it is playing today. A rapid information changing world, information needs of learners and knowledge seekers have met with plethora of sources (Velmurugan and Ramasamy 2014). Libraries are constantly expanding their e-resources and e-services developing new technology and procedures to meet the various information requirements of the users through the internet. Technology is used for accessing, acquiring, dissemination and use of information. Application of new technology has brought a lot of dramatic changes in the library and information field. So the library must therefore be alert to change from time to time. Internet facility in India has grown greatly over the years. The use of Internet is rapidly increasing due to its efficiency and capability in providing right information to the right person at the right time. It works around the clock and connects every corner of the world. Internet has become an unavoidable necessarily for every institution of higher learning (Salma and Dominic, 2009).The internet traces its

origin to 1960's where it grew out of an experiment conducted by the US Department of Defense. They wanted to create computer network that could continue to function in the event of disaster, such as nuclear war. That network was known as ARPANET (Advanced Research Project Agency Network) which linked with US Scientific Academic Researchers. "The word internet is derived from two words: INTER connection & NET works. Also referred to as "the Net", Internet is a worldwide system of computer networks, that is, a network of networks, which allows the participants (users) to share information on those linked computers".**ITESL (2007)**

2. About Kurukhetra University

The Kurukshetra University is the oldest University of Higher Learning in Haryana, Which was established in 1956 as a unitary Residential University and its establishment stone was laid by late Dr. Rajendra Prasad. It is located in the holy city of Kurukshetra, land of the historical battle of Mahabharata.

3. Objectives:

The following are the objectives of the study:

1. To find out the frequency of visit to the library by students.
2. To find out the internet sources frequently used by the students.
3. To identify the purpose of using internet by the users.
4. To find out the preferred place for internet usage by the users.
5. To identify the problems faced by students while using internet.
6. To identify the internet based resources, services.
7. To find out satisfaction level with the use of Internet.

4. Review of Literature

Anil Kumar and Parmar (2014) conducted a survey to assess the use of Internet by Kurukshetra University. The study included the critical success factors on Internet usage of Sciences departments. A questionnaire based survey was carried out using 205 postgraduates belongs to deferent departments. Majority of 87.8% respondents were using the Internet for research works and 73.1% for education purpose.

Buhari (2013) conducted a study on internet access and use by academic staff and students and revealed that both staff and students use the internet for research and academic purposes, that the most frequently used places for accessing the internet by respondent are the Internet café. He shows that the inadequacy of internet facilities in departments and colleges of the institution was responsible for denigrating the private internet café by student.

Marimuthu and Paraman (2011) conducted a study on Analysis of Information Technology Application in Academic Libraries in Kuwait. The study summarizes that the development and use of Information Technology enable the libraries to offer their clientele not only the appropriate resources available within their own libraries but also to provide access to information in other libraries. The study also reveals that technology remains one of the primary drivers of change in the way that people work, seek information, communicate and intertain themselves.

5. Research Methodology

The questionnaire was designed for the users to assess their need about internet. The questionnaire included different types of questions such as multiple choices.The various aspects covered in the questionnaire.The well-structured questionnaire was administered to the students. The investigator personally visited libraries for taking response through the questionnaire. For filling up the questionnaire from students, questionnaires were randomly distributed in the libraries.Random sampling process was followed for data collection. The sample was random in the sense that the present study consisted of male and female students randomly selected from JLN library Kurukshetra. 100 questionnaires were distributed among the male and female respondents of this University and out of 100 questionnaires only 86 questionnaires were received back.The data so collected was tabulated and analyzed with help of MS Excel and observation made during the study. The quantitative data collected with the help of questionnaire was analyzed with the help on percentage method.

6. Data Analysis

Table- 1 Gender wise Distribution of Respondents

Gender	Respondents	Percentage
Male	53	62.62

Female	33	38.37
Total	86	100

Source: Table compiled from the data collected from the questionnaire.

Table-1 Showsthat out of 100 respondents 53 (62.62%) respondents were maleand 33 (38.37%) respondents were femaleshowing more or less the students are equal respondents of this category.

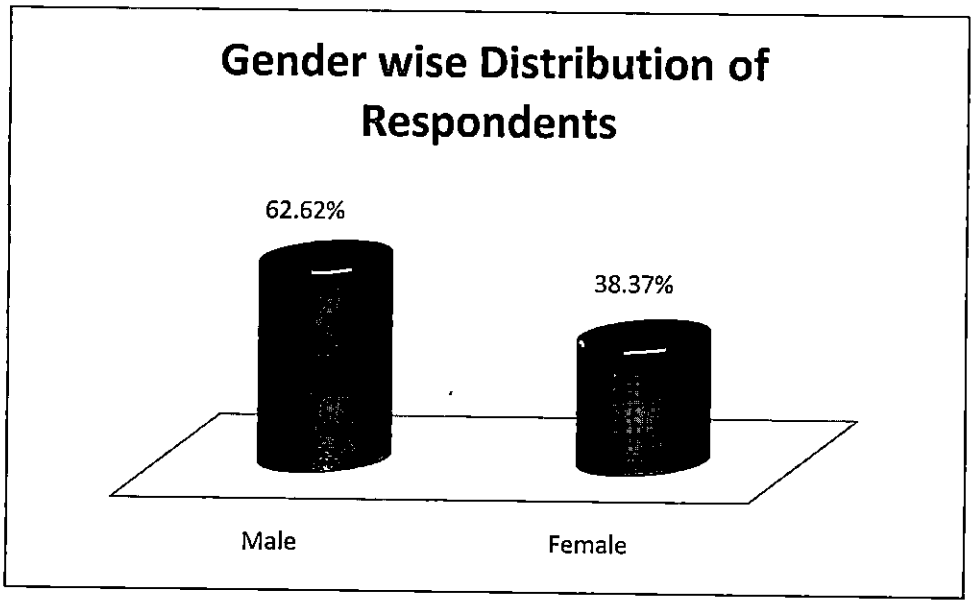


Table- 2 Frequency of Use of Internet

Frequency	Total	Percentage
Daily	27	31.39
Twice a week	33	38.37
Weekly	17	19.76
Once a Month	9	10.46
Total	86	100

Source: Table compiled from the data collected from the questionnaire.

Table-2 highlights that 31.39% respondents visited library daily and 38.37% respondents visited the library in twice a week.It is also evident from the table that 19.76% respondents visited weekly, 10.46% of them once a month.

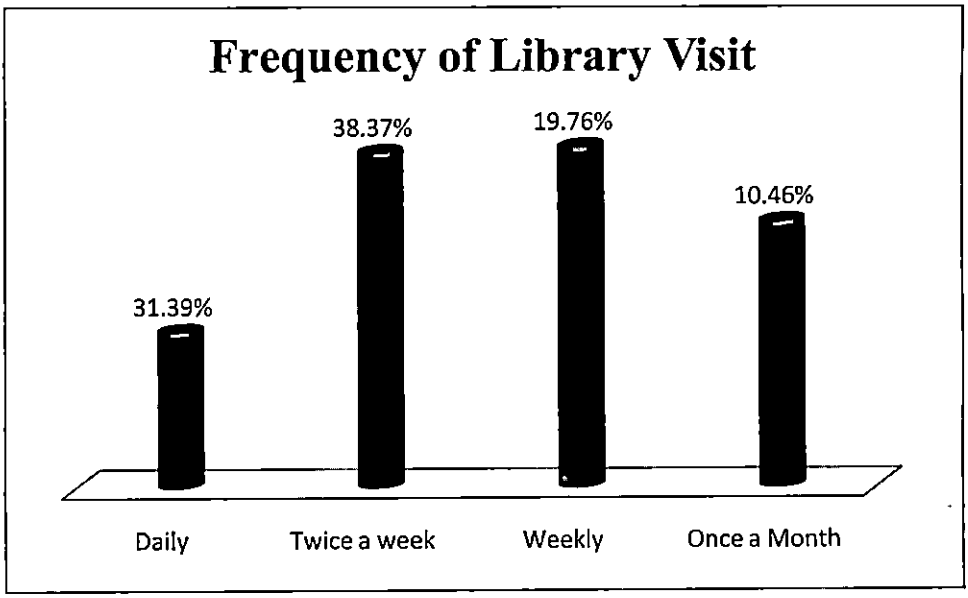


Table- 3 Preferred Place of Using

Access point	Total	Percentage
Library	31	36.04
Cybercafé	2	2.32
Home	9	10.46
Department lab	17	19.76
Hostel	26	30.23
Others	1	1.16

Source: Table compiled from the data collected from the questionnaire.

Table-3 exhibits the use of internet which could be accessed at various places within the university or outside the university. It can be revealed by the evaluation of the usefrom the library, home, and department lab, cybercafé inside the campus and from home. It has been found that 36.04% students access the internet were in the library, followed by 30.23% in hostel. 19.76% respondents access the internet in the department lab. The result depict that the cybercafé was used less in accessing the internet as compared to home.

Table- 4 Purpose of Browsing Internet

Purpose	Total	Percentage
Research	46	53.48
Communication	13	15.11
To prepare for class assignment	27	31.39
To consult E-resources	21	24.41
Lecture Preparation	9	10.46
Chatting	43	50
Entertainment	33	38.37

Source: Table compiled from the data collected from the questionnaire.

Table-4 reveals that 53.48% respondents browsing the internet forresearch whereas 24.41% respondents browsing the internetforconsult e-resources. Table also shows that 31.39% respondentsbrowsing the internet for prepare for class assignment. The Table indicates that 50% respondents of browsing the internet for chatting. It also indicates that 33.37% respondents browsing the internetfor entertainment whereas 15.11% respondents browsing the internet for prepare for communication.

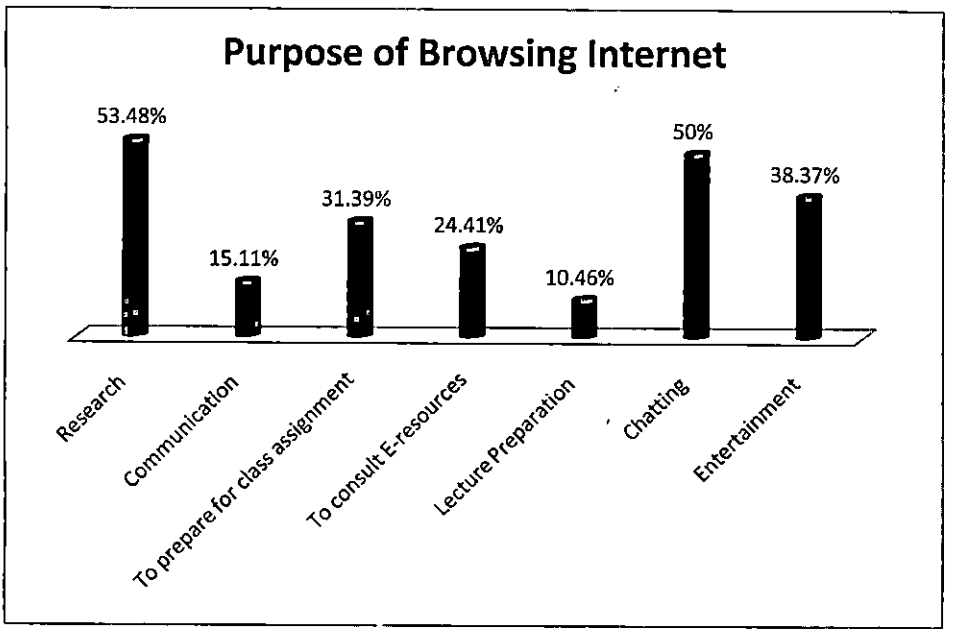


Table- 5 Time Spent on Internet

Time duration	Total	Percentage
Less than 1 hour	31	36.04
1 to 2 hours	24	27.90
2 to 4 hours	15	26.78
4 to 6 hours	12	13.95
More than 6 hours	4	4.65

Source: Table compiled from the data collected from the questionnaire.

In the University 36.04% respondents spend less than1hours per day, whereas 27.90% users spend 1 to 2 hours per day.2-4 hours' time is spend in using Internet 26.78% per day. 13.96% users use Internet for 4 to 6 hours per day

Table- 6 Use of Information Sources on Internet

Information Source	Total	Percentage
Conference Proceeding	13	15.11
E- Books	17	19.76
E-Journal	37	43.02
Reference books	12	13.95
E-Magazine	9	10.46
Databases	6	6.97
E-Newspaper	19	22.09
E-Thesis/dissertation	24	27.90

Source: Table compiled from the data collected from the questionnaire

Table-6 Users may use the Internet resources for a variety of reasons. The need of using Internet resources differs from one user to another. It can be seen from **Table 6**shows that E-Journals and E-thesis/dissertation both were the top priority of the University respondents. Majority of them 43.02% respondents were mostly using the E-journals under the internet resources while 27.90% were E-thesis/dissertation followed by 19.76% were E-Books use it with the requirement of Information need.

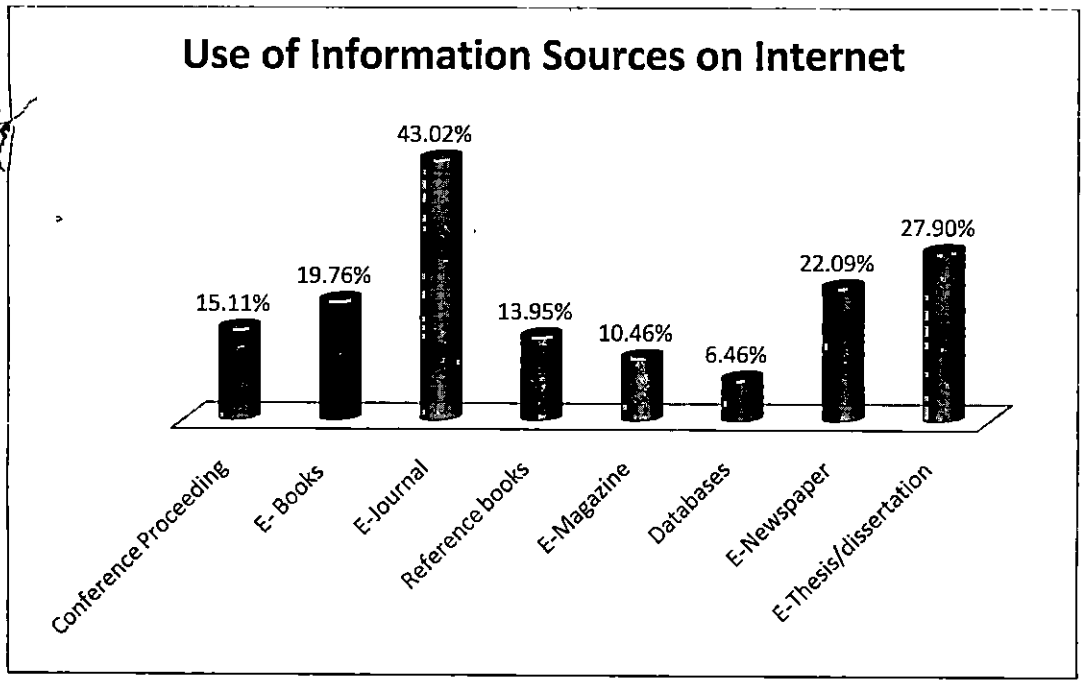


Table- 7 Awareness about Use of Internet Services

Awareness	Total	Percentage
E-mail	76	88.37
World Wide Web (WWW)	52	60.46
Search Engines	33	38.37
File Transfer Protocol(FTP)	7	8.13
Bulletin asked Questions	2	4.32
Frequently asked Questions (FAQ)	4	4.65
Remote Login	16	18.60

Source: Table compiled from the data collected from the questionnaire

Table 7 shows that 88.37% users use E-mail service on internet. Second most used service in the University is use of WWW. Search Engine is third used Internet service. In the University 18.60% users use Remote Login service. In fact respondents are not aware of the fact that all these services are being used only through WWW.

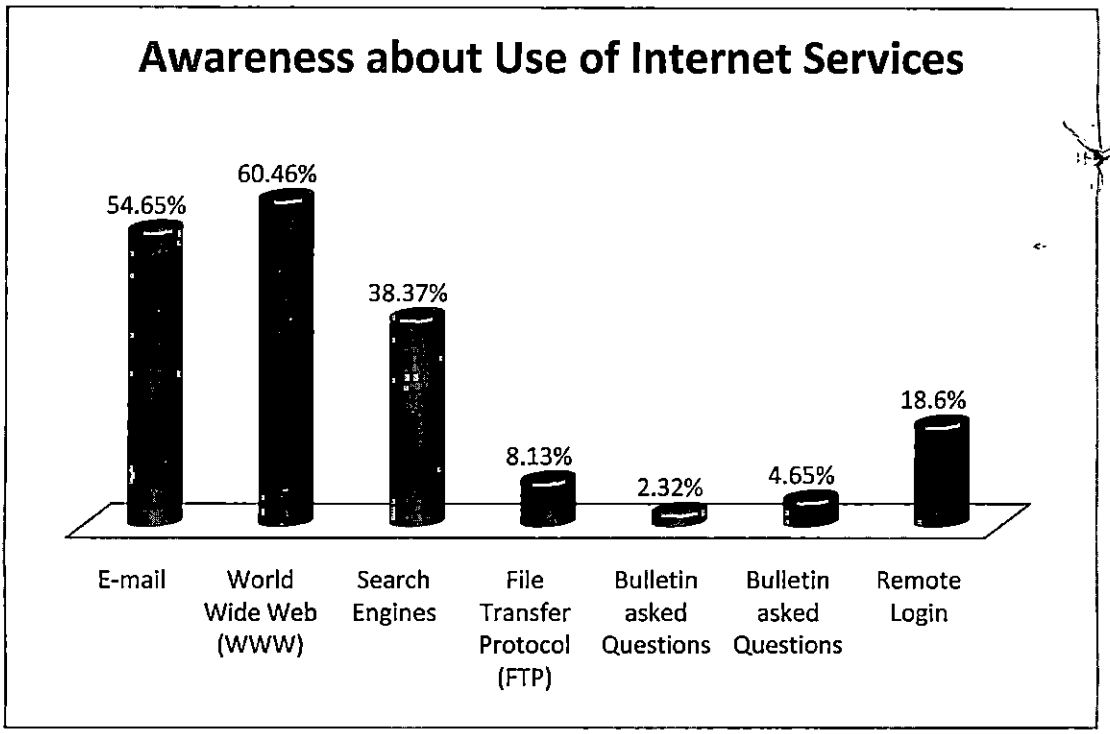


Table- 8 Problems Faced by Users in Using Internet

Lack of time	**19**	**20.09**
It is waste of time	0	0
it much information retrieved	13	15.11
Slow downloading/internet speed	27	31.39
Inform.ation overload	19	11.82
Time consuming	13	13.97
Failed to access full text	37	37.63
Uncomfortable in reading e-copy	14	25.80
Lack of IT skill	22	11.82
Lack of awareness	11	21.50
Shortage of Time allowed for using Internet	25	29.06
Others	3	3.22

Source: Table compiled from the data collected from the questionnaire

Table-8 reveals that 20.09% respondents faced problem lack of time whereas 11.82% respondents faced problem of lack of IT skill. The table also indicates that 15.11% respondents faced problem of availability of too much information retrieved whereas 37.63% respondents faced problems on internet of failed to access full text. Shortage of time allowed for using internet is the major problems faced by Internet users which are responded by 29.06 users in the University.

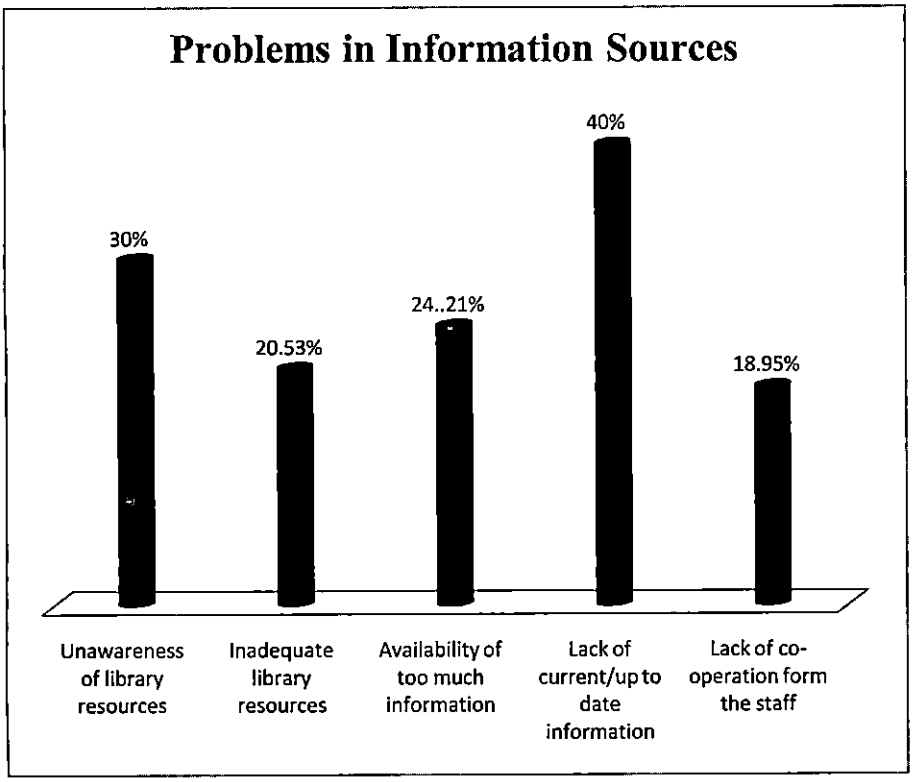


Table- 9 Methods of Learning Internet Skill

Methods	Total	Percentage
Own learning	49	56.97
With the help of friends	17	19.76
Trial and error	12	13.95
Help of library staff	8	9.30
Through Reading Books	0	0
Through Library Orientation	0	0

Source: Table compiled from the data collected from the questionnaire

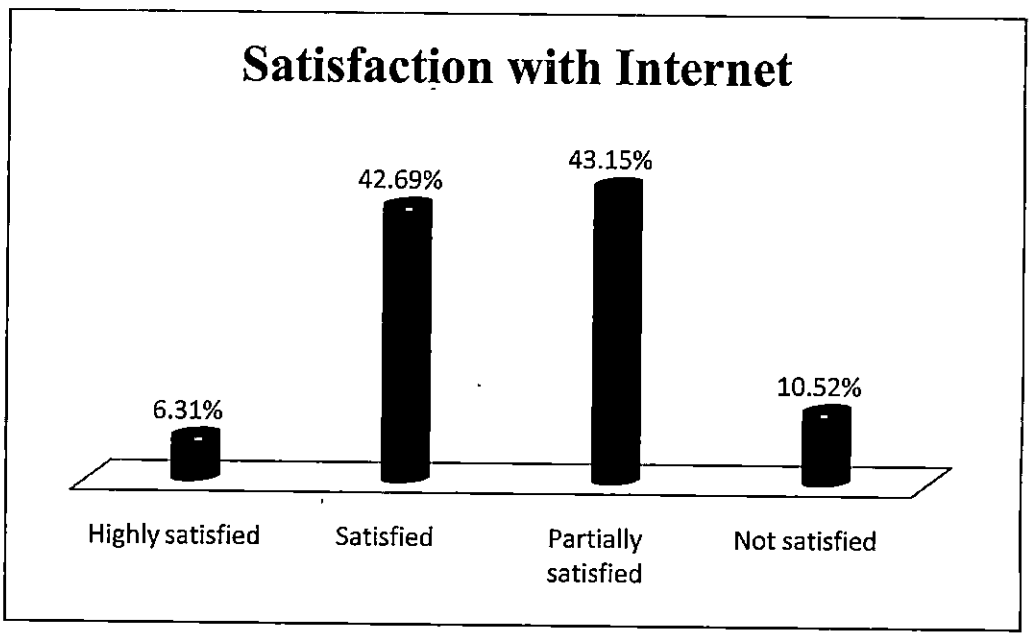
As per **Table 9** most of the users seek guidance from Own learning and 19.76 respondents seek guidance from with the help of friends. Results show that 13.95% users learnt Internet skill through trial and error method. 9.30% respondents in the University learn internet skill through library staff. Thus the library needs to arrange some sort of short term training/orientation program for the Internet users.

Table- 10 Satisfaction with Internet

Level of Satisfaction	Total	Percentage
Highly satisfied	12	13.95
Satisfied	37	43.02
Partially satisfied	21	24.41
Not satisfied	16	18.60
Total	86	100

Source: Table compiled from the data collected from the questionnaire

Table-10 shows 13.95% respondents were highly satisfied with the Internet facility whereas 43.02% respondents were satisfied with Internet. It also indicates that 18.60% respondents were not satisfied.



7. Major Findings

On the basis of survey, conducted in respective institutes, the Kurukshetra University following are the Major finding of the study. 31.39% of respondents visited the library daily .38.37% of respondents visited the library twice a week whereas 19.76% of respondents visited the library weekly.

10.46% respondents of NIT visited the library once in a month 36.04% of respondents prefer the use of internet in the library and 30.23% prefer the use of internet in hostel.

Main purpose of the using internet research, education, chatting entertainment etc.

Majority of respondents 53.48% of used the internet for research purpose while 50% respondents of used the internet for chatting whereas 24.41% respondents consults the e-resources.

38.37% of respondents use the internet for entertainment.

36.04% of respondents less than one hour spent time on internet followed by 1 to 2 hours spent time on internet. .

43.02% respondents of Kurukshetra University used e-journal information sources of internet while less number of respondents 27.90% respondents of used e-thesis/dissertation sources on the internet.

A majority of the respondents 88.37% were aware about internet services and 60.46% respondents were aware about the WWW while 38.37% respondents of used the search engine on the internet services.

31.39% of respondents faced problem slow downloading speed regarding problem in using internet and comparatively lesser number of 29.06% of respondents faced problem shortage of time allowed for using Internet while 20.09% of respondents faced the problems time consuming in using the internet.

43.02% of respondents were satisfied with the internet and 24.41% 0f respondent was partially satisfied while 10.52% of respondents were not satisfied with the internet.

8. Conclusion

The university libraries are valued by the users for their support in academic and research through Internet. The present survey was aimed to study the use

of Internet by the students. The main purpose of using Internet is research, communication and education. Chatting and entertainment others feature of the Internet. Most of the users prefer to use E-journals and online articles. They give least priority to find conference proceeding. Most of the users used the E-mail service. Awareness level about WWW and Search Engines among Internet is high .All services are less popular. The users encountered it much information retrieved, longtime taken in downloading, failed to access full text over Internet problems in using Internet.

Based on the findings, the following Suggestions are put forward to improve the Internet in University

1. Library should be organize training/orientation programme for the students

2. The speed of Internet should be increased so that the users can speedily access the information and utilize the information by the important work i.e. research work, education work, entertainment.

3. The library should make the users aware of the others Internet services also.

4. In the University has fixed 30 minutes time in one sitting for all the uses. This is not sufficient time use Internet and library should increase this time to at least one hour.

References:

1. Al-Ansari, H. (2006). Internet use by the Faculty Members of Kuwait University. *the Electrinic Library, 24* (6), 791-803.
2. Aquil, M., & Ahmad, P. (2012). Use of the Internet by Research Scholar and Post Graduate Students of the Science faculty of Aligarh Muslim University. *International Journal of Digital Library Services , 4*(2), 14-21.
3. Buhari, S. R. (2013). Internet Access and Use by Academic Staff and Students in a Nigerian Polytechnic. *International Conference on Communication, Media, Technology and Design*, (pp. 108-110). Famagusta – North Cyprus.
4. Hinson, R. (2006). Internet Adoption Final Year Students in Ghana's Oldest Business school. *Library review, 55* (5), 314-323.
5. Khan, S., & Dominic, J. (2009). Use of Internet by the Faculty Members of Engineering Colleges of Moradabad : A Comparative Study. *ICAL Library*

service , 43-57.

6. Kumar, A., & Parmar, M. (2014). Use of Internet by the Research Scholars & Faculty Members: A Survey Study of Kurukshetra University Kurukshetra in the Disciplines of Science. *IOSR Journal Of Humanities And Social Science, 19* (4), 01-15.
7. Kumar, R., & kaur, A. P. (2007). Internet Use by Teachers and Students in Engineering Colleges of Panjab, Haryana and Himachal. *Electronic Journal of Academic and Special Librarianship, 7* (1), 47-56.
8. Mahajan, P. (2007). Internet Use by Researchers: a study of Panjab University, Chandigarh. *Library Philosophy and practice, 8* (2), 1-4.
9. Veeramani, M., Paraman, V., (2011). Analysis if Information Technology (ICT) Application in Academic Libraries in Kuwait. *Library Hi Tech News.* 28(2), 9-14.
10. Mulla, K. R., & Chandershekara, M. (2006). Internet Users: Mysore University campus (India). *SRELS Journal of information Management, 43* (3), 243-263.
11. R.Bhatti. (2010). Internet Use among faculty Members in the Changing Higher Education Environment at the Islamia University of Bahawalpur: Pakistan.
12. Velmurugan, C., & Ramasamy, G. (2014). Utilization of Information Sources and Services through Internet among the User Community in an International School, Chennai, (TN), India: a Survey. *International Research: Journal of Library and Information Science, 4* (3), 87-98.

Author Biograprhy



Mr. Yeshpal Singh has done his Masters in Library & Information Science and pursuing M.Phil. from Kurukshetra University Kurukshetra. He has qualified the UGC-NET exam in Library & Information Science. He has published articles in national and international conference proceedings. He may be contacted at E-mail: sanwariarulezz@gmail.com

Giving Quality Services in a School Library

Dr Lopita Mukherjee

Librarian
ST. JOHN'S DIOCESAN GIRLS' HIGHER SECONDARY SCHOOL
17,Sarat Bose Road
Kolkata-700020
Email: lopitamukherjee2011@gmail.com

Sabita Kundu

Librarian: Techno India-Batanagar
Chakroborty Para, Batanagar, South 24 Parganas, Kolkta,
Pin: 700 140, West Bengal
bitu130506@yahoo.com
sabita.kundu@biemsindia.org

Abstract: The role of a school library in nation building can not be denied but their condition,as seen in past three surveys, is not very bright. Measures must be taken to give quality service. The Government, the boards of education, the school authorities and the librarians must try and develop the school libraries. The Government must monitor that there is library in every school, supervise the standard, provide fund, build model school libraries and organize seminars and workshops for school librarians. The authorities must keep library period for each class, form library committee, provide internet, computer and photocopying machines to the library and organize book exhibition to attract the students to the library. The librarian must try to inculcate reading habit in the students, must have proper cataloguing and classification system and must try to influence the Principal to achieve the betterment of the library.Social Media tools of ICT may be used to attract the students.

Keywords: School library, Three surveys, Boards of education, Library in every school, Library committee, Betterment of the school library, Social Media.

1. Introduction

Necessity of School Libraries

In every country the academic libraries particularly the school libraries have been considered, at least in principle, the part and parcel of education system. Without properly functional school libraries, the national aspirations cannot be achieved.

The importance and the utility of school libraries have been felt by education commissions, educationists and every person linked with education. The students

are the builders of the nation and development of a country depends largely on the educational development of the students. A school library has a very major role to play in this field. In order to satisfy the thirst for knowledge and to establish the foundation in each subject the school library is very much essential. Since the number of students in a class room is increasing day by day the classroom teaching may not be sufficient for a student; moreover an intelligent student may want to complete his lesson with several books of the same subject in addition to class room teaching. This leads to independent reference work, which is achieved by successful use of school library.A school library also develops independent reading habit of the student. S. R. Ranganathan stated, "The result of modern re-thinking on education is to make the library the heart of the school from which every activity in the school radiates and by which it all gets irradiated."[1]

1.2.Goals of School Library

1. School library creates library habits and a sense of library civics in students.
2. School library work influences the classroom work and vice versa.
3. It develops recreational and inspirational reading habit among the students.

It teaches the art of note taking and bibliography building

4. A school library attracts all students to itself based on every possible stimulus.
5. It helps in character building.
6. It acts as stepping-stone for using other libraries.[2]

2. Condition of school libraries in developing countries

A school library is part of a dynamic ever-changing system largely depending on the local socio-economical and cultural environment and over all educational systems prevailing in a country.

The actual state of affairs of school libraries in many parts of the world is debatable. In the third world countries like India, the school libraries seem to be largely neglected. Specifications and standards for school library organization seem to be lacking Lack of trained staff; adequate books and proper processing system are responsible for their miserable condition. Introduction of modern technology is like a dream and ignorance of library staff and the teachers of usefulness of library and proper utilization of the resources are adding to the misery. There is no fixed ratio between the number of books and number of students and complete

absence of any set standard was felt.[2]

3. Purpose

School libraries are most neglected sector of Library Science. It is very much necessary to discuss the problems and prospects of school libraries in national and international level in presence of eminent personalities.It is also beneficial to state the ways to improve the condition of school libraries.

4. Basis

The suggestions are based on the survey conducted in 2000 of 134 schools, resurvey of same schools in the year 2006 for PhD thesis and again a survey of 15 schools in the year 2015 for presentation in a conference. Several case studies were also carried on for writing several articles.. Experience as a school librarian for more than twenty years has also helped to write this article.

5. Ways to improve the condition of school libraries

How can the development of the school libraries achieved and who can take initiative? These have been in the following paragraphs.

5.1 The persons or organizations taking initiative

The school authorities in case of private schools and the Government or the Board of Education in case of government aided school and the Principal must take initiative to improve the condition of school libraries. A school librarian must be an energetic person always willing to try utmost to give maximum service in adverse condition by maximum utilization of available resources.

5.2 Steps to be taken by Government and the Board of School Education

Government must take steps to help develop the school libraries. They must realize that libraries should be attached to schools and they are to maintain a standard. Similarly the Boards of school education should also strictly monitor establishment and maintenance of school libraries as the most vital focal points in school education. The following suggestions may be implemented by the Government or Board.

5.2.1 Every School Must Possess a Library

According to IFLA / UNESCO School Library Manifesto 1999 "the school library

provides information and ideas that are fundamental to functioning successfully in today's information and knowledge based society. The school library equips students with lifelong learning skills and develops the imagination, enabling them to live as responsible citizens." [12]Hence there is no doubt that every school should possess a library. But merely possessing a library for just decoration is not desirable. The library should function to fulfill the need of the users who are the teachers and the students of the school.

5.2.2. Every School Must Have Trained Librarian

The Mudaliar Commission appointed in 1952, by the Government to examine the prevailing education system commented about the school librarian, "Efficient Library Service must be given by appointing highly qualified and trained librarian who would be able to guide interests of students, give due publicity to good books, old and new, available in the library, prepare and circulate booklist suitable for different grades, display 'blurbs' and cutting of book reviews on notice board, arrange book exhibition, conduct a group reading project and consult in selection of good books."[3]Trained librarian should be there in every school library be it a Secondary, be it a Higher Secondary.

5.2.3. Standard

Certain standard should be fixed for the school libraries in respect of number of books, types of books, number of staff and services to be offered. A minimum number of books should be fixed for a minimum number of students and there should be a ratio of student and books. The books should be of different types not merely a number of useless books for increasing the stock. Absence of standard had resulted in variation of condition and services of the school libraries.

5.2.4. Training for the Teachers Looking After the Library

In many schools the teachers looked after the libraries. The teacher librarian, as viewed by Ralph, does not require an extensive knowledge of classification and cataloguing as the main emphasis is "on teaching pupils to use a library rather than on library techniques in its narrower sense.[5]They must know principles of school library administration, technical processes in school library necessary for its efficient functioning, how to use basic reference books and how to motivate the reading habits of the children. They can be given practical training in a school library.

5.2.5.Workshop / Seminars for School Librarian

Very few workshops were arranged for the school librarians. Government, School Authorities, Heads of the Schools or persons linked with school education can arrange workshops or seminars on school libraries. This will enrich their knowledge, as the librarians will be able to meet each other, exchange their views and solve common problems together.

5.2.6. Adequate Finance and Basis of Fund

The source of financial support for library in case of Government aided or Government schools are nominal library fee and irregular Government Grant. In case of non Government schools the funding depended on the will and whim of management or the Head of the institution .The `library fee' collected by the schools are not always spent for library development. Efficient functioning of a good library needs fund. The school authority must be fully aware of it and they must provide the library fund needed for efficient functioning. A fund calculated on the basis of number of students must be fixed and Government should provide this money for the Government Schools and Government aided schools and motivate the private school authorities to provide the same amount of money. Firstly a capital grant should be provided for basic collection without which a library cannot function. Recurring grants for purchase of books, periodicals and other library materials should be provided annually. The grant sanctioned for the library should be spent for library development only.

5.2.7. Library Fee and Fine

In most of the schools library fee was collected from the students. In case of Government or Government aided school library fee was nominal and non Government schools charged handsome amount and it varied from school to school. The school may collect a library fee, which may be fixed keeping in view the economic condition of the students. It should not be too much or to little. However, late fine should be collected and fine for loss of library cards must be imposed. But the fund collected from library should be spent on library only. It should not be used for other purposes

5.2.8. Model School Library

Government may construct some model school libraries which will be regarded as examples to other schools. The authorities and the school librarians will try to develop their school libraries in that way.

5.2.9.Inspection and Supervision

Dearth of any committee for supervision of school libraries have resulted in discrepancy in stock, staff, processing and services offered by the school libraries. A committee may be formed by the Government for monitoring utilization of grant, advising the Government regarding amount of library grant and on observance of standard.

There should be some arrangement for inspection of the school libraries by some officer of the education department annually. It is to be also seen whether the library grant is really spent on library development and the number of books and periodicals purchased annually. The general condition of the library is also to be ascertained.

5.2.10. Library Oriented Syllabus

The syllabuses of secondary, higher secondary and even for graduation courses are framed in such a way that no reference studies at library is needed. The syllabus is rather text-book oriented than library oriented. This system should be changed and special credit should be given to those students who will prepare the answers after serious library work.

5.3 Steps to be taken by the School Authority

The school authority must realize the importance of school library and must try to provide quality service to its customers. In order to do so they may consider the following –

5.3.1. Book Selection

Book selection must be done properly, with the help of teachers, students and Principal. A register should be maintained to note down the request for purchase of books throughout the year. Subject teachers must be consulted for buying subject books and English and Bengali teachers for selecting storybooks. The students who borrow the books regularly may be consulted as their opinion will be valuable, the importance given to them will encourage their reading habit and other students will try to follow them to get importance. Books possessed by these libraries should be of three categories, namely (1) informative books, (2) recreational books, and (3) inspirational books.[6]

5.3.2. Library Committee

A library committee should be formed consisting of the Principal, librarian, some of the teachers and interested students. The committee will help the librarian in major decision taking process. The demands for requisitions forwarded by a

committee will be stronger. The committee will know the condition of the library and will enlighten the other members of the school about it. Finally, book selection, periodical selection and other activities will be more democratic in nature, not wholly depending on the whim and will of the librarian.

5.3.3. Library Hours and Library Period

The library should be open during school hours for the students and the teachers. The librarian or the library staff should be there instead of going to the classroom to teach or to do substitution or examination duty. It is better to open the library half an hour before school and close it half an hour after the school gets over so that the interested students may come, as they do not have free period. It is better to have a separate break time for the library staff, avoiding the break time of the school for its maximum use.

Each class must have a library period or at least some fixed time, once a week, to come to the library. If the class consists of a large number of students half the class should come at a time otherwise the quality of service will be not up to the mark.

5.3.4 Technological Advances, Photocopying Machine

Computer and photocopying machine should be there in these libraries.

5.3.5. Non-book Materials

The school libraries must have non book non-book materials like CDs, cassettes etc along with maps and charts.

5.3.6. Internet Connection

There should be Internet connection in every school libraries as it plays major part in dissemination of information.

5.3.7 Book Exhibition

Book fair or book exhibition by the publishers should be encouraged by the school authority as the display of colourful books will make the students eager to possess books and read books thus inculcate reading habit in them.

5.3.8. Meeting of Librarian and Teachers

A major set back of a school library is the librarian's total ignorance of curriculum, instructional method and teachers' ignorance of the library and its resources. This problem can be solved if the teachers and librarian sit together once a month. The teachers may inform the librarian the topics they will teach or the project works that would be given and the librarian can direct them to the library resources that

can be provided for the purpose. In addition to this the librarian must give the different subject teachers the list of books which are there in that subject.

5.3.9. Cultural Programmes

To attract the students to the library the cultural programmes of the school may be organized from the library. This will bring them to the library and they will automatically use the books which are needed for these programmes like books for drama, books for songs and poems, books for General Knowledge etc and gradually will develop the habit of choosing and using books.

5.4. School Librarian

A school librarian should be an energetic personality, full of new ideas who will be able to attract the students to the library. He / She must have soothing and charming personality and must be able to guide the students to the required books. A school librarian may play a major part in improving reading habits of the students. It is from him/her that the students learn the library civics. A student enters the school library at a very early age. An able librarian with necessary help and guidance may turn him towards libraries throughout his life. A librarian may take the following steps for this purpose.

5.4.1. Improving Reading Habits

Serious measures should be taken to develop reading habits of the students. Story telling, as suggested by Ranganathan, with the help of music may be arranged. [1]

Dramas written by eminent writers may be staged during the cultural programmes of the school. This usually attracts the students to that book and to that author. Directing the students to write book review and reading out the best one also helps. The students who have taken the maximum number of books from a section may be given a prize at the end of the year.

5.4.2.Proper Cataloguing and Classification System

Proper cataloguing and classification system should be adopted so that the students will be habituated with them. If the fund, time and budget do not permit the librarian to adopt proper technical means there should be some sort of arrangement so that the books can be traced.

5.4.3. Student Background and Library Service

The type of library service rendered may be determined according to the economic condition of the students. In most of the aided schools the students come from poor family. They do not have enough money to buy the textbooks. So preservation

and distribution of textbooks must form important library service in these schools.

In well renowned English medium schools the students can buy the textbooks as they come from middle class or upper class family. So, textbook preservation is not too important in these schools. Rather encyclopedia and other reference which the students often need for their project work are more important here. But it may be noted that the students of these schools also need text books other than the book prescribed by their school as a careful scrutiny of number of books in a subject strengthen their basic knowledge of that subject, and the students of the aided school may also be provided encyclopedia if the `budget permits.

5.4.3. Approaching Benevolent Organization andPersons of the Locality

The school librarian and the Principle may approach benevolent organizations, or the educationist or leaders of the nations may make a general appeal to them. The school library may also approach the ex- students or benevolent persons of the locality for help.

5.4.4. Library as Information Center of School

The library may be made an information center of the school. Various information delivers to students: like from when the examination or vacation will start, the last day for submission of project work, the sports day and annual function day andmuch other such information may be generated from the library.

5.4.5. Students Taken to Various Libraries

The students coming to the schools libraries did not know how to behave in the library and how silence must prevailed inside the library. Most of the students did not know the library civics..They may be taken to reputed libraries from where they can know what they are expected to do in the libraries.

5.4.6. Influence on Principal / Management

Generally the Head of the institute does not want to fulfill all the demands of the librarian. It is the job of the librarian to make him / her realize the active role library can play in teaching and learning. He / She must have the personality and the power of reasoning necessary for this purpose.

5.4.7. Influence on Teachers

It is the librarians' job to make the teachers acquainted with the library stock and make them realize how they can be useful for proper utilization of library resources.

6. ICT in school libraries

With the arrival of ICT libraries are changing in terms of everything in terms of functions, resources, or services, as a result of which the traditional libraries are shifted to automated libraries and finally to Digital Libraries. The e-book, e-journal, e-news, e-marketing etc make millions of users throughout the world. To keep pace with the rising digital environment the libraries are responding optimistically. They are combining their traditional services with internet based services. The academic libraries are responding to these changes. The school libraries are rather slow to respond to these changes.

6.1. Implementation Plan for Modern Technologies in School Libraries

6.1.1.1 Library Automation

A school library must be automated. Suitable software should be used and all housekeeping operations should be automated.

6.1.2. Internet

Internet must be there and it must be used to avail e-books, e-journals, catalogues, encyclopedias, abstracts and much other information.

6.1.3.Main Server and terminals

There should be a main server connected to several users' terminals. Terminals may be placed outside library such as in Principal's room, office etc information exchange can be done beyond the four walls of the library.

7. Main Services

7.1. Free online journals

The teachers and students may have electronic access to e-books and free online journals and protocols for the laboratories.

7.2. Free online books

7.3. Free encyclopedias

7.4. Free Newspapers

7.5. Free online dictionaries

7.6. Free online catalogue services

To save the time of the reader the important websites which are useful for them can be written on the board.

7.7. Question Bank Cell Service

There is great demand for previous years' question paper and model question papers before examination. These must be kept in an organized way and provided on demand.

7.8. Helpline Centre

The library may act as Helpline centre to students. The librarian may give personal service to each student helping him to find documents answering his interest pin-pointedly, exhaustively and expeditiously.

7.9. Telephone or Cell phone service

If the user asks any information through telephone or mobile phone the librarian may give him proper answer and guidance.

7.10. Online enquiry service

If the user wants any information for any project or competition through online it should be answered.

7.11. E-mail service

This service has got advantages of answering in details than what could be possible at a busy reference desk. It provides the librarian the time to think about the query properly, to consult his colleagues or subject experts, if necessary.

7.12. Chat based service

Announcements for tests and internal competitions and many other things may be sent through instant messaging.

7.13. Inter Library Loan service

The reference materials, model question papers and other materials can be shared in this way.(Sheik,2012)

8. Social Network

In the era of ICT social media is playing a lead role. The use of social media is very popular among the youth. If the school libraries use social media they can attract more students. The school library may use blogs to express librarian views and opinion, or to express teacher's opinion about any book, it may be story book, or subject book. Librarian can also use Wikis and You Tube for giving instruction. Wiki can also be used for book recommendation, cataloguing and tagging by the users.[10]

8.1. Blogs

Blogs can be used for academic libraries in various prophases – it provides the opportunity for conversation and communication from home to library. It can be used for library marketing. It can be used to improve the cataloguing department. Its helps to develop writing skill, assists in deep learning.

8.2. Face book

Face book is very popular among the students and can be used successfully for various purposes. New Arrival Display both photograph and names, display of list of books for any project work given to a particular class, any particular information regarding issue or submission of books may be given here. To the school libraries acceptance of Face Book create a new type of rapport with the users and increase consciousness of the collection among the users.

8.3. Flicker

It allows storing, editing, sharing, generating products with images, defining forms of access to images, and maintaining contact with online photography community. [10]Photographs of prize day, annual function, RabindraJayanti celebration, Christmas Programme and similar types of programmes can be shared by flicker.

Flicker enables the libraries to expose their collection of photograph and other images to the world.[10]

8.4. You Tube

School libraries can share Videos of the above mentioned programmes. They can also post any videos that they think will be useful for character building, general awareness or any other of such type.

8.5. Instant Messaging

It is a way to communicate with the students. This is specially effective for the students who are shy and can not approach help desk or other help mechanism.

8.6. Wikis

Wiki is a page or collection of Web pages designed to anyone who accesses it to contribute or modify the content.(http:searchunified, 2016). This can be successfully used to engage the students to write book reviews, preparing list of book they want or list of book school is buying so that they can give suggestion and various such other purposes.

9. Conclusion

The school library plays a great role in nation building as it strengthens the basic foundation of the youth in different subjects. Proper education system should be devised in such a way that the school library can play central or pivotal role in the education system. The educationist, the library scientist and every knowledgeable person of the society must realize the importance of school libraries and are expected to offer new ideas and guidelines. There should be seminars, workshops, and meetings organized all over the country to bring revolutionary changes in the school libraries. It must make room for Modern Technologies and must act as the heart of the school from where all other activities generate.

References:

1. Ranganathan, S.R. *New education and school library: experience of a half century.* Delhi: Vikas Publishing House, 1973.
2. Mukherjee, L. (2009). *An Evaluative study of School Libraries in and around Kolkata.* PhD thesis. Kolkata: Calcutta University
3. IBID
4. India. Ministry of Education (1953). *Secondary Education Commission; A report,* Delhi: Manager of Publications.
5. Ralph, R. G. (1949)*The Library in School. London*: Turnstile Press.
6. Trehan, G. L. and Malhan, I. V. (1980). *School Library Management.* New Delhi: Sterling Publishing Limited.
7. Sheikh.Jahanara (2012).*Innovative Challenges in Information Services: Changing Paradigm for Sustenances of L I Centres in Digital Era: A case study for Government COLLEGE FOR Men, Kurnool, Andhra Pradesh.* Innovative Challenges in Information Services: Changing Paradigm for Sustenancesof Library & Information Centres in Digital Era. Kutub Publication. New Delhi.
8. social-media (2016 March) Retrieve from http://whatis.techtarget.com/definition/social-media
9. Definition (2016 March)Retrieve from http://searchunifiedcommunications.techtarget.com/definition/Skype

10. manifest(2007, April) Retrieve from hhtp://www.ifla.org/vii/s11pubs/manifest.htm.

Authors Profile



Dr. Lopita Mukherjee is the librarian of St Johns' Diocesan Girls' HS School. She is working as a school librarian for more than 20 years. She has Masters Degree in Bengali and Library and Information Science and PhD degrees in Library and Information Science. She has life Membership of Asiatic Society, MALIBNET, ILA, IASLIC and BLA. She has attended more than 30 national and international conferences and workshops and has written over 20 articles in national and international journals and books. She has gone to Srilanka and Mascot to participate in a conferences. Email: lopitamukherjee2011@gmail.com



Sabita Kundu is the librarian of Techno India Batanagar. She is now working as a college librarian. She served more than 20 years in library and information field. She has Masters Degrees in Bengali and Library and Information Science. She has M.A in Bengali, B.Ed and Library and Information Science and pursuing PhD degrees in Library and Information Science. She has attended more than 30 national and international conferences and workshops and has written over 20 articles in national and international journals and books. E-mail: bitu130506@yahoo.com

Indian Statistical Institute Library- One of the Living Learning Libraries: Maintaining and Preserving Past For The Future- A Survey

Sabita Kundu

Librarian: Techno India-Batanagar
Chakroborty Para, Batanagar, South 24 Parganas,
Kolkta, Pin: 700 140, West Bengal
bitu130506@yahoo.com
sabita.kundu@biemsindia.org

Abstract: Guidelines of standard is the route of executing and developing for entire library, discussed by IFLA, UNESCO and ILA. For developing country it is deferred from developed and under develop nation. Indian Statistical Institute (ISI) Library- one of the Living Learning Libraries is research and statistical field. In beginning it was the brain child of Prasanta Chandra Mahalanabis. Now its employ standardized procedures, as far as possible, based on previous records. The nature of Standards should indicate the extent of academic and library in-depth study to which professional members of staff required in the library, and the part is involved in the educational staff should play in other work, programmes of the institution, in e.g. research and education. ISI library started more than one great project over and done with preserving past for the future under the supervision of Dr. Nibadita Gungaly , Deputy Librarian. Apart from ISI library provides information through Major Socioeconomic Databases. Remote Access, Internet through Virtual Private Network (VPN).

Keywords: Standard of entire library, ISI Library, In-depth study, Preserving past for the future, Major Socioeconomic Databases, Remote Access and VPN.

1. Introduction

Maintaining Standardization of document is an irregular idea which interrelated with all related part of organization. The Guidelines of standard for library provide advice and guidance to library and information managers on how to plan, build and maintain public libraries to a high quality. It is the route of executing and developing technical standards based on the consent of different parties that include firms, users, interest groups, standards organizations. Standardization can help to make best use of compatibility, interoperability, repeatability; security, and so on.

2. Standardization recommended by IFLA

In 1973 International Federation of Library Associations (IFLA) has given attention to the application of the standards to developing countries. It may be useful to indicate some of the guidance given to developing countries or which is particularly applicable to them. In some countries library services have been provided on a national basis. This method may be especially appropriate in a developing country where a large managerial unit is mainly important, if limited resources are to be used to the greatest extension.[1]

In 1957 the Indian University Grants Commission appointed a committee, under the Chairmanship of Dr S. R. Ranganathan. The document containing the report, published in 1965, University Grants Commission (Report of the Library Committee, University and College Libraries, New Delhi, 1965). Quantitative standards were given for library Finance, Book section, periodical publications; documentation, technical, reference, circulation, maintenance, administration Inter-library loan, and staff in respect of which it was claimed the administration of the universities needed to adopt a more informed attitude. [2]

3. Standardization recommended by UNESCO

Standards should prescribe the regular collection of selected statistics, on a common basis as recommended by UNESCO, so that the extent to which the service measures up to recommended national or international standards can be established, the use made of the library studied, and effective comparisons made with other libraries. General Standards should indicate: That all libraries should be housed in premises suitable for the efficient performance of the library's various functions. That new library premises should be planned on a functional basis (aesthetic and other considerations being secondary), should be flexible and, while being built to satisfy foreseeable needs, should be capable of extension.

This applies particularly in some developing countries. It will usually be necessary, however, to supplement the country's own output by acquiring books published in other countries and in other languages, particularly in technical subjects. [2]

4. Standardization recommended by ALA

The document was first published by the ALA Standards Committee in 1983, after some portions had been approved by Council at the 1982 Annual Conference. It has been revised several times, most recently by the Standards Review Committee in

2001. The current version is the same as the 2001 version, except that references to the SRC have been removed. SRC was discontinued by Council at the 2003 Annual Conference. At the same time, Council ruled that the Manual should continue. It is accessible on the ALA website (see the Section on Professional Tools, Subsection "Standards and Guidelines"). As part of the annual updating of the ALA Handbook of Organization, the ALA Associate Director for Communications and Marketing will contact the chairs of standards committees in the divisions to remind them about the manual and to ask if any part of it needs revision. The famous library of Indian Statistical Institute (ISI) has maintained standard. From the beginning (1931- till date) ISI library serves researcher, academician, economist, planner and every corner of society. [3]

5. ISI library, brain child of Prasanta Chandra Mahalanabis

As past history of ISI library, we may say that it was the brain child of P C Mahalanabis

Professor Mahalanobis was involved in its growth and development science its beginning. He initiated statistically research in the early twenties in the Presidency College, Calcutta which later developed into the Statistical Laboratory and finally led to the establishment of India Statistical Institute in 1931. The Library was located in small room adjacent to professor Mahalanobis room at the Baker Laboratory of the Physics Department, Presidency College, Calcutta. During the foundational years, the library's collection mainly grew though gifts, donations and exchange of publication with Sankhya: Indian journal of statistics. Early contact with governments, learned societies, research institutions throughout the globe enabled the library to develop a rich and wide ranging collection of books, scientific journals, survey reports, data books in almost all the major languages of the world. Now this library is regulator of statistical world on the basis on previous document which was preserved by library.[4]

6. Standardization of ISI

Libraries should, as far as possible, employ standardized procedures, e.g. in cataloguing and classification. Standards should be such as to permit input to and access to the main international mechanized bibliographical information services. Based on records for (a) books in open shelving and limited access or closed book stacks, and for storage of other material; (b) readers in reference libraries, reading rooms and other parts of the library, allowing to type of place (seats only, large or small tables, carrels, etc.); (c) staff and work methods; (d) amenities (e.g.

lavatories, refreshment facilities) and services (e.g. air-conditioning); (e) other library purposes, such as exhibitions, lectures, meetings, classes, staff training; (f) provision for acceptable movement of users and staff during periods of maximum use. [5]

7. Model Standards of ISI for Library Service

ISI Library is an Academic Library that provides research based information, to researcher scholar, economist and planner. It is delivering, in co-operation with other libraries, since library and information services for the benefit of the students and staff as an essential part of academy; it is facilities for study and research. It should also make their facilities available, under suitable conditions, to other serious scholars and research workers. The library should be administered by a librarian directly responsible for library service. The library should be under the decision-making control of a librarian of high qualifications and suitable experience. Services Standards should indicate that: The library should provide:

(a) Reference collection of the nation's literature complete for current publications through legal deposit and as complete as possible for earlier literature;

(b) Major reference collection of materials in Indian and foreign languages;

(c) Preserving document in up-to-date technology

The lending (apart from specially created national lending libraries) part of ISI library should be controlled, no material provided under legal deposit being lent, except duplicate copies (which was delivered to relevant colleges). The library should issue publications relating to its work and library services generally. 6 http://www.isical.ac.in/~library/#

8. ISI provide independent study by printed and non-print material

Standards would be required indicating the nature of the library's services and how far the library should directly assist other libraries, with the supply of books and other material. A library committee with advisory functions only should be appointed consisting of representatives of the teaching staff and students. The library should co-operate fully with other university or college libraries and with the national and other libraries so as to secure the maximum concentration of bibliographical and other resources. The library should provide accommodation for independent study by students and research workers, together with the printed

and other material required for their work and cultural development. It should provide instruction in the use of the facilities offered by the library. It should provide for the library needs of academic staff and other appropriate persons, including industrial firms and organizations and members of professional groups. It should provide a central catalogue of library holdings and central acquisitions and processing, and library materials should be readily available, with as much open access as possible. The library should provide access to materials in all forms, books, manuscripts, pamphlets, periodicals, newspapers, music, maps, prints, engravings, as well as other means of communication, such as micro-film, gramophone records, tapes, computerized data, bibliographical aids, such as lists of current and older publications, catalogues, indexes, etc.

9. ISI furnishings attractive and comfortable for users in-depth study

The nature Standards should indicate the extent of academic and library in-depth study to which professional members of staff required in the library, and the part should be involved in the educational staff should play in other work, programmes of the institution, in e.g. research and education. Use of the library and in access to bibliographical and other information, and in other ways. The importance of making the library buildings and furnishings attractive to and comfortable for users, and of giving attention to such features as good lighting, temperature, ventilation and noise control. Ways of measuring areas of accommodation required for different purposes, based on figures for: (a) books in open shelving and limited access or closed book stacks, and for storage of other material; (b) readers in reference libraries, reading rooms and other parts of the library, (c) staff and work processes; (d) amenities (e.g. toilets, refreshment facilities) and services (e.g. air-conditioning); (e) other library purposes, such as exhibitions, lectures, meetings, classes, staff training; (f) provision for adequate movement of users and staff during periods of maximum use. Each country-or group of countries-will need to work out building standards according to the particular local circumstances which are likely to affect the total amount of space and proportions required for each purpose. [6]

10. Preserving past for the future

ISI library started a project under the supervision of Dr. Nibadita Gungaly , Deputy Librarian (MA, M.Lib and Doctorate in sociology. E-Mail nibeditagaguly56@gmail. com) who initiated to build up historical document preserved in microfilm and microfiche in a Unit of ISI Library.

a) She started it in 2006 and published.

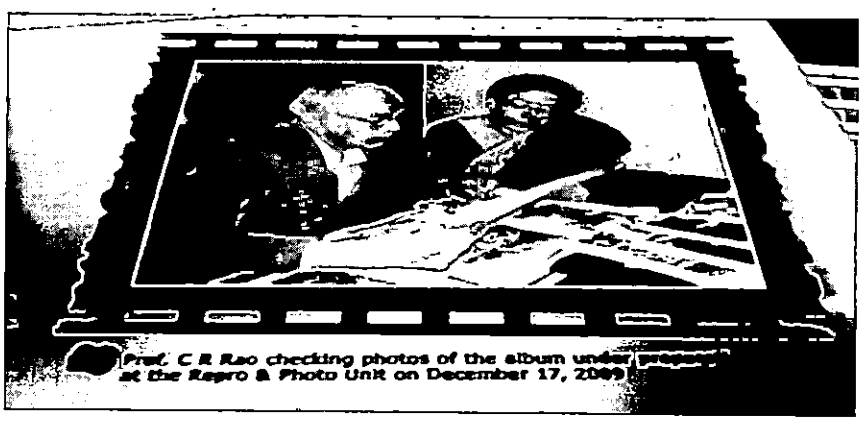
When she first took additional responsibility along with other jobs and took as in-charge of the Reprography & photography unit of the Library, she edited a photo document on eminent Professor C.R Rao, world famous statistician. Professor Rao is very enthusiastic. He is near about 95 years old now. He encouraged Dr. Nibedita. Ganguly to select the relevant document from huge micro film gathering and published an Album on Dr. Professor C.R. Rao. She never violated the copy right norms. Relevant documents are attached in this paper. [9]



Prof. C R Rao looking at the photographs exhibited at the Repro & Photo Unit on December 17, 2009



Prof. C R Rao looking at negatives at Repro & Photo Unit on January



Prof. C R Rao checking photos of the album under preparation at the Repro & Photo Unit on December 17, 2009

b) She also supervised a long project which also started in 2015. The project is edited by her. She tried to build up a history of wealth of ISI and intended to deliver it web technology and serve it in hard format to renowned academic library and others.

C) ISI library has the archive of personal letters of P.C Mahalanabish with famous personalities of contemporary time around the world. A project taken by ISI library to preserve these letters related to Royal Society. All documents are being processed in D-Space under her guidance to be kept in Archives.

11. The document of past should be presented for future

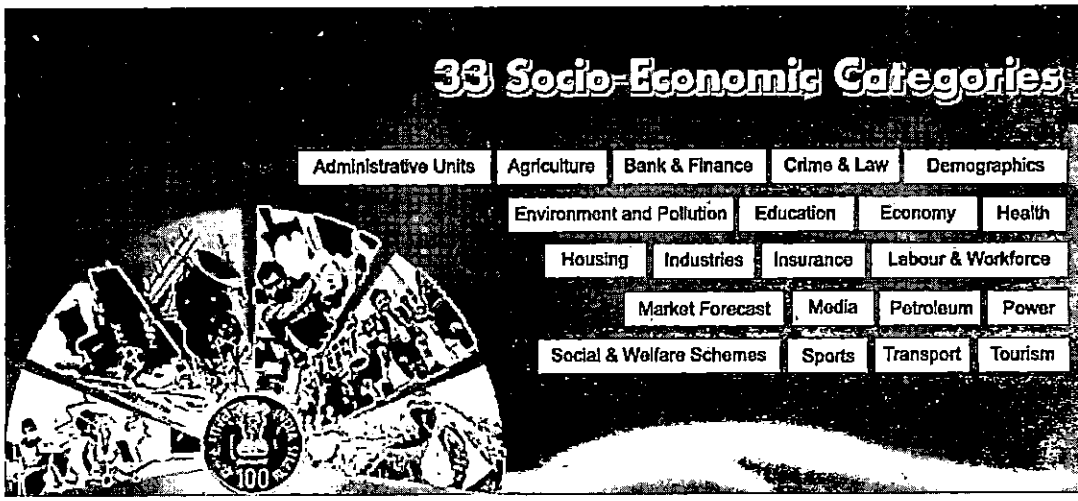
Now all institute run by small number of employees (basically in Government concern) as the vacant post are not filled after retirement of libraries personnel, but the eminent and old libraries have huge number documents due to information explosion. Every single document/ information may be required at any time by any person. If the documents are not preserved properly all become value less. If all are not preserved through proper technology and the treasurable document managed by less number of staff, the historical value is diminished.[6]

12. Others Activities of ISI Library on the basis of own past document at present.

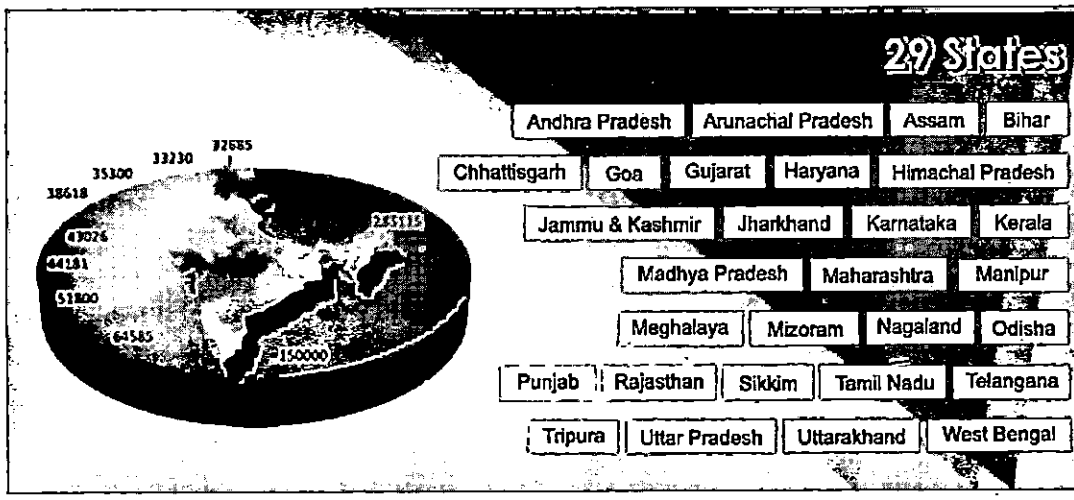
ISI library serve online based service which was primary document of library from beginning. They preserving past for the future and render

13. Major Socioeconomic Databases (Starting year from approx. 2002)

i) State of India-CMIE is a wide-ranging assembly of state-level statistics. The data is sourced from each of the 23 major states and 12 minor states or union territories for economic & statistical research.



ii) Indiastat.com provides secondary level socio-economic statistical data about India and its states, Region and Sector on more than 35 variables from 2004-5 for economic & statistical research.[7]

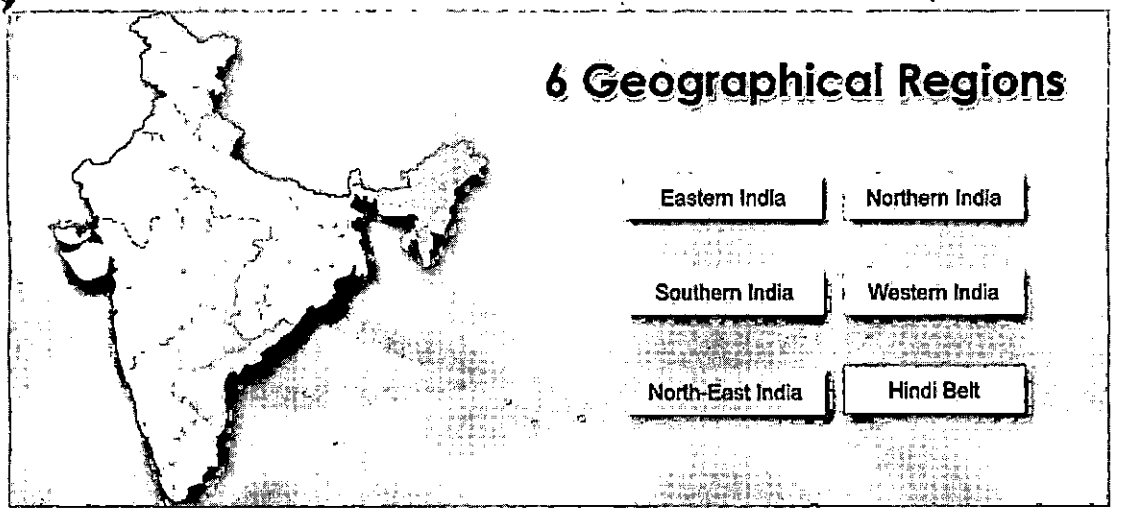


iii) CEIC Databases is delivering a wide range of macroeconomic and industry-specific time series data for India. The database covers over 163,000 time series with historical data from as early as 1951 and offers a wide range of dataset frequencies, from daily to annual mainly used by economist. [7]

14. Remote Access (Starting year 2014-15 and continue)

Home/off-campus access means that you can access the library's electronic journals, rare book converts into e-books, and makes databases, etc. from any

computer - whether are at home or abroad. As an employee, full time student, research scholar of the Indian Statistical Institute, can get home/off-campus access to the electronic resources the Central Library, Indian Statistical Institute subscribes to.[8]



15. Internet through Virtual Private Network (VPN).

Starting year of VPN is 2000 Central Library is accessible via VPN from other Centres.

16. Data Service

ISI provides data to user in multiple forms and multiple ways.

17. Centre for Research in Micro Census Data

Central Library of Indian Statistical Institute Library, Documentation and Information Science Division are always ready to help user as per their requirement about research based works.

18. Conclusion

In short we may say standards should: Stress the vital importance of staff adequate in numbers and quality from the highest professional to the lowest clerical and manual worker, since without them the most comprehensive collection of

library materials is almost useless. Define the minimum personal, educational, professional and other qualifications necessary for work at various levels in the particular type of library, which consists basically of successful selection and organization of materials and promotion of their use. Standards for library service: an international survey State that professional staff should, except in the smallest service points be available to provide professional services at all hours when libraries are open or when such services are required.

Reference:

1. Standards (2017, September) Retrieved from https://www.ifla.org/node/8750
2. Wthers F. N. (1974). *Standards for library service: an international survey* Paris : The UNECCO Press 1974 Retrieved on 2017, September from http://unesdoc.unesco.org/images/0001/000113/011390eo.pdf.
3. Standards manual. (2017, September) *guidelines/standards manual* Retrieved from http://www.ala.org/tools/guidelines/standardsmanual/manual, Proceeding of Indian Statistical Institute: Reminiscence of Platinum jubilees 2006-2007 publish by Kolkata: ISI. Pg 70.
4. Standards (2017, September) http://unesdoc.unesco.org/images/0001/000113/011390eo.pdf on 12/09/17]
5. ISI Library ((2017, August)). Retrieved from https://en.wikipedia.org/wiki/Indian_Statistical_Institute
6. Information data. (2017, August) *isical.ac.in/~library.* Retrieved from http://www.isical.ac.in/~library/census.php
7. ISI Calcutta (2017, September) ISI Calcutta Retrieved from http://www.isical.ac.in/~library/data.php
8. SILHOUETTES OF MEMORIES: A PICTORIAL ALBUM ON C. R. RAO AT INDIAN STATISTICAL INSTITUTE . Calcutta: Indian Statistical Institute. January 2010.

Authors Profile



Sabita Kundu is the librarian of Techno India Batanagar. She is now working as a college librarian. She served more than 20 years in library and information field. She has Masters Degrees in Bengali and Library and Information Science. She has life Membership of ILA, IASLIC and BLA. She has attended more than 30 national and international conferences and workshops and has written over 20 articles in national and international journals and books.

'Information Literacy' Need Of Pg Students: A Comparative Study Of Kurukshetra And Maharishi Dayanand University Of Haryana

Naveen Mehla

Research scholar Department of Library & Information science
Kurukshetra University Kurukshetra
Email: mehla29dec@gmail.com

Abstract: Curious nature of human beings makes them explore information now and then regarding innumerable topics. This quest is satiated trough e-resources as information on each and every aspect is easily accessible to all. But here a strange situation is confronted by people i.e. smart access to required information and this condition aptly termed as Information literary. It enables people to locate and use information effectively available in different formats and unfiltered form. This paper aims a comparative study of two universities considering varied types of information literacy and thus finding out where it is in more effective use. Study empirical in nature makes use of 200 questionnaires, 100 in each university- 55% of male and 45% female respondents participated. Outcome shows that 22.72% of respondents from MDU are using information for purpose of assignment and which is double of KUK- as it is 11.9% here. It's a vast study, data presenting in different 11 tables, study reveals need of library orientation program in KUK because only 9.09% and 25% in respondents from MDU learn with the help of library orientation program.

Keywords: Information literacy, media, digital, network

1. Introduction:

Information literacy includes the ability of critical thinking, evaluating, analyzing and modifying the accessed information. Apart from formal learning, information literacy also makes the handling of the situation flexible enough where information is in different formats and unfiltered form. Information literacy has become a survival skill in today's life. Without proper information literacy skill, it's difficult to locate, evaluate and use effectively the information that we need.

Present age is the age of information and communication technology. In this 21st century, due to advancement in technology information is scattered in different formats and ways. An individual faces many problems in finding, filtering and locating the needed information. That's how the concept of information literacy came into being.

Information literacy has many types such as visual literacy, media literacy, computer literacy, digital literacy, library literacy and network literacy. (Eisenberg, Lowe, & Spitzer, 2004)

2. Review of the literature:

Kovalik, Yutzey and Piazza (2012) the study based on high school students. The study found that the students are aware that the research takes time and need multiple resources. The students are able to use library resources, locate and use information. They know the importance of resources and reliable information related to their research projects, assignments and course work.

Devender Singh and Joshi (2013) the study found that satisfactory significant differences are there the first year and second year students. It also suggests that a single library and information service course may not be enough in itself to inculcate IL skills among the students.

Verma, Sudhir kumar and Boriwal (2016) the study found that majority of faculty members believe that information literacy will be very important to achieve the aims of digital India.

Chaudhry and Al-Mahmud (2014) studied information management behavior of Kuwaiti engineers. It has been found that websites are most used sources to collect work related information. Database are also frequently searched to find engineering information. Result also found that respondents are collecting and receiving information from different sources including websites, institutional repositories, colleagues and professional forums and e-mail attachment.

Maharana and Mishra (2007) Conducted a study among the teachers of different Post Graduate departments of Sambalpur University. It shows that there is an educational imbalance between the rapidly developing technologies and information available to the users. Majority of respondents (98.57%) expressed their need for electronic information. 82.86% respondents indicated that they use e-journal. Apart from this, majority of respondents use e- information to update their knowledge in their subject area.

3. Definition:

According to American Library Association presidential committee on information literacy, "to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information" (ALA 1989).

Information literacy is the ability to effectively identify access, evaluate and make use of information in its various formats, and to choose the appropriate medium for communication. It also encompasses knowledge and attitudes

related to the ethical and social issues surrounding information and information technology. (California academic and research libraries task force 1997)

4. Statement of the problem:

Today information literacy including so many components as computer literacy, media literacy and government beneficial literacy. In the absence of proper information literacy programs in colleges and universities, the students are generally not very efficient in use of information resources.

5. Objectives

- To know the awareness of information literacy by PG students.
- To check the information literacy skills of the respondents.
- To know how much they are aware about search strategies.
- To determine the awareness of using information resources and awareness of internet related resources.
- To know the suggestions of respondents for improving the information literacy skills of PG students.

6. Methodology

The study was empirical in nature as it was concerned with information literacy needs of the PG students, their information literacy skill and how much these students are information literate in MDU and KUK universities of Haryana. Total 200 questionnaire were distributed in two universities of Haryana among the PG students of KUK and MDU, 100 questionnaire for each University and response obtained of 88 (88%) from KUK and 84 (84%) from MDU University. In this survey questionnaire was open and closed ended. Finally, the analyzed data has been presented in the form of tables. There are 110 (55%) of respondent male and 90 (45%) female. In the study 89 (44.5%) respondents age between 21-22 years followed by 60 (30%) between 23-24 years, 31(15.5%) of respondents age up to 20 years and 20 (10%) of respondents age up to 24 years.

7. Data interpretation

Table.1 Purpose of Information need:

University	Researcher	Assignment	Project work	Update knowledge	Examination	Total
KUK	6 (6.81%)	20 (22.72%)	10 (11.36%)	10 (11.36%)	42 (47.72%)	88
MDU	5 (5.95%)	10 (11.90%)	8 (9.52%)	12 (14.28%)	49 (58.33%)	84
Total	11 (6.39%)	30 (17.44%)	18 (10.46%)	22 (12.79%)	91 (52.90%)	172

The response shows that the half of respondents in KUK University 49 (58.33%) and 42 (47.72%) from MDU University needed information for examination purpose. The response shows that the purpose of information need 10 (11.90%) of respondents of MDU and 20 (22.72%) of KUK is assignment. Half of respondents (52.90%) from both Universities information need for the purpose of examination.

Table.2 Mostly used Format of Information

University	Print format	Electronic format	Both	Total
KUK	17 (19.31%)	24(27.27%)	47(53.40%)	88
MDU	24 (28.57%)	12 (14.28%)	48 (57.14%)	84
Total	41 (23.83%)	36 (20.93%)	95 (55.23%)	172

Table2 shows that half of respondents use both format of information in MDU (57.14%) and (53.40%). 28.57% respondents of MDU preferred information in print format, whereas 27.27% of KUK preferred electronic format.

Table.3 Criteria for Inclusion of Documents in Research/Periodicals Database

University	Fond of the internet	Not fond of the internet	Owned by your library	Relevant subject matter	Total
KUK	41 (46.59%)	8 (17.04%)	24(21.33%)	15(30.66%)	88
MDU	38 (45.23%)	7 (8.33%)	28 (33.33%)	11 (13.09%)	84
Total	79 (45.93%)	15 (8.72%)	52 (30.23%)	26 (15.11%)	172

The respondents were asked about the criteria for inclusion of items in research/periodical databases. Table-3 shows that the maximum number of

respondents in KUK 46.59% and MDU 45.23% state that research or periodical databases are designed to include items that are found on internet. Only 15 (8.72%) respondents are not fond of using internet for required information, in both universities.

Table.4 Awareness of Boolean Operators

University	Character and values and moral	Character or values or moral	Character, values and moral	Character, values or moral	Total
KUK	39 (44.31%)	12 (13.63%)	26 (29.54%)	11 (12.5%)	88
MDU	35 (41.66%)	30 (35.71%)	12 (14.28%)	7 (8.33%)	84
Total	74 (43.02%)	42 (24.41%)	38 (22.09%)	18 (10.46%)	172

In order to see whether the respondents understand the use of Boolean operators, they were asked to prepare a search statement using Boolean operators. They were given the situation, which required searching a database using synonymous terms. Table 4 shows that only 24.41% respondents including 13.63% of KUK ticked the correct answer i.e. 'character or values or moral' 43.02% respondents which includes 41.66% from MDU and 44.31% from MDU preferred use of operators 'And' instead of 'Or'.

Table.5 Awareness of Citation

University	A Book	A chapter in a book	A journal article	A conference	Total
KUK	30 (34.09%)	26 (29.54%)	21 (23.86%)	11 (12.5%)	88
MDU	25 (29.76%)	35 (41.66%)	17 (20.23%)	7 (8.33%)	84
Total	55 (31.97%)	61 (35.46%)	38 (22.9%)	18 (10.46%)	172

To check the awareness about citation, a citation statement was given to the respondents and they were asked to identify the type of document of the given citation. Table 5 shows that there are more respondents from MDU 41.66% as compared to KUK 29.54% who were aware of the citation, i.e. they ticked the right option (a chapter in a book).

Table.6 Awareness of Website URLs

University	Commercial	Government	Organization	College University	Total
KUK	19 (21.59%)	25 (28.40%)	20 (22.72%)	24 (27.27%)	88

MDU	15 (17.85%)	21 (25%)	16 (19.04%)	32 (38.09%)	84
Total	34 (19.76%)	46 (26.74%)	36 (20.93%)	56 (32.55%)	172

In order to see whether respondents were aware about the website URLs, they were given the URL of a document and they were required to tick the appropriate owner of the website. Table 6 shows that there are more respondents from MDU (38.09%) are aware of college and university website in compare of KUK (27.27%). There is only little difference in awareness of commercial, government and organization websites in both university.

Table.7 Choice of Information Source for Historical Background

University	A latest book on the topic	A journal article	A general article	An encyclopedia	Total
KUK	45 (51.13%)	21 (23.86%)	12 (13.63%)	10 (11.36%)	88
MDU	44 (52.38%)	20 (23.80%)	18 (9.52%)	12 (14.28%)	84
Total	89 (51.74%)	41 (23.83%)	20 (11.62%)	22 (12.79%)	172

The respondents were asked what would be their first choice to consult for historical background of a new topic. Table7 shows that half of respondents (51.74%) choose information source for historical background is a latest book on the topic. Study shows that 9.52% from MDU and 13.63% respondents from KUK choose a general article for historical background.

Table.8 Access Tool of Searching a Book in the Library

University	Subject	Call number	Title	Author	Total
KUK	42 (47.72%)	8 (9.09%)	18 (20.45%)	20 (22.72%)	88
MDU	29 (34.52%)	20 (23.80%)	21 (25%)	14 (16.66%)	84
Total	71 (41.27%)	28 (16.27%)	39 (22.67%)	34 (19.76%)	172

Table-8 shows that subject (41.27%) is first priority for access tool of searching a book in library. In the study only (9.09%) respondents access a resource through call number in KUK and (23.80%) in MDU. 22.72% of respondents access through author in KUK and only 16.66% in MDU.

Table-9 Methods of Searching Information on Internet

University	Keywords	Boolean operators	Truncation	Field search	Total
KUK	60 (68.18%)	16 (18.18%)	4 (4.54%)	8 (9.09%)	88

MDU	50 (59.52%)	14 (16.66%)	5 (5.95%)	15 (17.85%)	84
Total	110 (63.95%)	30 (17.44%)	9 (5.23%)	23 (18.60%)	172

The respondents were asked the method of searching information on internet. Table-9 shows that majority of respondents in both the universities- is KUK (68.18%) and MDU (63.95%) used keywords for searching information on internet. 16.66% respondents of MDU preferred Boolean operators, whereas only 09.09% respondents of KUK preferred field search. Thus, the majority of respondents (63.95%) would prefer keywords for searching information on internet.

Table.10 Preferred Search Engine

University	Google	Ultra vista	Yahoo	Others	Total
KUK	72 (81.81%)	2 (2.27%)	12 (13.63%)	2 (2.27%)	88
MDU	70 (83.33%)	2 (2.38%)	11 (13.09%)	1(1.19%)	84
Total	142 (82.55%)	4 (2.32%)	23 (13.37%)	3 (1.74%)	172

Table-10 shows that google is first choice for search engine in KUK 81.81% and 83.33% in MDU followed by Yahoo 13.37%, ultra vista 2.32% and only 1.74% of respondents preferred other search engine by both universities.

Table.11 Awareness Program by University

University	Seminar/ conference conduct by university library	Library orientation tour	Information by reference librarian	Tutorial on library website	Instruction for use of e-resources by teacher	Total
KUK	31 (35.22%)	8 (09.09%)	8 (9.09%)	18 (20.45%)	25 (28.40%)	88
MDU	28 (33.33%)	21 (25%)	12 (14.28%)	13 (15.47%)	10 (11.90%)	84
Total	59 (34.30%)	29 (16.86%)	20 (11.62%)	31 (18.02%)	35 (20.34%)	172

Table-11 shows that 34.30% of respondents aware of IL through seminar/ conference conducted by university. 09.09% respondents of KUK got awareness through library orientation tour and 25% of MDU. 28.40% respondents of KUK aware through instruction provided by teachers and only 11.90% of MDU.

8. Conclusion

Today information explosion has emerged as a big problem. Information is scattered in many formats. Therefore, we need information literacy- to provide the right information to the right reader in right time. In a study based on this

issue there are 55% of respondents are male and 45% female. In this study 44.5% of respondents, age is 21-22 year. The study found that most of respondents use the information for the purpose of examination in both the universities. There are 22.72% of respondents from MDU use information for the purpose of assignment its double of KUK (11.90%). MDU preferred the print format of resources, whereas KUK respondents preferred electronic format of resources. Half of respondents in both universities succeeded in finding their information through internet. In the study 34.09% respondents of KUK preferred the citation through a book, whereas MDU 41.66% of respondents preferred a chapter in a book for citation. Most of respondents are aware with the college and university websites. Subject is the first choice of respondents for searching a document in the library. In MDU 23.80% respondents preferred call number for searching a document in the library whereas only 09.09% in KUK. Most of respondents use keywords for searching the information on internet and few respondents of KUK use field search. Google search engine is the first choice by researchers of both universities. The study found that there is need of library orientation program in KUK because only 09.09% of respondents learn with the help of library orientation program in KUK whereas 25% in MDU. Teachers in KUK 28.40% lead the program of providing the instructions for use of e-resources and only 11.90% in MDU.

Reference

1. Verma, R., Kumar, S., & Boriwal, C. (2016). Information literacy competencies among faculty of medical colleges in Madhya Pradesh (India): A Study and a Plan. In P. K. Jain, H. Kretschmer, D. C. Kar, P. Babbar, & Akash, *Bibliometric Data and Impact Managment in Information Science* (pp. 362-372). Delhi: Bookwell.
2. Devendra Singh, & Joshi, M. K. (2013). Information literacy competency of post graduate students at Haryana Agricultural University and impact of instruction initiatives: A pilot survey. *Emerald*, 453-473.
3. Ukpebor, C. O., & Emojorho, D. (2012). Information literacy skills: A Survey of the Transistion of Students from Secondary to University Education in Edo State, Nigeria. *Library Philosophy and Practice(e-journal)*, 824.
4. Kovalik, C., Yutzey, S., & Piazza, L. (2012). Information Literacy and High School Seniors: Perceptions of the Research Process. *Research Jorunal of*

the American Associatio of School Librarians, 1-26.

5. Naveed, Q., & Sharif, A. (2015). Assessing the needs and measuring the impact of the imformaion literacy sessions at the Aga Khan University's Instutute for Educational Development. *Asian Review of Social Sciences*, 20-29.
6. Pinto, M. (2012). Information literacy perceptions and behaviour among history students. *Emerald*, 304-327.
7. Eisenberg, M. B., Lowe, C. A., & Spitzer, K. L. (2004). *Information Literacy: Essential Skills for the Information Age.* London: Libraries Unlimited.
8. Kaur, P., Sohal , M. K., & Walia, P. (2009). Information Literacy Curriculum for Undergraduate Students. 556-560.
9. Kumar, R. B. (2016). User Education in Libraries. *International Journal of Libraries and Information Scince*, 01-03.
10. Lau, J. (2006). *Guidelines on Information Literacy for Lifelong Learning.* Mexico: IFLA.
11. Maharana, B., & Mishra, C. (2007). A Survey of Digital Information Literacy of Faculty at Sambalpur University. *Library Philosophy and Practice(e-journal)*, 1-9.
12. Chaudhry, A. S., & Al-Mahmud, S. (2015). Information Literacy at Work: A study on information management behaviour of Kuwaiti engineers. *Emerald*, 760-772.

Introduction to College Libraries of Ukhrul District, Manipur

Augustine Zimik

Department of Library & Information Science,
Tripura University, Suryamaninagar, Tripura, India
(augustinezimik@tripurauniv.in)

Abstract: The importance of Library is often being overlooked. At this age of google and social media, people tend to take library for granted. Unkhrul is a Hill District of Manipur in the Northeast region of India is no exception despite the poor internet penetration. The district is inhabited by the Tangkhul Naga. There are 221 villages and a population of 204,230 (according to 2001 census) speaking over 200 different languages of their own.

There are three colleges in the District, a survey method was employed to study the status of their Libraries by using interview and observation technique.

The study revealed the Library functioning and Services provided to the users are way behind the expected standard.

Financial crunch was the major problems cited by the Librarians of the institutions. However, the lack of awareness on the part of students regarding their rights to the library and also the ignorance of the parents may be other factors affecting the Libraries.

Keywords: Academic Library, College Library, Status of Library, Ukhrul District, North-east-India

1. INTRODUCTION

Development has never been in unison in any given country or amongst countries. Whether it be; technology, education, infrastructure, economy, etc. This unparalleled development may be attributed to various factors such as geographical location, topography, climate, religion, politics, and so on.

In India, geographical location seems to have a huge impact on the development of a particular region. Consequently, the parity between two geographical areas of India in terms of development is two huge that social stratification is a necessary evil. Moreover, Reservation, caste system and ultimately racism arises from the gap. Fair competition till today, cannot be a practical concept in India under the prevailing socio-economic conditions.

Nevertheless, education can play the deciding role to bring equality in the real

sense. Therefore the government of India is addressing this issue by implementing free education for every child under 14 years of age, scholarship for poor etc.

The government, both state, and Central have a number of educational institutions that provide free education. The library, being the heart of every educational institution, has a direct role in bridging the gap. If every student gets the books he/she wants (every reader his/her book) and is given equal opportunity to the quality library, the difference between poor and rich may be diminished. Thereby, making an impact on the students in particular and society in general.

The overall aim of a Library, regardless of its location, size or parent organization is to provide organized library services to meet the information needs of its clientele in their activities relating to education, research, management and any other specialized services (Khatri 2016). A good Library can help the poor rural students who cannot afford to buy books, inculcate self-education and life-long learning.

The importance of Library is often being overlooked. At this age of google and social media, people tend to take library for granted. It appears that despite the innovative services the information organizations offer, the incorporation of technological advances and the new roles the information professionals have assumed, the misconceptions of the librarian's work persist (Vassilakaki and Moniarou-Papaconstantinou, 2014).

However, the library cannot be considered obsolete at least in India till date. Due to the facts that 1.) Everyone cannot afford to have access to internet 2.) The internet penetration in India is only 28% according to TRAI (September 2016) which means over 72% are not connected to the internet. 3.) The information is every growing, whereby authentication of information sources become a Herculean task.

Critic surmised that the role of the librarian would become peripheral and that user would be able to able to access information at the touch of a keypad. However, experience has shown that the librarian is central to the provision of effective service(Salmon & Smart, 2017)

In fact, the need for a library is increasing as the universe of knowledge is growing bigger. Everyone needs a library for fast access to authentic information. Some student who cannot afford a smartphone or computer relies solely on the library. This statement is more relevant in the context of the rural population.

The American Baptist missionaries were the first to spread modern education in English in the hills (including Ukhrul District), using the Roman script. William

Pettigrew brought education with his missionary activities to Ukhrul. He started a school at Ukhrul on the 10th February 1897("Educational Profile of Manipur," 2005). Therefore, the formal education in the area is comparatively younger than most of mainland India. So also the Library as a concept is not understood so well even today. Which adversely affect the library system in the district.

This paper is an attempt to explore or rather expose the prevailing condition of the Libraries in Ukhrul District, Manipur. Which is situated in the NER of India. The difference between college Libraries in rural NER and Mainland India may further be investigated.

2. METHODOLOGY

Manipur state is a border state in the North Eastern corner of India. Unkhrul is a hill district of Manipur in the Northeast region of India. The district is inhabited by the Tangkhul Nagas. There are 221 villages and a population of 204,230 (according to 2001 census) speaking over 200 different languages of their own.

The Tangkhul Nagas of Manipur are the largest community after the majority Meitei community in Manipur. Ukhrul district is the home of the Tangkhuls since time immemorial. The Tangkhuls predominantly inhabited the whole district of Ukhrul measuring 4,544 sq. km. Jessami, Wahong, Poi, Tusom, Chalao, and Kharasom are the northern most villages-boundary with the Nagaland state. In the east, Chamu, Khayang, Chatric Khullen, Kachouphung, Chahong Khunou, Kongkanthana and Kangpat Khullen villages bordering Sagaing Division of Myanmar. The Southern-most villages are Nambashi Khullen, Lairam Khullen bordering Chandel District and in the west Kachai, Champhung, Sana Keithei, Hongman, Mapao, etc., border Senapati and Imphal East (Shimrei & Phil, 2015).

There are only four colleges (one defunct) in the district. Each of the colleges at least has their own library and Librarian. The college Librarians were interviewed individually to ascertain the status and condition of their library. Examination of the Libraries was done based on the guidelines given by NAAC (National Assessment and Accreditation Council) on Quality indicators in Library and Information Services: Affiliated/Constituent Colleges. The parameters used to study the three college Libraries are based on a recommendation made by the council.

3. SIGNIFICANCE OF THE STUDY

While the Libraries in the cities of India talks about latest Information and Communication Technologies available for libraries today. The rural libraries

(academic or public) Ukhrul District of Manipur are struggling to get classification system implement in their respective Library.

Library in this part of the country has not seen the light of advancement in Library system that we can see the other parts of the country. The need for change struck the mind of the author.

As long as the knowledge of the author is concerned this paper may be the first literature on Library Science from the district. Literature related to examination of Libraries in the said district has not surfaced on the public domain. That in itself is a clear indication of the lack of awareness of library as a concept or as a discipline in the said district.

The Libraries in Ukhrul District need to be exposed to the world by doing a survey on the existing condition. By means of which, I hope to get some attention from Library Associations and passionate Library Professionals who are kin to bring about change in every corner of the country. Thereby, a dawn of library movement may be initiated in the said district.

4. OBJECTIVES OF THE STUDY

To examine the current status of college libraries in the district.

And to study the factors affecting the standard of libraries in the district

To explore the scope for upgrading the status of college libraries in the district

5. BRIEF PROFILE OF THE COLLEGES

5.1 PETTIGREW COLLEGE

Pettigrew College was established in the year 1965. It is the oldest college in the District. The college was founded by Yangkahao Pheiray consequently he was the Principal of the college for 20 years (1965-1985). The college is funded by the Government of Manipur. And affiliated to Manipur University. The college is housed in the 23.5-acre campus. It is situated in the Ukhrul District Head Quarter. With a total of 12 departments and a strength of 36 teaching faculties. There are approximately 600 students in the college pursuing Bachelor's Degree in Arts and

Sciences.

With the inception of the College Library was established. Under the leadership of the principal, the college Library functioned efficiently with an active Library Committee in place for 20 years. After the college experienced degrading Library system. There was four library staff, of which 3 retired and never replaced.

The college Library is housed in the single room. Where a librarian in his early 60s is looking after the library. He obtained his Bachelor's degree (B.L.I.S.) from Shivaji University, Calcutta in the year 1985. He singles handily manage the duties and responsibilities of providing Library service to more than 400 students in the college.

6. SENTINEL COLLEGE

Sentinel College was founded 1996. It is a privately supported, secular, non-political, co-education, and the non-residential institution of Science, Arts, and commerce. The college was founded by eight alumni of Delhi University. Since inception, the college despite impoverished set-up has been excelling in producing students; securing letter mark and toppers. Currently, there are 500 (approx.) students enrolled in the college including higher secondary students.

The college has a publication called "sentinel today" which is published quarterly. It serves as the mouth piece and custodian of the daily event of the institution. Also, facilitate communication within the college.

The college provides a modest Library taken care a Librarian and staff. The library remains open on all working days (i.e. Monday to Friday) from 10:00 am to 4:00 pm. The library is funded by the institution itself. The library is being housed in a single room.

The Librarian earned a master degree (MLIS) from North Eastern Hill University, in the year 2007. She has working experience of 3 years.

7. SAINT JOSEPH COLLEGE

St Joseph College is the first Catholic college in Ukhrul district and was inaugurated on 1st May 2015. The entire effort of the college is to ignite the young minds and take them beyond the syllabus and mere examinations. It is to transform them to be enlightened and inspired souls with a deep sense of values and passion to uplift the society, a vision beyond the visible. So it will be a college that will be incredibly exciting, challenging, competitive and ever changing to 'make a difference' in life

and to mold a golden career.

St. Joseph College is affiliated to Manipur University. The motto of the college is to IGNITE, INNOVATE & INTEGRATE.

Archbishop of Imphal most Rev. Dominic Lumon is the chairperson/president of the college. Archdiocese of Imphal (Managing Committee) is the legal holder and has the complete and final authority over the college. The Principal, Vice Principals, and other church personnel are duly appointed by the archbishop. All of them are non-salaried personnel working for the mission of the church. The church is passionate about grooming the leaders, technocrats, and managers to conquer the world by harnessing their latent talent and to build a society based on love. The lecturers and other staffs members are appointed by the principal/secretary of the managing committee. The Principal, administrator, and vice-principals from the governing body of the college to run the day to day administration. The security of the college is entrusted to Mary Help of Christians Parish, Ukhrul.

8. FINDING AND DISCUSSION

Based on the parameters suggested by NAAC, the finding is presented in tabular format. After every table, the findings are discussed. The areas discussed in the tables focus on Management of library and information service, functioning, collection and services provided. The extent of the use of library services could not be determined as it is based on observation and interview with the Librarian. Nevertheless, the extent of use of library services was also examined using the available data.

MANAGEMENT OF LIBRARY AND INFORMATION SERVICES

Table 1: Management of Library and Information Services

Sl. No.	Parameters	Pettigrew College	Sentinel College	St. Joseph College
1	Working Days	Monday – Friday	Monday – Friday	Monday-Friday
2	Working hours	10:00 – 3:00 Pm	10:00 – 4:00 Pm	10:30-3:00 Pm
3	Library advisory committee	No	No	No
4	Qualification of Librarian/ Experience	BLIS/30 years	MLIS/3 years	MLIS/3 years

5	Salary of the Librarian	80,000 (INR)	7800 (INR)	9000 (INR)
6	Number of Library Staff	1	2	1
7	Training for staff	No	No	No
8	Library Space	Single Room	Single Room	Single Room
9	Seating capacity (at a time)	10	15-20	150
10	Electricity/ current supply	Out-current	Out-current	Out-current
11	Overall maintenance and cleanliness	Poorly maintained	Okay	Okay
12	Does the library have computers and Internet facilities?	No	No	No
13	Are the library functions automated?	No	No	No
14	What are the financial/funding sources	State Govt.	Institution	Institution
15	Is there any defined policy for collection development, stock verification, promotion and training of library staff?	No	No	No

This table examines the management of the libraries. As it is clear from the table that all the three libraries follow the same working days and hours i.e. Monday to Friday from 10:00 am to 3:00 pm, except for Sentinel college where the working hour is until 4:00 pm. We found that not even a single Library has library committee which is a matter of concern. All the librarian were found to be library professionals. However, an irony was spotted in terms of salary. Each of the MLIS

degree holders in the private colleges gets below 10k/month but the personnel having BLIS degree is paid 80,000. Here, we can see a huge difference in the salary paid to library professionals in govt and private college. It may be mentioned that the difference arises because of two reasons, firstly, the year of work experience, secondly, because of the parent body/funding agency.

It was also found that all the three libraries except Sentinel college library have only one library staff. It implies that all the works in the library are performed by a librarian. One can imagine, how well a librarian could manage all the activities in a library.

9. COLLECTION AND SERVICES PROVIDED TO USERS

COLLECTION DETAILS

Table 2: Collection information

Sl.no	Library Materials	Pettigrew college	Sentinel College	St.Joseph College
1	Books	-	-	1800
2	Text Books	-	1500	4000
3	Reference Books	-	-	200 +
4	Current Journals 1. Indian	Nil	Nil	Nil
5	2. Foreign	Nil	Nil	Nil
6	Peer reviewed Journals	Nil	Nil	Nil
7	Back Volumes of Journals	Nil	Nil	Nil
8	Magazines	Nil	Nil	Nil
9	E- Information Resources	Nil	Nil	Nil
10	CD's /DVD's	Nil	Nil	Nil
11	Databases	Nil	Nil	Nil
12	Online Journals	Nil	Nil	Nil
13	Special collection	Nil	Nil	Nil
14	Competitive Examinations	Nil	Nil	Nil
15	Braille materials/Rare collection	Nil	Nil	Nil
16	AV Materials	Nil	Nil	Nil

6.2.2 Ratio of the library books to the number of students enrolled

Table 3: Book-student ratio

• Sl. No.	Pettigrew college	Sentinel College	St. Joseph College
• Books to student ratio	• 15:1	• 4:1	• 6:1

10. SERVICES PROVIDED

The library has a key role in supporting the academic activities of the institutions by establishing, maintaining and promoting library and information services, both quantitatively and qualitatively. The library offers a wide range of services from reference to electronic information services. College libraries may answer the following basic questions for ensuring appropriate services to the academic community.

Table 4: Services Provided

Sl.no	Services	Pettigrew College	Sentinel College	St. Joseph College
1	Circulation Services	Yes	Yes	Yes
2	Clipping services	No	No	No
3	Bibliographic compilation	No	No	No
4	Information display and notification services	No	No	No
5	Reference/referral services	Yes	Yes	Yes
6	Photocopy and printing services	No	No	No
7	User Orientation/ Information Literacy	No	No	No
8	Resource sharing/ILL	No	No	No
9	Internet / digital resources availability	No	No	No
10	Any others	-	-	Compulsory Library Period

11. EXTENT OF THE USE OF SERVICES

Table 5: Extent of user service

Sl. No.	Use of services	Pettigrew College	Sentinel College	St. Joseph College
1	An average number of books issued/returned per day.			
2	Number of reference inquiries (users) on an average per month (percentage may be specified)			
3	Number of services delivered per capita per month			
4	Average no. of users who visited/consulted documents per month	1,250	1,250	Library hour is mandatory for every Student pursuing B.A. once in a week.

12. BEST PRACTICES FOR COLLEGE LIBRARIES

Listed below are some of the best practices that can enhance the academic information environment and usability.

Computerization of library with standard digital software.

The inclusion of sufficient information about the library in the college prospectus.

Compiling student/teacher attendance statistics and locating the same on the notice board.

Displaying newspaper clippings on the notice board periodically.

Career/Employment Information/ Services.

Internet Facilities to different user groups.

Information literacy programs.

Suggestion box and timely response.

Displaying new arrivals and circulating a list of those to academic departments.

Conducting book exhibitions on different occasions.

Organizing book talks.

Instituting Annual Best User award for students.

Organizing competitions annually.

Conducting user surveys periodically.

13. CONCLUSION

This paper is an attempt to explore or rather expose the prevailing condition of the Libraries in Ukhrul district, Manipur. Which is situated in the NER of India. The difference between college Libraries in rural NER and Mainland India may further be investigated.

References

1. Khatri, R. (2016). *Library Administration*. New Delhi. A.P.H. Publishing Corporation.
2. Educational Profile of Manipur. (2005), 205–225.
3. Salmon, F., & Smart, C. (2017). The Role of the Academic Library in Facilitating Scholarly Communication, *58*(2), 67–79.
4. Thanmung, M., & Ph, D. (2015). *Christianity and Social Change among the Naga Tribes of Manipur*.
5. Virginia, M. (2014). American Library Association, *60*(1), 63–72. https://doi.org/10.1081/E-ELIS3-120044705 http://www.naac.gov.in/docs/Guidelines-Colleges-Library.pdf
6. Vassilakaki, E. and Moniarou-Papaconstantinou, V. (2014), "Identifying the prevailing images in library and information science profession: is the landscape changing?" *New Library World*, Vol. 115 Nos 7/8, pp. 355-375.

Library Guides, Signage and Digital Technology

Dr. Dharam Kumar & Dr. Pardeep Rai

Librarian
Aryabhatta College (University of Delhi)

1. INTRODUCTION

The libraries are peoples universities which are visited by the numerous library users on the day today basis. The libraries are generally housed in the big buildings and internally the collection and services are organized in a systematic pattern, for instance, the library collection is arranged in the libraries in the classified order based on the Classification Scheme adopted in the library. Similarly, sometime the building of the library consists many floors and annexes and users feel confused how and where the particular service will be available. To ease such problem the library scientists evolved a way to put the library guides at the various points to help and guide the users regarding the building plan, floor arrangement, shelves guide in the stacks hall and important messages of 'Dos and Donts'. The form and style of these library guides, or may be called signage, keep changes time to time when any new invention/ advancement in the technology or the material which may be used for such signage is invented. Generally, in the pre internet and ICT age, the manually painted guides were in the practice but as the technology paced forward the design, style and its material changed and now the computer operated digital multimedia signage are used to guide the library users.

Network and multimedia technologies led to emergence of many computer convergence applications. Digital signage through the use of Internet is one of the innovations being adopted by the marketers and advertisers. The traditional signs were static and being replaced by digital signs rapidly.

The term 'digital signage' is frequently used in literature, but often misplaced by referring to any kind of simple digital poster signage. It is described as "screens both large and small that are used to show content and advertising. These screens are usually networked to a main content server which can usually be administered from anywhere in the world, where an Internet connection is available"[1]. Digital signage is a form of business communication where a dynamic messaging device is used to take the place of or supplement other forms of messaging. It is a networked, audiovisual information system that allows remote controlling contents – either program driven or manually – but in any case from a centralized system. It consists of several decentralized digital displays interconnected with

a central system consisting of a content management system and user rights management system. Such intelligent digital signage systems can also adapt the displayed contents to the actual audience in real time and even enable simple non-contact human computer interaction.

The smart digital signage has three significant characteristics. These are : -

(1) the possibility for local contents and local rights to use these in the 'content program',

(2) actually that allows to display new contents within a few minutes on the global network or at single location, and

(3) user rights management that allows distinct users to manage distinct 'program blocks' that are shown on a display.

Digital signage content may include advertisements, community information, entertainment and news. These screen networks are known by many names but the most popular internationally terminology is Digital Signage.

2. WHY DIGITAL SIGNAGE

The digital signage provides many advantages over the traditional signage. Some of the characteristics are as follows:-

1. **FLEXIBILITY** of Content, time and channel
2. **INTERACTIVITY** – these digital signage are more than merely a display screen. Many interactive screens are "looking back" to monitor behaviors and observe the characteristics of the library users/consumers.
3. **ENTERTAINMENT** – Digital signage have strong entertainment component as they have useful information, pleasant scenes and sounds can act as enhancers to users in the library.
4. **INFORMATIVE** - Plenty of information useful to the users can be provided through these signage.
5. **ATTRACTS ATTENTION** - Digital Signage has a considerable impact on the direction and magnitude of library users visual attention during decision making. The moving images of digital signage attracts viewers attention and act as a more effective atmosphere stimulus than those that are static.
6. **HIGH RECALL** – The moving images of digital signage act as a more effective stimulus with high recall value.

7. **HIGH PURCHASE INTENTIONS AND SALES** – Digital Signage drives and motivate customers to buy or take the action. It also creates the positive impact on buyers. In case of libraries these characteristics will increase the attraction of the library users and maximize the utilization of library resources and services.

3. TYPES OF DIGITAL SIGNAGE

The digital signage is evolving as the new technologies are becoming popular day by day. New Inventions and innovations in technology are leading the newer forms of signage. The invention of LCD and Plasma screens the traditional signages are becoming outdated. New Concepts are to use water and fog as screens. Many sensory techniques have also been invented which not only grab attention of the viewer but also interact with them. The 'magic mirror' and 'touch wall' are the latest innovations of the digital signage. Some of the popular innovative signage are mentioned below:-

1. **HOLOSCREEN:** The holoscreen is a revolutionary holographic film which displays any image fed through a projector at a specific angle on to a transparent display. All other lights are ignored. The result is a remarkably bright and sharp image quality, even in brightly lit environment. The screen is a rectangle of glass with a translucent sheet attached to it. The give the sound the speakers may be also attached. The projector can take various inputs such as TV, DVD and computer. From Cable services to free to air Television, DVD, Videos, PC or Laptop, even games consoles, pretty much anything that can be plug into a television or computer screen.
2. **FOG SCREEN OR WALK THROUGH SCREEN:** The walk through Fog Screen is a novel & intriguing method for forming a superior quality physically penetrable dry fog display. FogScreen walk through screen uses ordinary water to generate a thin, dry fog upon which the image is projected, hence making it possible to walk through an image floating in mid-air without getting wet. Walk-Through Screen is an excellent eye catcher.
3. **WATER SCREEN:** The Water Screen is a high – resolution projection surface created entirely in a cascade of water. The unique screen is one of the most significant advancements in multi-media projection technology in years. The interaction of light and water brings a whole new visual dynamic to the presentations. Imagery takes on a holographic look and actually appears to

be floating in mid –air. The Water Screen has been engineered for use with lasers, video, film, intelligent lighting and all multimedia projection and lighting sources. This is unique and inspiring liquid display medium. Every Water Screen is made of connected modular parts. Screens are created by combining 4' nozzle sections made from high grade aluminium alloy extrusions. This allows for endless configuration and shapes to suit users needs. Nozzle sections are light weight and easy to carry and mount. The difference between fog screen and water screen is that later uses water instead of fog as a screen to display images.

4. **INTERACTIVE FLOOR:** Interactive floor projection is a unique medium which allows users to interact with images projected onto the floor or wall. It is colorful, projected animated floor. For it to move, one must move. The Interactive floor projection system consists of the following components: computer System, Infrared Tracking Kit, Interactive Software and projector. The software for Interactive Floor Projection system is modular based with a built-in motion detection engine. Each interactive floor effect can run on its own or seamlessly integrate with each other to create a continuously changing environment.

5. **INTELLIGENT SIGNAGE:** Computer Vision methods of face detection, classification and recognition of people's behavior in front of digital displays can provide some objective data about the people demographics data such as age and sex etc. By using an inexpensive video sensor on the top of the screens the system can be made intelligent by measuring and adapting to the actual audience in real time. The Digital signage or receptive signs automatically learns the audience preferences for a particular content in different contexts based on the attention time on the content and then it presents content accordingly. The e-Mir, digital signage show human faces which react to audience emotion. The face detection classifies facial expressions and determines gender. This information is used to let a human character on the screen react accordingly and encourage interaction with the face/sign. Chen et al.., 2009 describes a vision based gesture recognition approach to interact with digital signage systems. Using different techniques and algorithm, a set of hand gestures can be recognized in real time and converted to various gesture commands to control and manipulate the digital signage display[2]. Therefore it facilitates interaction with digital signage using hand gestures. Thus an intelligent digital signage system can give the right message to the right audience in real time.

4. DIGITAL SIGNAGE HARADWARE/ SOFTWARE

The Important hardware/ software producers for digital signage are as follows: -

1. **Media Matrix** – USA based division of Peavey one of the world's largest manufactures of professional audio equipment. Media Matrix revolutionized the high – end audio technology market with its computer based audio processing and control interfacing systems.
2. **Peavey Commercial Audio** – Founded in 1965, Peavey is one of the World's largest manufacturers and suppliers of professional sound equipment.
3. **SVSi** – SVSi's voLANite digital media distribution and matrix switching solution connects any combination of analog and digital sources to any number of outputs over the most reliable switching solution in the industry. It provides easy to install, cost effective Networked AV products offer point to multipoint streaming of HD Content over standard IT Infrastructure.
4. **Whirlwind Music** – For last 35 years it has provided a complete line of interface solutions. Fom mic cables, Medusa snakes, splitters and custom metal fabrication to advanced digital audio solutions.
5. **Adder Corporation** – Adder is a leading developer and thought leader in connectivity solutions. Adder's media networks, extenders and keyboard, mouse and video switch solutions enable the control and distribution of IT systems around the world.
6. **Black Box** – Black Box offers everything you need to set up end to end digital signage systems. Solutions include iCOMPEL appliance/ players platforms for easy to implement signage, plus extenders, splitters, switches, converters etc. The company's site blackbox.com/go/guidesDS may be visited for AV multimedia and digital signage Design and Sourcing Guide.
7. **Blackmagic Design Inc.** – It deals with Mini converters which are easy to use SDI Converters. HyperDeck shuttle gives the quality and flexibility of compressed DNxHD and uncompressed recording from SDI and HDMI direct to common low cost SSDs.
8. **CastNET** – CastNET is an easy to use yet powerful software solution for managing digital signage. It combines multiuser approval workflow and critical IT features with dynamic visual content.

9. **DA-LITE** – Founded in 1909, Da-Lite Screen Company is the leading producer of high quality commercial and residential projection screens worldwide. Da-Lite manufactures projection screens and accessories for Fortune 500 companies, entertainment and major broadcast networks, education systems and governments around the globe.
10. **DVIGEAR** – It is leading supplier of Digital connectivity solutions for a wide range of professional display applications like splitters, switchers, matrix routers etc..
11. **Gefen** – Gefen supplies the best selection of signal switchers, splitters, extenders, scalers, KVM, digital signage and home theatre accessories.
12. **IAVI** – provides pro AV distribution to resellers, integrators and installers worldwide with value added services.
13. **LG Electronics, USA, Inc.** – It is world leader in digital products including commercial grade LCD and Plasma displays.[3]

5. APPLICATION IN LIBRARIES

The libraries in US and European countries are switching to digital singage from the traditional plastic or paper signage. There are various reasons as the traditional signage is not effective and are invisible due to static nature, not upto date and so on. The libraries may use the digital signage for giving information regarding the building plan of the library. The large Digital display may inform the users about the various sections like Reference Section, Periodical Section, Circulation Section, and the Internet access facility area/ section inside the library. The large university libraries may also utilize the digital signage as Guide to Public Utilities like Toilets, Canteen and Photocopy counter.

In addition to the above, the digital signage may help the libraries as Rack Guide in the Stack Hall. The touch screen Tablet size screens may be installed on Racks to inform the users about the books available on the particular rack, with abstract of the book and catalog information. The New Arrivals of Books, Journals and E-resources may be informed to the users in more effective manner. The Users Orientation is an important part of effective library services. The digital notice boards displaying important messages, circulars etc. may be used in the libraries. The library staff and the Users may be asked to create content for signage and the campus planning, student life, career services etc. may be displayed more vibrantly with currency.

6. CONCLUSION

The digital signage has revolutionized the modern day advertising with multimedia technologies. Simple animated banners have been replaced with Water and Fog Screens. The sensors and visual capture devices are being used to interact with the viewers. The digital signage promotes interactivity, high retention and maximum recall value. The digital signage may help to improve the public relations front of library. It will allow the library to communicate with and engage its users community far more effectively than with printed signage.

REFERENCES

1. Donald A. Barclay, Thomas, Bustos and Teal Smith, Signs of Success: Digital Signage in the Library, C&RL News, June, 2010.
2. Ii Chen, Q. and others. (2009). Interacting with Digital Signage Using Hand Gestures. In, International Image Analysis and Recognition, 347-358, Springer, Berlin Heidelberg.

BIBLIOGRAPHY

1. Anderson, C. (2015). 10 key Stats that are Accelerating the Adoption of Digital Signage. Retrieved on 11/09/2017.
2. Dennis, C. Brakus, J J, Gupta S. and Alamanos, E. (2014). The effect of Digital signage on shoppers' Behaviour: the role of the Evoked Experience. Journal of Business Research, 67 (11).
3. Neilson. (2015) Nielson study Highlights Efficacy of Digital Bilboard. Retrieved on 11/09/2016.
4. Yackey, B. (2009). A beginners guide to digital signage. Digital Signage Today. Retrieved on 11/09/2017.
5. Matt, Enis. Signs of the Time. Library Journal, June 15, 2016.
6. SVC Buyers Guide 2012 : www.svconline.com as on 19/09/2017.

Management Of Library And Information Science In Kendriya Vidyalayas

Rakesh Kumar Pandey

(M.A (History); B.Lib.I.Sc; M.Lib.I.Sc.;M.Phil.;UGC NET;CIC) Librarian,
Kendriya Vidyalaya , OEF Kanpur, UP

Now a days automation has become a very common term in Kendriya Vidyalaya. Even the children of beginning classes are becoming familiar with the library and its automated works and services .Automation of library does not mean to automate the library in itself, but it is an automation of library and information activities to fulfil the need of vidyalya library by saving of cost, time and manpower. The latest generation computer and communication technologies have played important role in library automation. For conversion of traditional vidyalaya library into modern automated library and for its functioning, proper planning and management is must.

1. LIBRARY AUTOMATION

In present era, we can't imagine a library without automation. The beginning of library automation took place during 1945 when Venneral Bush devised a mechanical library known as "Memez"that allowed search for bibliographic items from different access points. The computerisation of library started in 1960's and one step ahead microcomputers were used in 1980's .The use of telecommunication technology and internet has brought the phenomenal changes in the automation scene. Now a days even small libraries are being automated and even small kids are being benefitted with the automated library facilities.

The automation word is derived from the Greek word "Automos" means power of spontaneous motion or self-movement .In the context oflibrary it is mechanisation of all library activities. According to **ALA Glossary** of library and information science automation is defined as "The performance of an operation, a series of an operational process by self-activating, self-controlling or automatic means. Automation implies the use of automatic data processing.

Equipments such as a computer or other labour saving devices". However, in general library automation has come to mean the application of computers and related data processing equipments into library works and services. Computerisation of library and information system includes;

- Library works , practices and procedures ,

- Information technologies –computer hardware, software , having database management system, and
- Work force i.e. library personnel.

In such a way library automation refers to the automation of library activities and services such as acquisition, serial control, cataloguing, circulation, Management Information Services (MIS). The services of telecommunication and reprographic technologies have been equally important as it supports to library automation.

2. WHY LIBRARY AUTOMATION IN VIDYALAYA?

As we know necessity is the mother of invention .New inventions and their use is being made in all field of society. In such an atmosphere, how will a library and information institution remain deprived from the updating? Automation is no doubt a costly affair, the question arises what is the purpose and need of library automation? In such situation, the major factor that plays important role is Cost and benefit analysis, it means if the cost invested in any new device, is beneficial to the organization in future, then the new device ought to be implemented. Library is not like other business institutions, it is a service institution therefore it cannot be measured with the same parameter. The benefit derived by library users becomes major consideration. Library benefits the vidyalaya in indirect way and it makes the vidyalya user knowledge smart by providing latest information, therefore the cost of automation of library is justified.

The manifold increase of information output and usage has posed the problems for librarians and information scientists to handle the information in effective manner, as per the need of modern society. The house keeping jobs of libraries and other related works became complex and could not satisfy the modern requirements of users. Due to advancement in technologies, minimization of the cost, updated users expectations and change in attitude of librarians and information managers, to manage the information efficiently, automation of library activities became the only option. Moreover, the computer and network technologies have proved the information storage, processing and retrieval speedily, accurately than traditional manual system. For the job like filing, sorting, typing, and works of repetitive nature can be replaced by the use of technologies. In nut and shell, we need the automation of library and information service due to the following reasons:-

- To organise manifold increase of information ,
- To meet increasing demand of services of modern society ,

- To handle the work through minimum work force ,
- To facilitate electronic access for required information and to provide information to the people residing in remote localities ,
- To provide latest information to users ,
- Document Delivery Services as soon as possible,
- To provide services beyond place and regions.

3. STEPES OF LIBRARY AUTOMATION IN VIDYALAYA

Once it is decided to automate the library, it is necessary to be familiar with all the aspects of library automation so that task can be completed in a smooth manner .As library is a growing organism, if any system is going to be implemented in library, it should be done properly and in planned way, keeping in view of present and future needs of library. As automation is a major and multi-directional task, the coordination of administrative authorities, technical personnel ,library and information professionals is necessary .The automation work of any library implies the following stages;

Stage I	To study the internal work flow and need of library,
Stage II	Retrospective conversion of library holdings and access to local resources,
Stage III	Provision of external resources – Document Delivery Services; provision of online data exchange, integrated online resources and World Wide Web resources;
Stage IV	Inter operability of system/ services, keeping in view global trend and developingdigital libraries.

4. APPROACHES TO LIBRARY AUTOMATION

Library automation needs a fair coordination among various agencies and individuals. The range of approaches starts from library collection, user's transactions and services are important. It is necessary to consider all the aspect of library at the time of planning of library automation because the need, type of users, size of collection, and actual number of transaction, range and variety of services differs from library to library. After properanalysis of library requirements, the library software and other set up should be adopted .If library plans to give OPAC and remote access,accordingly appropriate system should be implemented to back

the services. Kendriya vidyalaya libraries has adopted e granthalaya software for automation of library .NIC provides all types help in implementation and running of this software.

5. HOW AUTOMATION HELPS THE VIDYALAYA LIBRARIES?

The increased flow of information has created a challenge to perform the house keeping operations i.e. Acquisition, technical works –classification & cataloguing, circulation serial control, search and management. Computer and other information technologies offer an efficient and effective tool for handling the burgeoning knowledge problem. On the other hand the growth of literate population has increased the demand of specialised and quick information services, the users of information society have realised the importance of information and knowledge .Thereby emphasizing the critical role libraries play in dispensing information ,they expects more and more from libraries today .The traditional method is not fit to provide quick answer. Therefore it is thought that automation of library is the enhancement of the library .The pressure of inflation .budgetary cut and information explosion are forcing vidyalaya librarians to form networks and consortia with a view of resource sharing .Automation helps in following ways :-

- Minimise man power in library works and services ;
- Reduce routine and repetitive jobs ;
- Multiple outputs become possible ;
- Productivity is increased;
- Quality of services are increased;
- Helps in new production and processes;
- Helps in answering the multiple queries;

6. PEOPLE INVOLVED IN LIBRARY AUTOMATION

Library automation is not one man job .But kendriya Vidyalaya is one man handled library. The human element is very important in implementing an automated system .The human skill of different fields is needed for different types of works. In Kendriya Vidyalaya Librarian alone is playing all the role .In general the coordination and association of:-

- The library staff,

- Administrative and governing authorities,
- Regulatory agencies ,
- Purchasing departments ,
- Computer center personnel,
- Vendors ,
- Consultants and attorneys,
- Other libraries, and
- The library users are essential for library automation.

7. CHECK LIST FOR LIBRARY AUTOMATION

The followings are the check-list of library automation:-

- Proposal for library automation ,
- Provision of budgetary aspect,
- Computer hardware ,software and other peripherals needed,
- Human skills needed for different works ,
- Time target for different steps and completion of works ,
- Provision of alternate library services during automation period ,
- Vendors and agreement with them ,
- Hardware maintenance agreements ,
- Professional trainings to library personnel.

8. MANGEMENT OF LIBRARY AUTOMATION IN KENDRIYA VIDYALAYA

Management is an important aspect for achieving perfection in any job. Management of library automation includes planning, implementation and evaluation of library automation.

The proper management of automation helps the library to avoid some of the hazards of automating too much, automating too little, automating the wrong aspect of library or trying to automate without necessary support needed. For example before finalizing the library software it should be kept in mind whether following aspects are going to be fulfilled properly or not by the software:-

- AUTHORITY CONTROL: It is used to maintain constant standard for specific searching at the local level and also at the union catalogue ;
- ACQUISITION: There should be proper provision for themaintenance of acquisition works -. approval ,selection ,ordering, accessioning ,billing etc.as per professional need ;
- CIRCULATION: System has provision of charging and discharging of documents and fool proof security;
- CATALOGUING: MARC record should be allowed to be copied from different sites;
- REPORTS: It should behelpful to give report, such as overdue, holdings, fines, circulations, statistics, lostitems, category wise documents etc.
- STOCK VERIFICATION :It should have a suitable system of stock verification ;
- UNION CATALOGUE: For copying of bibliographic record union catalogue is used, it saves the time and man power;
- ELECTRONIC RESOURCES: The software should support the access to electronic resources under network environment;
- REGULAR UPDATE: The software should have the facility to cope with the latest challenges arising, etc.

9. THE FEASIBILITY STUDY

The major feasibility study includes:-

- Technical feasibility study,
- Operational feasibility study,
- Economic feasibility study,

Under technical feasibility study, the following aspects are considered:

-Whether hard ware and software are suitable,

- The technical guarantee of accuracy, reliability, security, backup, etc. are up to the mark.

Under operational feasibility study it is examined that the system which is going

to be implemented is suitable for parent organization's environment and suited to the personnel employed.

Under economic feasibility, as all the libraries are facing the challenge of shrinking of budget and raising the cost of materials. Therefore, it is studied that whether the proposed system is economically viable to the organization or not.

10. SERVICES OF CONSULTANTS

The services of consultants are helpful to know all the aspects from beginning to end of automation. It plays role like an architect in construction of apalace. The important thing to remember is that when we hire a consultant, we are entering into a partnership with knowledgeable professionals with the skill and experience necessary to the success of project. As all the fields of work which are covered during the automation go beyond the library staff experience and expertise .A consultant can guide regarding proper data collection method, evaluationprocess, the system we purchase is not under configured from the outset and will guarantee, that our performance, expectations are compatible with the system being purchased and adequate for long term.

The following areas can also run under supervision of consultant and get benefited:-

- Benchmark test of system which is going to be installed .It includes system reliability test ,functional performance test ,full load response and time test;
- Priority of retrospective data feeding as per institutional need ;
- Time line to perform step by step automation work ;
- Guidance to library staff as and when needed.

11. THE HOUSE KEEPING WORKS AND AUTOMATION

The library house-keeping jobs cover all the related works of the library which are categorised into Admin , acquisition ,cataloguing ,serials, micro- documents , budgets , and search e .A brief discussion regarding automation of major section are discussed below.

12. ACQUISITION

The works of acquisition covers, recording and maintaining files of document ordered for library .Purchasing of new items is a regular feature of any library .In automated system the related records of acquisition section is maintained mechanically and relational database prevents duplication works .For example, in e-granthalaya ,the related works are covered through following access points – author directory, check duplicate title ,add new title add acquisition record , general approval ,update approval ,add order details ,general order, receive documents ,accessioning ,add bill details and add payment details .Due to ever increasing use of ISBN and ISSN,the automation works of acquisition have become most popular and at reasonable cost .Asuitable system allows the following works :-

- Maintains record of acquisition ,
- Verification of bibliographic data of required items ,
- Duplicate checking –whether the items are already available /under process or not ,
- verification of price ,
- Minimise repetitive works of ordering and prepare orders ,
- Encumber the correct amount of money ,
- Maintains claims for late or non-delivered items,
- Maintains and updates the on ordered /in process file ,
- Receive the orders and check the completeness of orders'
- Prepare payment authorisation forms and orders ,
- Maintains the needed financial and statistical reports.

13. CATALOGUING

Under technical works the cataloguing section attracted much to the librarians for application of computer .It made possible more work in minimum manpower.E granthalaya covers the cataloguing works under following headings –retro conversion ,full cataloguing ,change copy status, update holdings ,status wise collection ,stock verification , general bar- code labels .In general, any system should have the following capabilities :-

- Provision of large database to incorporate large amount of titles,

- Can give cataloguing product such as –card, computer output microfilm, book catalogue and catalogue on machine readable magnetic tape,
- On line access to the database,
- Provide online authority control to ensure all entries of the database are consistent in their use of proper forms of names and subject headings,
- It should follow the high standard of quality and latest cataloguing rules ,
- Provision to show cataloguing online and modify the cataloguing as per local rule ,
- Provision to incorporate such data so that required statistics can be generated.

Yet there is not any system which is full proof to perform all the cataloguing works, even then automation has played a vital role in technical works of libraries.

14. SERIAL CONTROL

Management of serial is the most challenging task in library field .Its nature of change from time to time,subscription, titles, frequency,billing, binding after completion of volume, etc. varies from time to time. Under automation, the system has facilitated the maximum serial management works .Automated serial management covers the following areas:-

- Duplicate checking and maintaining of records of new serials,
- Allows for ordering ,renewing and cancelling subscription ,
- Allows cataloguing of serials,
- Allows to find out missing issues and generates its reminders ,
- Maintains binding records ,
- Maintains budgetary records.

15. CIRCULATION

The circulation section maintains the record of charging and discharging of documents .Automated circulation management keeps the record of member's registration, issue, renewal, return and reservation of documents .A unique member code is given to each member of library. User card is given to all the

users. At present bar codes are also being used in libraries for issue and return of documents .The details about position of document ,when ,by whom ,and in what quantity material have been borrowed, returned ,renewed, requested, damaged ,lost or stolen ,heavy used books and rarely used books are also identified.

16. INFORMATION SERVICES BASED ON AUTOMATION

Beyond above house-keeping works, amodern library and information system refers various kinds of information services to its users in anticipation and also on demand .The important services are Current Awareness services (CAS), Selective dissemination of Information Services (SDI) and Electronic Clipping Services,etc.

Online bibliographic search service seeks to mount of range of database prepared to meet the requirements of a specific users and it acts as an intermediary between the database producer and the end user .These databases include both the bibliographic and document database .The type of on line search services include the traditional supermarket service, specialist search services publishers and bibliographic utilities. Online search makes use of search of index terms and command language and interfaces.

In the age of information explosion, it is not possible for any library to subscribe or procure all the relevant documents in a subject .Therefore document delivery serviceis a must. The automated system has facilitated users such a services that they are benefited at any corner of the world.

17. CONCLUSION

Automation of library means application of computer and communication technologies in library works to provide quick, quality and reliable services. It is a skilful technical work. It needs proper planning as per requirement of concerned library, sufficient budget, training to staff, administrative support, step by step implementation and overall zeal of modernisation and a change. in kendriya vidyalaya libraries e granthalya software is adopted .libraries are handled by single librarian .Therefore it is expected to the librarian to have jack of all library automation skills . Library blog has become usefill tool for dissemination of information .

REFERENCE

1. Duval, B.K and Main(1992).*Automated Library System;*A Librarians Guide

and Teaching manuals .London: Meckler.

2. Salmon,Stephen.Library Automation .In: encyclopaedia of Library and Information Science.vol.14.New York: Marcel Dekker.
3. Lovecy,In (1984).automating Library procedures-A Survivor'sHandbook. NewDelhi;D K Agencies (P)Ltd.
4. Sharma,Pandey, S. K.(1995).library automation .In: Fundamentals of Liobrary Automation .New Delhi's;EssEsspublications.
5. Sharma, Pandey, S .K. (1999).*Library Automation System.In: Encyclopeadia of library automation System and Networks.Vol.4.Organisation of library Automation*. New Delhi: Anmol Publications Pvt. Ltd.
6. Retrospective Conversion: Guidelines for libraries.
7. Kumar ,P.S.G.(1987)Computerisation of Indian Libraries .Delhi. B.R.publishinghouse .

Marketing Of Library Resources, Services And Products: A Case Study Of IIM Lucknow

Ms Simran Gupta

Prof Asstt, Education Library
Dayalbagh Educational Institute
(Deemed University), Dayalbagh, Agra (UP) India
E-mail: proficientsimran111@gmail.com

Dr Mange Ram

Deputy Librarian & I/C
Central Library
Dayalbagh Educational Institute
(Deemed University), Dayalbagh, Agra(UP) India
E-mail:mram72ster@gmail.com

Abstract: The present paper explores the concept of marketing in general and in library. In the present papers authors discussed the marketing strategies and products in IIM Lucknow library. IIM library fulfilling the requirements of their customer (users) by applying the information technology in an effective way. The present paper explored all marketing products of IIM library for their users.

Keywords: IIM Lucknow, Gyanodaya Library, Library Marketing, Information Technology

1. Introduction

Now technology has changed and allowed ever new ways of creating, storing, organizing and providing information, customer expectation and the role of Libraries has increased. Now the users want information quickly, they want full text of a document instead of a citation to it, and they want information that clearly answers their questions. Library's prime function is to satisfy the complex and increasing demand for information products and services. If the customer is not satisfied with the particular Library then he/she certainly will go for the other alternate as Internet and other Library[1].

1 Mange Ram, (2005) 'Marketing of Information Services in Libraries' in a Book 'Information Technology for e-libraries. Raj Publishing, Jaipur, p. 224-231.

2. Gyanodaya Library, IIM Lucknow

IIM Lucknow is a global center of excellence, in the field of management. This institution is the fourth in the prestigious IIM family of management schools to be established in India. It is also ranked 4th with 71.58 scores given by National Institutional Ranking Framework (NIRF) of Ministry of Human Resource Development (MHRD) in the year 2017 after IIM Ahmadabad, IIM Bangalore and IIM Calcutta. IIML aesthetically designed campus has a beautiful and renowned learning resource center Gyanodaya Library. The IIML Library System comprises of a Gyanodaya Library and one IIML Noida Campus library that collectively cater the needs of teaching, research, management development programmes, executive programmes and training programmes of the institute. Gyanodaya Library has an enormous qualitative collection of about 1.25 lakh information sources including books, reference books, gray literature, theses, reports, CDs, microfilms, bound volumes of journals, databases, journals (online+print), e-books related to the field of management, marketing, commerce, IT, English literature, Hindi etc. The faculty, the staff, spouses of both, kids of both and students are members of the library apart from corporate and alumni. This literary treasure is the member of e-ShodhSindhu consortium which came into existence after the merger of three major consortia viz- UGC-INFONET Digital Library Consortium, N-LIST, and INDEST-AICTE consortium.

3. Library Marketing

Libraries spend a huge amount of funds in their collection development as storing, processing and dissemination of information in available resources. Marketing means optimum utilization of information resources and identifying the customer by many means. Marketing helps the Libraries in optimum utilization of their resources to identifying the customer. User's satisfaction is the central point of any types of Library. Marketing identifying the reasons of dissatisfaction of the customer by survey, questionnaires etc. and suggests the solutions of the problems and leads to the Libraries to continuous improvement in their services operations etc.

Now in the changing environment or in digital era the user expectation has increased due to huge amount of publication, research on complex and interdisciplinary subjects. Without adopting the new technology as computers, Internet etc. in their services Libraries cannot perform their functions correctly and cannot fulfill the reader's increasing requirements and expectation. "The products and services of Library and information centre can be promoted in three

ways, through packaging of products and promotional activities and personal means (Libraries and Library staff doing in personal way)[2].

Marketing helps the Libraries in adopting the new technology for performing better services to the customer.

P. Kotler's view of marketing is, "the analysis, planning, implementation and control of carefully formulated programs designed to bring about voluntary exchange of values with largest markets for the purpose of achieving organizational objectives"[3].

According to Mathews "Marketing is an activity directed as satisfying need and wants or offering a perceivable benefit to the consumer through an exchange process[4]".

4. Library Marketing in IIM Lucknow

IIML Gyanodaya Library is providing different services and products to their users as mentioned below:

5. Gyanodaya Library Web Portal

A library web portal is the strongest and the most efficient apparatus to elaborate its functioning, explain library resources, information services, and information products. With the help of library website, a user can fulfill all his queries regarding library system; it's functioning, rules, regulations, library hours, library staff, new databases, journals and books acquired by the library immediately. This knowledge reservoir has maintained a website (Exhibit 1) to complete all these motives smoothly. It updates its website regularly to keep in touch with patrons, to sustain its powerful image and strong position among its clienteles for marketing its products and services smartly.

2 Nikam, K. Laiser and Talwar, V.G., (1999). Application of marketing principles in Libraries and information centers in Vistas in Library, information systems and networks, Venugopal, M.V. and others (editors), Agra, Y.K. p. 257-292.

3 Kotler, P. (1982). Marketing for non-profit organization, New York, Prentice Hall

4 Mathews, Anne J. (1984). The use of marketing principles in Library Planning in Marketing for Libraries and Information Agencies, Ed. By D.E. Wainganga, New Jersey, Alex, 1984



Exhibit 1. Web Portal of Gyanodaya Library, IIM Lucknow (IP based- 192.168.1.13)

6. E-resources

The knowledge bank of IIM Lucknow acquired 414 e-journals (Exhibit 2) including 132 Indian periodicals and 282 overseas journals, ProQuest EBook Central (Exhibit 3) which comprises e-books on business, economics, computer science, IT, anthropology, commerce, management and many other subject fields. This knowledge bank subscribes 58 e-databases (Exhibit 4) and 17 from e-ShodhSindhu. For providing simple & seamless access, this library system categorized its databases into four categories (Exhibit 4) which are as follows-

a. Corporate database (Business Monitor Online, Crisil Research, Prowess, IBID, Euromonitor, etc.)

b. Database of e-journals (ABI INFORM Online, Econlit, ACM, IEL, Informs, Taylor & Francis, InfoSci Journal, Emerald, Wiley InterScience, Elsevier, etc.)

c. Indian statistical & economic database (CapEx, India Trades & IndiaStat.com)

d. Legal database (Judgements Information System, SCC Online & Westlaw India)

This library provides its online resources accessible via four different channels as access through IP address, CD Server, password and available only in the library (See exhibit 5). Gyanodaya Library has a rich and renowned collection which enhances its importance among its library patrons. This learning resource center also subscribes a unique e-news database (Exhibit 6) named Library Press Display

by Press Reader which provides seamless access of near about 4000+newspapers and magazines in 60 different languages from 100 countries over the globe. These e-resources cater the information needs of clienteles seamlessly, quickly, beautifully and comfortably. Gyanodaya Library is a member of the e-ShodhSindhu consortium, and it also gets access to 17 databases from this consortium (Exhibit 7). For maximizing its usage this learning resource center takes user statistic from publishers annually and display it on the notice boards and also upload in the Gyanodaya Library Web Portal. This knowledge bank also prepares poster which illustrates whole scenario of library resources, services and products investment, usage and growth,



Exhibit 2. E-journals subscribed by Gyanodaya Library

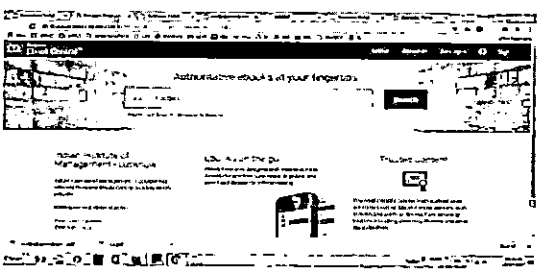


Exhibit 3. E-books subscribed by Gyanodaya Library

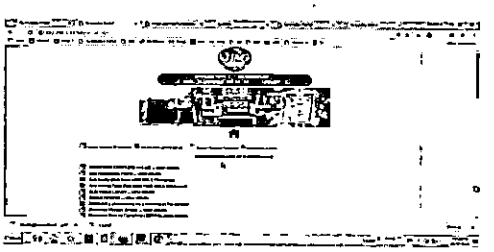


Exhibit 4. E-databases subscribed by Gyanodaya Library

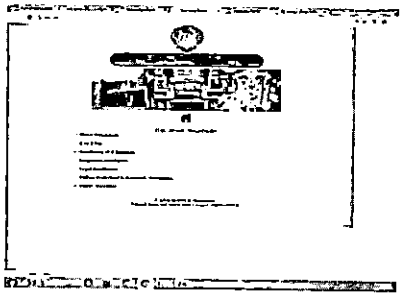


Exhibit 5. Categorization of databases @ Gyanodaya Knowledge Bank

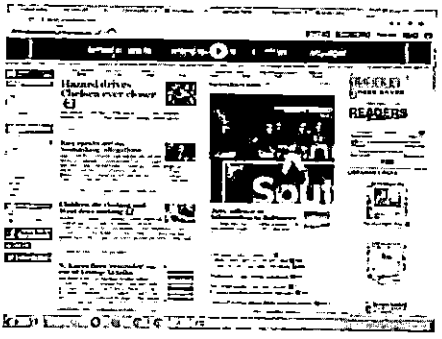


Exhibit 6. E-news database subscribed by Gyanodaya Library

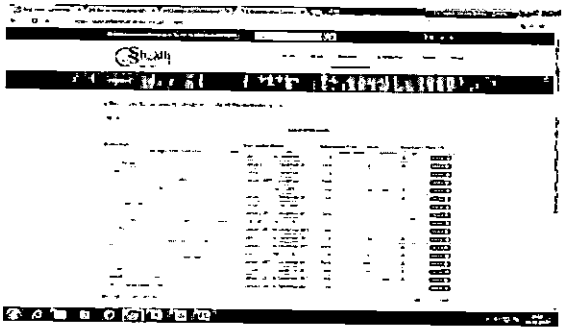


Exhibit 7. E-resources subscribed for IIM Lucknow through e-ShodhSindhu (www.inflibnet.ac.in/ess/eres.php?memID=347)

7. WebOPAC

IIML Gyanodaya Library has maintained a union catalog which includes holdings of Gyanodaya Library & IIML Noida Campus Library. This online union catalog is available on the intranet at http://192.168.1.94:8480/opac/ (Exhibit 8). For enhancing its search facility this library system installed a setup for WebOPAC searching including two computers (Exhibit 9)

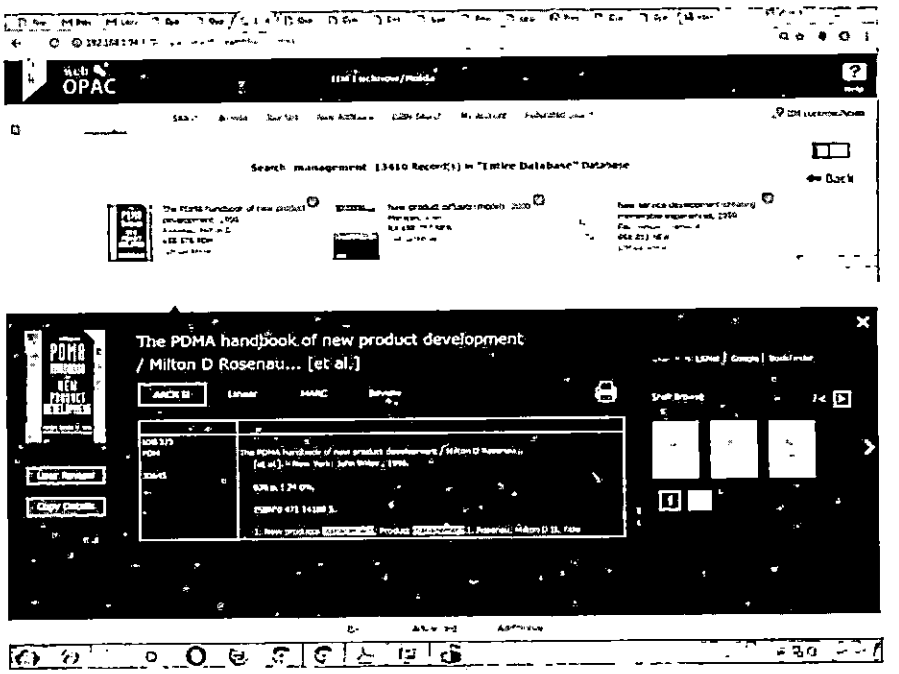


Exhibit 8. WebOPAC/ Union Catalogue maintained by Gyanodaya Library



Exhibit 9. WebOPAC area @ the Gyanodaya Knowledge Bank

8. Discovery Service

For getting more relevant and precise search within few seconds, Gyanodaya Library subscribes Summon discovery service (Exhibit 10 and 11), to facilitate its patrons' hurdle free. This discovery service has unified index to WebOPAC, databases, e-journals, e-books, e-magazine, etc. This unified index provides a single search window facility to its clienteles for accomplishing the fourth law of library science (To save the time of the reader).



Exhibit 10. Single Search Window facility at the homepage of Gyanodaya Web Portal

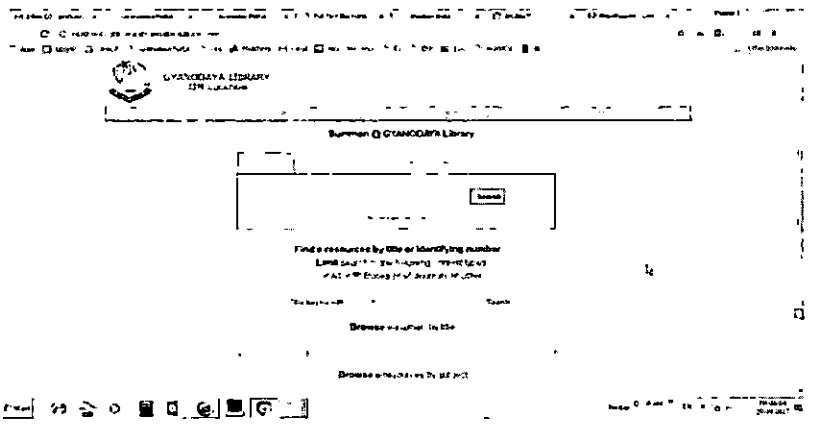


Exhibit 11. Summon discovery service at Gyanodaya Library

9. Audio-Video Library Service

This knowledge repository contains 361 videos for providing seamless information access to library users. Many commemorative stories of renowned managers, CEOs, MDs, many influencing movies, many lectures by eminent professors and

veteran personalities of various fields, many class lectures, and many important interviews are available in video (Exhibit 12 and 13) form which is stored in CDs & makes accessible in the web through WebOPAC.

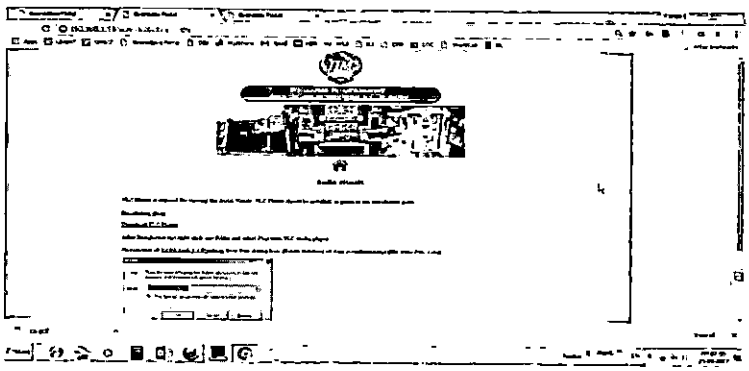


Exhibit 12. Process of accessing Videos @ Gyanodaya Library

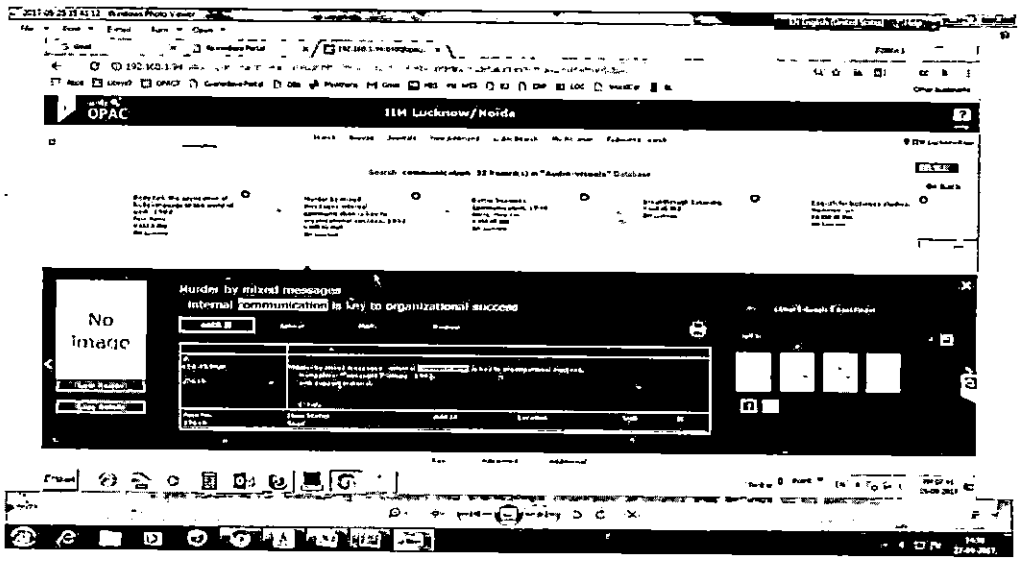


Exhibit 13. Videos available through WebOPAC

10. Inter Library Loan Service

To get a solution for dwindling in the budget, this knowledge reservoir provides this service to its patrons. As IIML Noida Campus Library is a part of IIML's Gyanodaya Library consequently, it provides ILL service to both of the libraries users. Gyanodaya Library is also the member of DELNET (Exhibit 14), so it also arranges unavailable information sources which are available DELNET on inter-

library loan request basis.

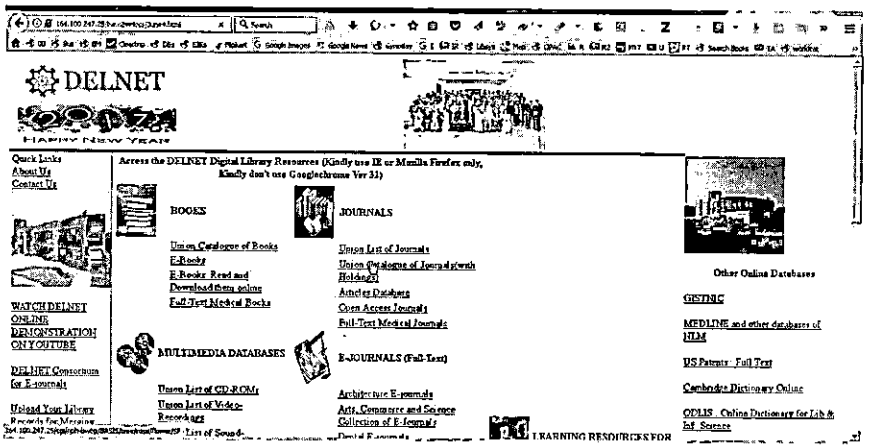


Exhibit 14. Screenshot of DELNET interface

11. List of Current Additions/CAS Bulletin

Technical section of this knowledge bank prepares CAS Bulletin (Exhibit 15), in the reference of current additions for its clienteles bimonthly. This bulletin has also been uploaded in the Gyanodaya Library web portal regularly under information services option. A user can also access recent additions through WebOPAC (Exhibit 16). Library also maintains new arrival racks and books are displayed for fifteen days in those stacks before placing them in the exact location. Acquisition Section also sends a circular mail to the recommender for borrowing that document and library wait for three days after complete processing of the book and reminder circular email.

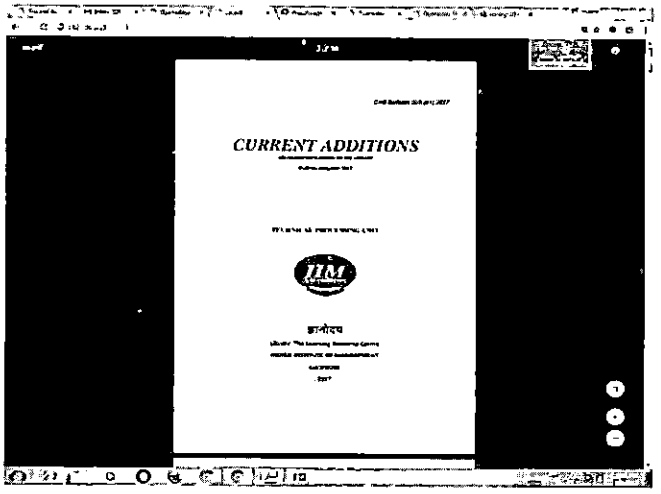


Exhibit 15. List of Current Additions/ Bimonthly CAS Bulletin

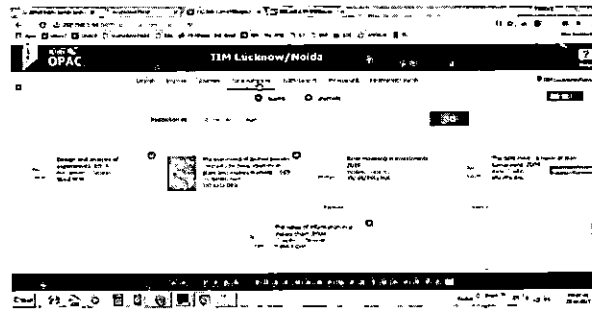


Exhibit 16. Current Additions available through WebOPAC

12. Internal Library Extension Service/ Reading Beyond Curriculum Service

To attract its patrons and to enhance the usage of information resources Gyanodaya Library learning resource center prepares a unique list which contains three interesting sections which are as follows, to attract its user beautifully-

a. Indian College and Campus Literature (Exp- Watch out! we are MBA: a novel, five points someone: what not to do at IIT, Second degree: one crazy year at IIM-A, etc.)

b. Management Novels/ Parables (Exp- A better India, a better World, Beyond the bottom line, the deadline, A business tale, Heroz, High five, It's not luck, etc.)

c. Management Humour and Irreverent (Exp- Eat or to be eaten, joy of work, piece of crack, etc.)

A user can download this file by clicking the link which is available on the home page of Gyanodaya Web Portal (Exhibit 17). A physical hard copy of this file is also available 24x7 at the lobby reading area of the library.

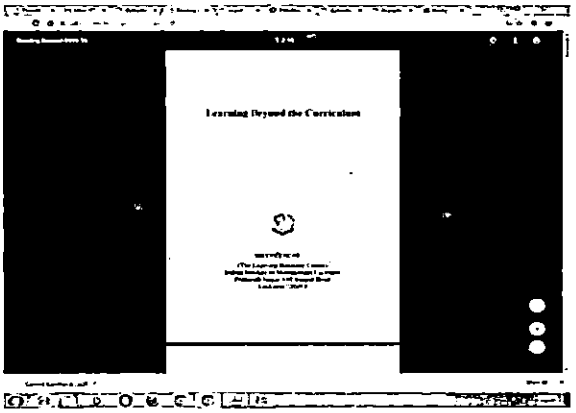


Exhibit 17. Internal Library Extension Service/ Learning Beyond Curriculum List

13. E-news Clipping Service

Gyanodaya Library provides daily personalized current awareness service, e-Newspaper clipping service (Exhibit 18), to the higher authority of the institute and some specific users as per requirement. The reference section of this library provides this service. The reference professionals acquire, ferrets and collect valuable, beneficial and fruitful news from authentic and reliable news sources as e-magazines, news portals, websites and e-newspapers by pre-decided keywords to keep up-to-date to the users. It's a daily e-CAS which runs digitally. It prepares in softcopy, delivers to end-user by daily email and stores its softcopy in external hard disk for future reference.

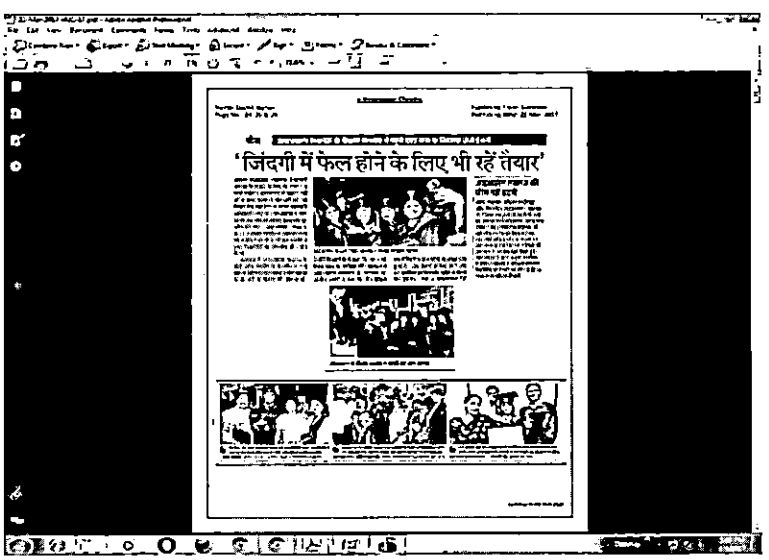


Exhibit 15. Screenshot of e-Newspaper Clip

14. Remote Access Facility

To implement all five laws of library science effectively Gyanodaya Library System of IIM Lucknow provides remote access facility to its clientele. For providing hassle-free information web environment to its patrons without the barriers of time and place this learning resource center provides remote login services via Athens remote access account (Exhibit 16) and sometimes via TeamViewer software.

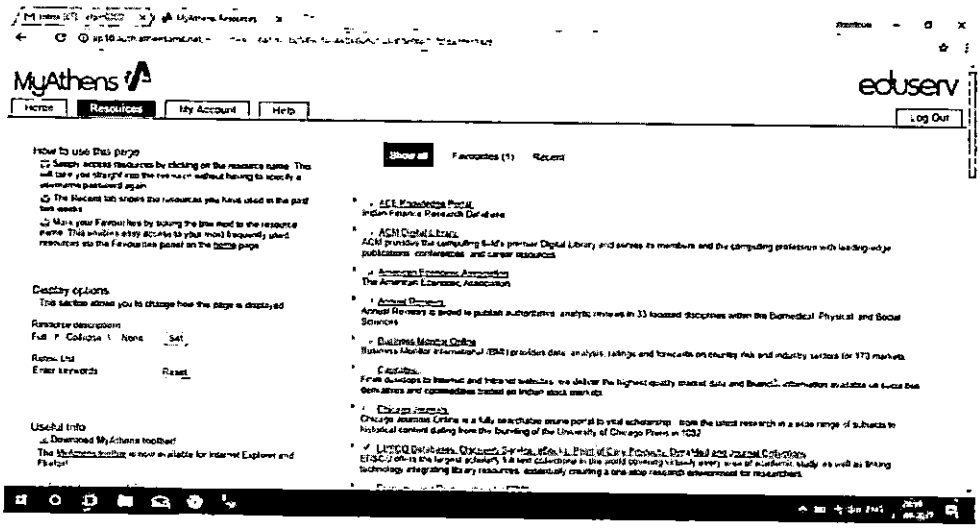


Exhibit 19. Athens remotely accessed account screenshot

15. Doctoral Theses and Gray Literature

Theses and gray literature of any research institution are the most valuable, pure and authentic output. This knowledge treasure gives complete bibliographic details of these documents via WebOPAC (Exhibit 20). A user can consult these bibliographic details to get the exact study material without waste his/her precious time in other irrelevant documents.

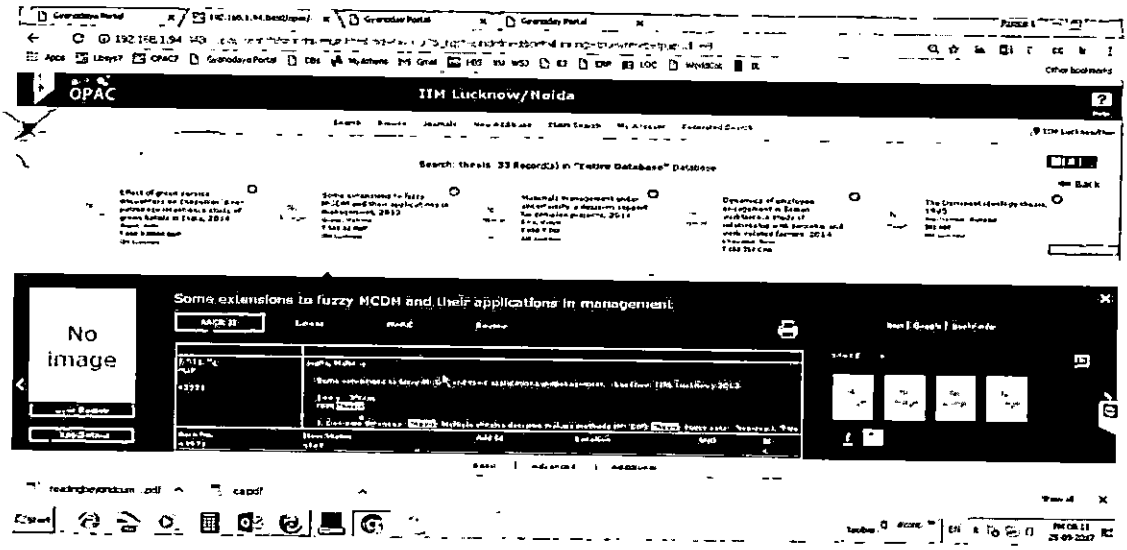


Exhibit 20. WebOPAC interface for theses and case studies

16. Atmospherics

For providing healthy reading environment and to enhance readership in the library, this knowledge bank contains all necessary and advanced features as- this library offers 24x7 reading area (Exhibit 21), this library is fully air-conditioned, this library has installed RFID facility (Exhibit 22) for an easy lending of books, proper light facility, appropriate indicators & signage's, pure & chilled water facility, excellent & comfortable furniture arrangement including research carrels for research scholars, juvenile furniture for its juvenile library members at Children Section, reprographic facility, audio-video lab facility, video conferencing facility, seminar hall and other suitable facilities.



Exhibit 21. Reading area at Gyanodaya Library



Exhibit 22. RFID Gate @ Gyanodaya Library

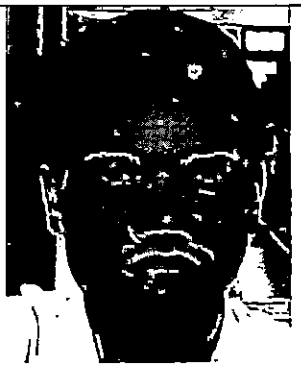
17. Conclusion

Libraries aim is not making profit as like in other organization but the application of marketing in Libraries certainly improve the services of Library and maintain a good status of Libraries. Marketing is a better way to know the requirements of the users and to achieve the goal of Libraries and parent organization. IIM library is applying marketing concept in their services and products very well. In other libraries of India there should be systematic application of marketing concept and overcome the barriers in the way of marketing. The Govt. and parent organization should inspire the Libraries in application of marketing of information services.

Bibliographies

1. Hasan, N. & Azim, M. (2017). Paradigm shift in Resources, Services and Products: A case study of Maulana Azad Library System, AMU Aligarh. *MANLIBNET International Conference on Library Technologies, Services & Resources: Current global trends.*
2. http://www.iiml.ac.in/ retrieved on 10-Oct-2017
3. https://www.inflibnet.ac.in/ess/eres.php?memID=347 retrieved on 09-Oct-2017
4. https://www.nirfindia.org/ManagementRanking.html retrieved on 10-Oct-2017
5. Khanchandani, V., & Hasan, N. (2016). Marketing of library resources, services and products: A case study of IIT Delhi. *DESIDOC Journal of Library & Information Technology*, 36(3), 158-163. Retrieved from http://publications.drdo.gov.in/ojs/index.php/djlit/article/view/9813/5601

Authors Profile



Dr. Mange Ram is did his M.A. ,M. Lib. & Information Science from Kurukshetra University, Kurukshetra, IDC (Integrated Diploma in Computer), , and Ph.D. in Library & Inf. Science. His research interests are User Studies, Total Quality Management in Libraries, Open Source software and Stress Management for Librarians. He has an administrative experience of 19 years. He holds membership of Indian Association of Special Libraries & Information Centers (IASLIC), Indian Library Association (ILA), Society for Advancement of Library and Information Science (SALIS), Haryana Library Association (HLA), Society for Information Science (SIS), Indian Association of Teachers of Library and Information Science (IATLIS) etc.

Dr. Mange Ram has authored 6 books (including one book published LAP-Lambert (German), 14 invited book chapters and 43 articles. He attended many National International conference, seminars and workshop etc. He is actively engaged in academic work of many reputed universities. He is also Managing Editor of JLICT (UGC Approved Journal) published Online and Offline. He is the joint editor of International Journal of Library and Information Management (ISSN: 0975-878X). He is also editor of INTERNATIONAL Journal of Digital Library Services (IJODLS) ISSN: 2250-1142. Now he is working as Deputy Librarian & Incharge at Dayalbagh Educational Institute (Deemed Univ), Agra (Taj City) INDIA.

E-mail: mram72ster@gmail.com



Ms. Simran Gupta is working as Professional Assistant at the Education Faculty Library of DEI (Deemed University) Agra. Prior to joining DEI, she worked as Research Assistant Library at Gyanodaya Library of IIM Lucknow. She also worked as Library Intern at the Central Library of IIT Delhi before joining IIML. She holds the bachelor degree in Art, Bachelor of Library & Information Science, Master of Library & Information Science and PGDCA. She is a recipient of Gold Medal for being a topper in B.Lib.I.Sc. She has participated and involved in various national and international conferences, seminars and symposiums. Her realms of interest are- Digitization (she worked in the ETD project of IIT Delhi), virtual reference service, marketing of LIS products, e-resource management, and IR.

Email: proficientsimran111@gmail.com

Preservation and Promotion of Library and Information Services in Social Era

Mohit Gupta

Student
DLIS, Bundelkhand University Jhansi , India
mohitg1407@gmail.com

Vinay Pratap Tiwari

Student
DLIS, Bundelkhand University Jhansi, India
vinayprataptiwari@gmail.com

Chanchal Rai

Student
DLIS, Bundelkhand University Jhansi ,India
Chanchalrai995@gmail.com

Abstract : One of the challenging task for the libraries has to promote and preserve their services and Information for long time by increasing their no. of patrons. Now-a-days social media is being very popular among the patrons throughout the world due to the easiest way to connect with each others. Social media is playing vital development of libraries and providing a portal to discuss and to disseminate the information. A large audience has connected through the social media that increase the area of library services and also being a medium to avail the library services globally. So to go with the main stream of ICT (Information and Communication Technology) Era libraries should also go with the social trends. The Social media has a big list of advantages for library services but these depend on some factors for making promotion successful like good content, know the audience, consistency in posts are being discussed in paper. Social media can also be used for analytical purposes and to user study.

Keywords: Social Media, Social Library Channels, Channel Guidelines, Facebook, Instagram, YouTube, Social Preservation.

1. Introduction

Development of social media and its services has changed the whole online world dramatically in some past decades. Social media is not a new approach or channel, In the early days of web in 1990s classmate.com was started and then my spaces in 2003 based on these two site it can be noticed that social media is about to

twenty years old .This is one of the best tool and service of web 2.0, where users not only can get information but also can generate as well as share. Social media channels are creating a dynamic environment on the web, almost every major as well as minor both type of organization, business or brands are using the powerful social channels to promote their services. Since the user of social networking sites are being increase rapidly (fig.1), there is a huge amount of information has been being published on the social media and this is also being used by a large number of libraries around the globe to broadcast, share and to disseminate the information. Libraries are promoting, their services to the users and also to the non users.

These social media channels provide a unique platform to library where every social site user can get updated with library that provides a boundary less and unrestricted platform. Since libraries play a vital role in providing formal as well as informal education the powerful social channels can help them out to accomplished their service and these channels also can be used as medium of preservation of frequently ask question , request and of the broadcasted information.

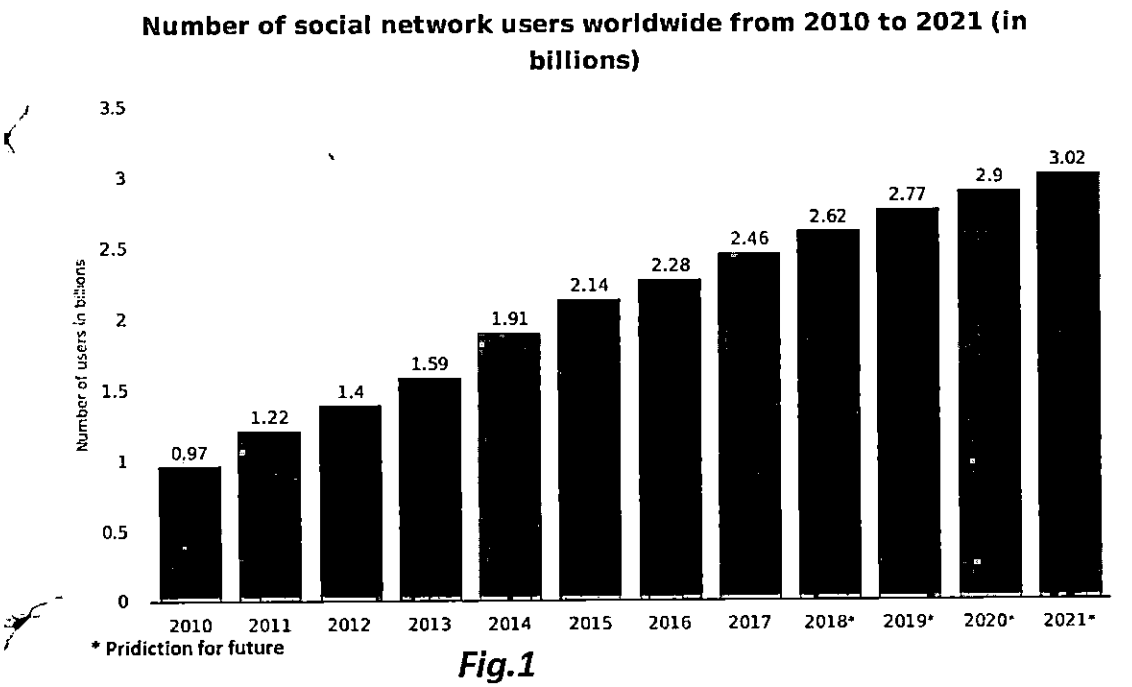


Fig.1

2. Why Social Media In Libraries?

The primary objective of any library or any information centre is to provide, promote and preserve these collection online as well as offline. The social media channels are currently being very popular among youth and over 3 billion people will be connected by these channels. Since Dr. S.R, Ranganathan says in his five laws of library science that "Library is a growing organism" so library should also get updated with all the services in present and with the emerging technology to provide an easy, quick reliable dissemination of information. These technologies also help in implementation of five laws of library science. Social media captured a major part of web and day by day being rapidly increased. Library always focused on providing services to the maximum persons since libraries are social institution.

Now-a-days a majority of patron uses social networking channels to be get updated from there surrounding so all the brands and organization giving importance to it and like others library should also get into it. We can summarize the needs of social media and the social networking channels in following five points.

1.-***Observing:*** Social channel provide a way to observe the need and the general trends. Providing a # tag, post, broadcast, by creating groups, through library page or library's instant massaging app You can observe what the patrons demands and currently in trends, that assist in making plans according to current needs. So observing is one of the best practices for planning.

2:-***Connecting:*** One of the main aspects of many people to use the social channels is to get connect with the people whom they want to know. People also used social channel for publishing their views, thoughts and other event. They comments on the broadcasted post of the various pages of corporate users. Libraries should have create a page on these platform as well as create an account on instant massaging apps through the page library can post the stuff and when user follow the page by subscribing or liking they will get an notification when library upload any information , then it will established a connection between user and library.

3:-***Openness:*** Social platform are open platform any person at any age from anywhere can follow the library page and get update with the library so this will help the library to make the users in every location, because of the rapid increments in user of the social media channels. Everyone who uses internet, is approached social networking directly or indirectly through absence.

4:-***Suggestion :*** Social channels provides comments section for the user to

express their opinion, So library can utilize this feature for taking feedback or suggestion on books acquisition and regarding, services, many library of the world are practicing it.

5:- **Mobile** :- According to statista.com a statistics analyses site, there were more than 4.61 billion mobile users s and 2.1 billon users of smart phone in the year of 2016 around the world . Now-a-days people love their smart devices very much instead of desktop and other gadgets. So that mobiles help the library for the instant delivery of information.

3. Social Media Channels

There is a big list of social networking site and many of them have different feature that makes them unique form other. Some of them are being describe below

1. Facebook: - Facebook is one of the most popular social media platform among the users, facebook has the largest number of users among the other social networking site as shown in fig 5 and has the biggest user database. Facebook allow user to create, share like and comments feature; Users can upload their photos, video, textual post etc. Facebook seems very popular among libraries throughout the worlds, libraries are posting their various activities, like asking users for feedback and also conveying their message to the Facebook users as in fig2 in which New York Public Library providing information user with library card. Facebook is a free platform but for promoting the page to increase the number of likes and the popularity they have to pay Rs. 332 to Rs1327or US$1 to 10 according to gaining the like, here you can filter the user by their age and sex wise. Facebook provide, Facebook audience insight and Facebook page manager for analytical purpose of the page to monitor the post, page and the users and their approach. Facebook is also a medium to preserve and to promote the rare materials, events etc, as this being done by Punjab digital library in fig 3.



Fig. 2



The great antiques heist in Punjab

CHANDIGARH:While digging a mound, a 10-year-old girl discovered a stone sculpture at Mand Khera village in Sangrur in 1980.

TRIBUNEINDIA.COM

Fig. 3

4. YOUTUBE

YouTube is the second largest popular search engine, that is a social video serving platform of Google. YouTube provides a platform to the users where they can upload their video and can reach to their audience , YouTube also provides many features such as , like, unlike , comment and subscribe option to user. If a user subscribe channel and enable to get notification then whenever channel upload any video subscriber will get a notification. Here libraries can create their channel and upload the videos of many activities that are being performed by them like social , events, virtual tour and history of library (as by library of congress) in fig.4

They will be created at once and then accessed by any time but here library have to pay some attention on colour scheme, videos/audios quality and ensure that the fifteen second should be interesting. Youtube provide analytics in the form of view, comments like and the subscribe.



The Library of Congress Is Your Library
34 587 views

Fig. 4

LibraryOfCongress
Published on Mar 12, 2015

SUBSCRIBED 65K

An overview of the history of the Library of Congress.

For transcript, captions, and more information, visit http://www.loc.gov/today/cyberlc/f...st

SHOW MORE

5. WHATSAPP

Whatsapp is different from others ,this is a social platform but here audience is limited and your account can't be accessible to others but through WhatsApp you can disseminates the information rapidly and also can observe the needs of library user by creating different types of subject group and the feedback since WhatsApp hold a big share of social networking platform so we can't deny it.

6. TWITTER

Twitter is a social networking platform that provide user to type only written in 140 letter . And user can attach video, photo with the post. Twitter provide a powerful action of tag and to search any post. So while posting library should also make an appropriate and that increase the number of followers of library. Twitter provide analytical to analyze that content, number of favourite, tweets, retweets and replies.

7. INSTAGRAM

Instagram now a part of Facebook since it is purchased by Facebook, provides a platform on which user can share their photo , video. Instagram may be very useful for library if library post the regular picture of event, study rooms or about any new and interesting book that can create the influence among the instagram

user to follow the library page and to visit the library to get in touch with all events and to study. Instagram does not provide any analytics but you can measure it by number of likes, comment, view on video file. Analysis can also be performed through external software. After creating an account on instagram it must be checked that the accounts in public mode not in the private, so user can check the stuff that is uploaded by library.

8. LinkedIn

LinkedIn is a business focused platform where professional user shares their resume and past job history. Library can also use LinkedIn to be got connected with the professional community but library should remember the every post on LinkedIn should be professional in proper manner or sound like that.

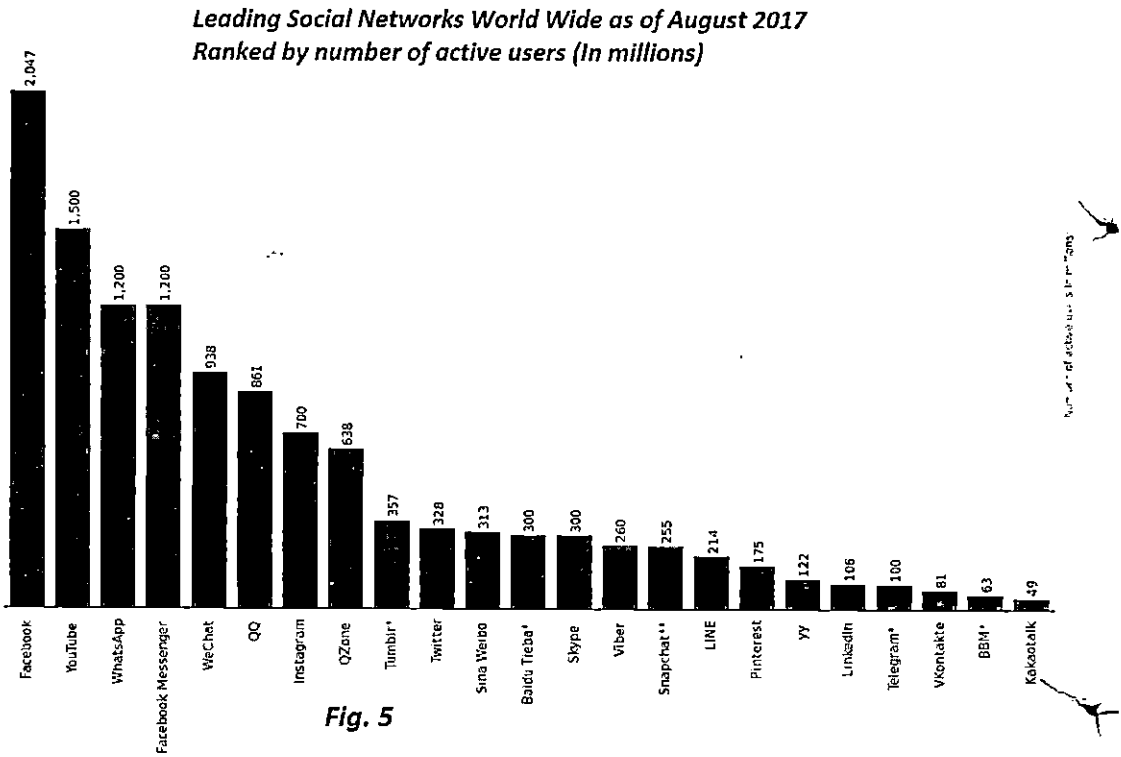


Fig. 5

9. Guidelines to setup a Social Channel for Library

No matter a library how much big or small every library can promote their services via social platform (Facebook, Twitter, Blogger etc.)without paying a single penny.

Here are some guideline to set up a library channel and towards content are being discussed below

- A library page should have an profile picture that can be logo of the library or it's building that will help the user to recognize the page. Page should also have a cover picture that can be from inner stack view of that library or the building.
- Library timing, address and other contact detail should be mention on page.
- The content of the channel is king because the patrons is following the page for the content of the page that should be well enough to describe not so much lengthy or not so short.
- Regular publishing of post, it is noticed that many organization create their social channel first they post much content but after some time they losing their continuity as the result of it, they also loses their followers.
- Content should be relevant, helpful for the humans and in a joyful manner so that increase the interest of user.
- While posting or broadcasting any message library should encourage the user's participation through comments and messages.
- Library should also monitor the comment and the feedback of user and provide them, their answers that increase their faith and interest.
- A list of event should also be posted on channels and on Facebook, library should fill up events, feature to notify the users in a better manner.
- Library should post their photographs of events hosted by library e.g. exhibition, book fare etc.
- There should be a small social media team to regular monitor the content, comments and to post the stuff.
- While posting a video on YouTube channel, library should give their name on the first and the last frame of video and on the photographs the footer note of libraries name.
- Every post should be published by remembering that who is our audience

and for whom we are publishing.

- After creating page library should promote his page online by website as well as offline by notifying there user through pamphlets and verbally.
- In case of publishing a copyrighted stuff take prior written information from concerning body to publish.

Preservation and Marketing:

These channels can be used to preserve the library's material which is being provide through social media e.g. if a video of any event or audio-visual form lectures that library have in C.D. or D.V.D. form are published on YouTube channel that can be retrieved by user whenever they want that can be accessible from anywhere of the world end that increase the popularity of the library and stuff would be preserved for a longer time.

Like any other organization library can also promote and marketise there various activities without paying a single penny but if library want to provide add like promoting then the social networking host charge some money for promoting the page in order to gain likes.

10. Conclusion

Now-A-Days the first approach of users is to get information and every service on their finger tips so to fulfil this requirement of users every organization is promoting themselves online where social networking channels are the most popular because these are most popular among youths, so libraries are also moving towards this way of promotion and getting good results. Libraries always believe ion users' satisfaction that's why library change and accept every emerging and the technology wh'ch is useful for users, so social channels should be adopted by library to provide a better, and reliable way of communication.

References

1. King, David Lee. "Managing Your Library's Social Media Channels." *Library Technology Reports* (Ameerican Library Association), January 2015: 5-35.
2. Pal, AMIT KUMAR, VP KHARE, MOHIT GUPTA, and VISHAL CHAWLA. "SOCIAL NETWORKING SITE: A PRESENT SCENARIO, CONCERN &
3. INTROSPECTION" Impact : International Journal of research Arts And Lit-

erature 5, no8 (2017) :1-8

4. Das, Biswajit, and Jyoti Shankar Sahoo. "Social networking sites-A critical analysis of its impact on personal and social life." *International Journal of Business and Social Science* 2, no. 14 (2011).
5. Bernard, Phyllis E. "Bringing soul to international negotiation." *Negotiation Journal* 25, no. 2 (2009): 147-159.
6. "Most famous social network site ." *Statista* . https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/ (accessed October 6, 2017).
7. "New York Public Library." *Facebook.* https://www.facebook.com/nypl/ (accessed October 8, 2017).
8. "Number of global social media users ." *Statista.* https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/ (accessed January 6, 2017).
9. "Punjab Digital Library." *Facebook* . https://www.facebook.com/Panjab-DigiLib.org/ (accessed October 8, 2017).
10. "The Library of Congress Is Your Library." *YouTube.* https://www.youtube.com/watch?v=63Ze_bpATac (accessed October 8, 2017).

Authors Profile



Mr. Mohit Gupta is a student of M.Lib&I.Sc from Bundelkhand University, Jhansi. He has done B.Sc in Maths, Statistics & Computer scince in the year 2016. He is gold medalist in B.Lib&I.Sc examination in 2016-17. He has attained many National and International conferences and contributed 10 Scholarly articles in journals and conferences. He got a best paper award in NCTL-2017 organized by BABAU, Lucknow. He developed a mobile app and website for Central Library, Bundelkhand University, Jhansi.

E-mail: mohitg1407@gmail.com



Mr. Vinay Pratap Tiwari is a student of M.lib & I.sc from Bundelkhand University, Jhansi. He has done B.lib & I.Sc from the Bundelkhand University in 2016-17.

Email: vinayprataptiwari@gmail.com



Ms. Chanchal Rai is a student of M.lib & I.sc from Bundelkhand University, Jhansi. She has done B.lib & I.Sc from the Bundelkhand University in 2016-17.

Email: chanchalrai995@gmail.com

Public Libraries of Lucknow: A Boon for Academic Community

Dr. Subhash Chandra

Asst. Librarian
M.J.P. Rohilkhand University, Bareilly-243006
E-mail: s73chandra@rediffmail.com

Abstract: For the dissemination and promotion of the knowledge and information to the common person, libraries play a very significant role that is why Public Libraries are existed in the Lucknow city. This paper discuss the concept, functions, shortcomings of the public library, Uttar Pradesh Public Library Act, etc. in the present situation.

Keywords: Academic community, Public libraries, Uttar Pradesh Public Libraries Act, Lucknow.

1. Introduction:

Libraries are the major sources of providing equal, safe and reliable access to information. It is a community centre for constantly transmitting knowledge to individuals. It is an important hallmark of a developed society and works as a catalytic agent to propriety. The development of the institution of library is a natural and logical outcome of corresponding developments in different spheres of human knowledge [(1)].

A public library which is very often called a "peoples' university" is a democratic institution operated for the people by the people that conserves and organizes human knowledge. The scope or command of a public library that meets not specific but general requirements of the public thus remains quite broader in its vision. It differs from the other types of libraries in that by offering opportunities of informal self-education it inculcates reading habit amongst all types of general readers and, as a consequence, maintains a sizeable collection of light literatures, i.e., fictions, novels, story books, etc., for recreational studies, and a children's corner equipped with juvenile literature.

2. Concept of Public Library:

A public library is a library that is accessible by the general public and is generally funded from public sources, such as taxes. It is operated by librarians and library paraprofessionals, who are also civil servants.

4. Chakrabarti, B . (2005). Concepts of community information service in the West and India. In Goon, A. M., Sengupta, S., Ganguli, S. & Ghosh, A. (eds.), Sen, S. K. (executive ed.). *Politics, culture and society : collection of essays in memory of S. M. Ganguly. (pp. 279 - 291).* Kolkata : New Age Publishers.
5. Abu, R. Grace, M. & Carroll, M. (2011). The role of the rural public library in community development and empowerment. *The International Journal Of the Book, 8(2).* Pg. 63 – 74. Retrieved September 30, 2017 from https://codeethiopiadigitalbooks.files.wordpress.com/2014/08/rolecommunitylibrary.pdf
6. IFLA/UNESCO public library manifesto. (1994). Retrieved May 15, 2015 from http://archive.ifla.org/VII/s8/unesco/eng.htm
7. Merriam Webster. Retrieved September 30, 2017 from https://www.merriamwebster.com/dictionary/community?utm_campaign=sd&utm_medium=serp&utm_source=jsonld

5. To find the areas of library services to be improved or upgraded.

3. Methodology

In this study a questionnaire was prepared and data was collected through it. The questionnaire was designed in a user friendly way so that users may feel free while giving the information. The only motto of designing the questionnaire was to collect the real time and the correct information about the library and the services. And the questionnaires were distributed to the secondary and Sr. secondary students of both of the schools.

4. Data Analysis:

1. **Usefulness:** First point was the usefulness of the library services to the students.

Tabulated data about usefulness of library services Kendriya Vidyalaya. The questions were asked to the students of Kendriya Vidyalaya in relation with the services provided by the school library. The below data table shows total 412 responses were received.

Table 1.1 (Source; Primary)

S.No	Library services	Very Useful	Useful	Not useful	Total
	Circulation services	15	24	3	42
	Reference services	14	22	5	41
	Abstracting & indexing services	9	21	10	40
	Bibliographic Services	23	16	3	42
	Audio Visual service	20	19	3	42
	Internet Services	22	11	7	40
	Inter Library Loan	16	16	10	42
	Reprographic Services	14	21	6	41
	Translation services	24	13	5	42
	SMS Alert services	10	17	13	40
	Total	167	180	65	412

Tabulated data of usefulness of library services to the students of Delhi Public School, the same questions were asked from the students of Delhi Public School and total 615 responses were received as below:

Quality Service Of State Central Public Library Arunachal Pradesh : A Case Study

Joram Tayam

Government College Doimukh ,
E- Mail Joram Tayam@gmail.com

Abstract: The study aimed at investigating the user's opinion of services quality provided by the Central Public Library of Arunachal Pradesh. Survey study among library users was conducted, the study is based on materials available and personal interview with library professional. Findings of the study revealed that the Central Public Library of Arunachal Pradesh is offering quality of services up to the satisfaction for its users. Users were satisfied with different library services facilities including, library books, journals, dictionaries, encyclopedias, Internet services, special collection, periodical collections, reference service, adult education program, reading room facility, library environment, opening hours and attitude of library staff with the library users. Respondents demanded e-resources of information in the library and suggested that library should organise training programs for its users to make the better use of library services. Study concludes that the overall quality of services offered by the Central Public Library of Arunachal Pradesh is not much satisfactory.

Keywords: User's Opinion, Public Library, Central state Library, Arunachal Pradesh.

1. Introduction

Public libraries is social and community information institution were provide free formal and informal education to the community, In Public library is open for irrespective of users using information and resources facilities for the individual knowledge development. The Public library is democratic institution special information and resources for the peoples ,off the peoples and by the peoples. Public library are considered as "peoples University", play a very significant role in developing informational system for lifelong learning of the general public. Public libraries can access the global information by utilizing the virtue of information technology. Public library can provide access to the peer-reviewed online journals and help the individuals of the society in obtaining quality information for improving education, research and knowledge. Librarians working in public libraries can meet the new demands of the users by fulfilling their information needs in effective way (Haggstrom, 2004). Public libraries are crucial institutions for providing education. It is essential for adult education and improving literacy rate in any country (Akparobore, 2011). Public library is a cultural library that aims at satisfying the customer's information needs (Zhong, 2007). Public library

can develop quality services to fulfill the needs of target market. Public library through careful planning strategies can attract the attention of potential users by encouraging them to use the library services for their needs (Change & Hsieh, 1996). Public libraries can tailor quality information services to meet the information needs of its users. Public libraries can attract users with careful marketing and planning strategies to attract the potential users (Nsieh, 1997). The Central Public Library Arunachal Pradesh is regarded as a prestigious and historical institution of the City. It has a very fine building of classical Italian style of architecture. It was founded in 1924 by the Nawab Sir Sadiq Muhammad Khan Abbasi. It has three separate blocks for the users. The library possesses more than one lack collection of information to cater the information needs of the locality.

2. Profile of Arunachal Pradesh state.

Arunachal Pradesh the land of the down lit mountains .India's eastern most frontier is 84000 Sq.Km. in area with a population of 7,00,000. It touches the perpetual snow of the southern boundary of Tibet, right down to Brahmaputra river. The land mostly is hilly and great rivers and stream and natural forest. Erstwhile NEFA (North frontier agency) was renamed in 1972 as Arunachal Pradesh . The first Indian land to great the rising sun)It was union territory till January ,1987. On 20th February ,1987 it attained statehood (Ratan.T 1994).The public library service actually originated in 1956 when the capital of the state was at Shillong through establishment of the state Central library. which later on transferred to the present state capital. It is now situated at Itanagar (secretariat Complex).It is the apex body of the library services in Arunachal Pradesh. All the District libraries of Arunachal Pradesh are governed by the Central library (Ratan.T .1994).

Table No. 1. Number of public libraries in Arunachal Pradesh.

S/No	Name of Library	Nos. of Library
1).	State Central library.	01
2).	District Library.	16
3).	Divisional library	02
3).	Branch Library.	02
5).	Sub Divisional Library.	18
6).	Block library	26
7).	Circle library.	38
	Total	107

* Sources of data from Directorate of Public library Govt. of A.P

3. To study Significance role of central state Public library in the state.

Public libraries can play significant role in the development of information society in any state. Public libraries must build effective information services for satisfying educational and informational needs of its users. To provide effective information services, it is essential to measure the opinion of library users with quality of library services in order to ascertain that whether the library is meeting the diversifying information needs of its users or not. The instant study has been conducted to achieve this aim.

4. Objectives of study.

1. To investigate the user's Opinion of services quality of the Central Public Library of Arunachal Pradesh.
2. To ascertain the purpose of using library service and resources.
3. To explore the Problems faced by the users while using the library.
4. Method of study.

Observation research method was used by adopting survey research technique.

Study used literature based scrutiny and interview with library professional and personal observation and visited in the central library.

5. Descriptive study conducted.

Descriptive study s were applied to measure the degree of responses and to reach the results. Review of Related Studies Investigating user's perception regarding quality of library services is a fine tool to examine the role of library in providing effective information services to its user. It provides feedback for library administrations to evaluate library services and bring necessary improvement in its services if necessary. Given section provides the review of different studies conducted to measure user's satisfaction with different services provided by public libraries in different countries.

Iwhiwhu (2012) studied the users' level of satisfaction with public library of Edo State. Results indicated that respondents were not satisfied with information resources provided in the library. They did not show their satisfaction with the

availability of text books, journals, CD-ROM services and other recreational materials available in the library. Study found that the library is not achieving its objectives in satisfying the information needs of its users. Findings revealed that users were satisfied with other than literary services provided in the library such as sitting plan, library space, air condition, photocopier service, lighting in the library, circulation and computer services. Nzivo (2012) examined the public library system and information services in Kenya. Study used Survey technique questionnaire as a tool to collect data. Majority of the respondents were students (64.3 %) while other were administrator, businessmen, lawyers, accountants and information officers. Findings showed that OPAC of the library is

widely used by the users to find the information, they were using library catalogue (15.2 %). Results also indicated that respondent's satisfaction with library services was (69.3 %). They were utilizing internet facility (63.3 %). They regarded the computer services in the library as very good (84.2 %).Islam (2012) conducted focus group discussion to evaluate the library services in northern districts of Bangladesh. Study also highlighted the information needs of rural community. Respondents mentioned that they need information for education, health care, food and nutrition, family planning, agriculture information needs such as information about weather, soil, seeds, fertilizers and pesticides. They mentioned that they also need information about cultivation of vegetables and dairy development. They described that in leisure time they visit their neighbor or friends. They pointed out that they like to read books on poetry, text books, and books on religion, agriculture, poultry, biography and livestock. They were aware of the rural library services and use library for finding needed information. Pors (2010) analyzed the services for citizens by public libraries in Denmark.

Study found that the library staff working in public libraries of Denmark welcomes the new work tasks. Library visitors in Denmark public libraries appreciated the provision of new services. They utilize the new services for acquiring required information. Manjunatha and Shivalingaiah (2004) measured the customer's perception of service quality in libraries and found that customers of the library expect that library should offer good resources and services. Study found that the satisfied customer brings more users to the library. Study concluded that there is a need of leadership qualities in library staff for promoting library services to the customers. Gallimore (1999) overviewed the challenges faced by public library managers and found that the change with the library science profession has changed the responsibilities of public library managers. Due to this change public library managers are facing issues such as use of technology in libraries, staff and services issues. Data Analysis and Interpretation .

6. Present scenario of central state Public library service in state.

As study conducted in the public library of Arunachal Pradesh regarding quality service in observation most user visited in library gender wise of male more then female less user as compare. There are three different type of Library Users including students, researchers, govt. servants and users from different occupations were visit in the Central Public library in state. However, students were more majority. Frequency and frequently visiting of User's Percent of the Student, Researcher, Professional, occupation Govt. Servant etc. The purpose of library Use were to inquired, reading news papers etc. Majority was using library for general readings. There were also using the library for their research work, entertainment and career development. Gender Frequency Percent and Purposes of using the Public Library Information Sources used by Users. A different type of library resources were provided to the user and they were asked to mention the frequency of their usage. The frequency use library books, journals, dictionaries, encyclopedias, Internet service, govt. publications, yearbooks and media/T.V/ Radio etc. The maximum information sources of the library used by Library Users. User has less frequently visited Using Public library .It shows that library is offering less quality services. How often do you use the Library? Always Satisfaction with Library Services User's satisfaction with library services should be the prime goal of any library. It is find that users that they were not much satisfied with circulation services, reference services, special collection, Internet facility, reading rooks facility and newspaper/magazine Purpose Frequency Percent, General Reading, Research work ,Entertainment ,Career Development, Information source .Book Journal Dictionaries Encyclopedias Internet Govt. Publications Newspapers/ Magazines Media/T.V/Radio Year book /Annual Report services. It was found that library should improve digital collection services and adult education program as the respondents were not fully satisfied with these services.

Satisfaction with Library Services user's Opinion about different Library Services & Staff different library facilities were evaluated in the light of user's opinion. They agreed that library collection is adequate and organized, library environment is conducive, there are recreational facilities for children, it conducts seminars, book fairs, computers are adequate, opening hours are convenient, membership process is easy, library staff is co-operative and competent, library keeps it users up-date regarding new development in their fields of interest. They were satisfied with the overall services provided by the state Central Public Library of Arunachal Pradesh. Opinion about different Library Facilities Opinions .Dev. Library collection is adequate for my needs. Library collection is well organized and easy to find. Library environment cooling, water, noise level,

lighting, cleanliness, is conducive Library provides recreational facilities for the children. Library arranges seminars, book fairs, and book exhibitions round the year. Library computers are adequate for my study needs. Library services Circulation Reference Digital Collection Special Collection Govt. documents Adult education program Internet facility Reading rooms facility Newspapers and Magazines facilities. (latest and old ones) , Library opening hours are appropriate for my study needs. Library membership procedure is easy Books borrowing procedure is easy and is users friendly. Library staff is co-operative, competent and helpful. Photocopying facility is easy for the users .The Library keeps me up-to date about the developments in my field of interest.

Over all most the user were not fully satisfied with the quality of Library services. Problems Faced by Library Users most of the users mentioned that electronic resources are not available in the library .Library should arrange e-resources of information for the users as they are interested in using e-resources. Some of the users mentioned that required information is not found and there is a lack of users training programs .Very few users complained against the lack of support from library staff .Problems Faced by Library Users Problem Frequency Percent required information is not available and non availability of electronic resources. lack of users training program about the use of library resources. lack of support from library staff

7. Problem face by central state Public library in the state :

1. The state central library are lacking infrastructure facilities, resources, human resources, manpower , work culture, none using ICT and apathy of the state govt and concerned authority.

2. The state Central Public Library of Arunachal Pradesh is offering not much good quality of services satisfactory.

3. The library users are partially effectively utilizing library services and visit the library frequently.

4. They are satisfied with different library collections and overall services provided by the library.

5. They are interested in utilizing electronic sources of information and demanded e-resources in the library.

6. They need trainings for utilizing the library more effectively.

8. Conclusion & Recommendations

Study concluded that the state Central Public Library of Arunachal Pradesh is offering good quality of services to its users as the library users were found satisfied with different library collections and services. It is plausible that the library users showed their positive perceptions about the quality of library services and were satisfied with overall services of the library. However, library should not offer electronic resources for the users as they are interested to use e-resources. Library should also offer training programs for the users in using different type of library services. Library should conduct seminar, workshops and user education programs to educate the library users to utilize library services for lifelong learning. Library administration should focus to organize special activities in the library to make the library as the centre for innovation, learning and cultural development.

References

1. Haggstrom, B.M. (2004). The role of libraries in lifelong learning. Final report of the 2.IFLA project under the section for Public Libraries. Retrieved: http://archive.ifla.org/VII/s8/proj/Lifelong-LearningReport.pdf
2. Akparobore, D. (2011). The role of public libraries in promoting adult education inNigeria.Retrieved: ttp://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1471&context=libphil prac
3. Zhong, H. (2007). Research on reader self-services in public library. Library
4. Management, 28(1/2), 101-106. Change, P. & Hsieh, P. Customer involvement with services in public libraries. Library Review, 48(8), 1996.
5. Nsieh, P.N.P.N. (1997). Customer's involvement with services in public libraries. Asian Libraries, 6(3/4), 242-249.
6. Iwhiwhu, B.E. (2012). Public library information resources, facilities, and services: user satisfaction with the Edo State Central Library, Benin-City Nigeria. Retrieved: ttp://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1821&context=libphil prac
7. Nzivo, C.N. (2012). User perception on library services and information resources in Kenyan Public Libraries. Library Review, 61(2), 110-127.

8. Islam, S. (2012). Rural library services: a qualitative assessment of information provision in selected rural communities in northern districts of Bangladesh. New Library World, 113(3/4), 118-138.

9. Pors, N.O. (2010). Citizen services and public libraries: an analysis of new services in Danish public libraries. New Library World, 111(7/8), 263-272.

10. Manjunatha & Shivalingaiah. (2004). Customer's perception of service quality in libraries. Annals of Library and Information Studies, 51(4), 145-

11. Gallimore, A. (1999). Managing the networked public library. Library Management,

Public Library and Community Information Service : A Study

Supriya Mallik

Librarian, Moyna College, Purba Medinipur, West Bengal, India
E – mail : mallik.supriya2011@gmail.com

and

Dhritiman Bhar

Librarian Modern Public School, Chandernagore, West Bengal, India
E – mail : dhrit9237@yahoo.co.in

Abstract : Information is considered as a basic input to all developmental activities. Due to information explosion massive amount of information generate every faction of time. It is very important to easy access to survive. But unequal access to information gives birth to the disadvantage community within the society. Members of such community have less information to perform their day to day activities and they also unaware of their rights and privileges. In this context Community Information Service is very essential for socio – economic development of the said community because a society cannot achieve its ultimate success avoiding the proper development of people of every section of that particular society. Public library plays an active role to disseminate information according to the need of the community to solve problems and able to aware about their social rights and privileges. But without proper planning and policies it is not possible to deliver effective CIS.

Keywords : Community Information Service, Public Library, Community Development, Public Library – CIS.

1. Introduction :

Information is very essential that every person need it for their day to day activities and also for their development. It empowers the society and through it cultural, social and economical growth and development is possible. Information is basic needs of human lives without it overall development of any community is not possible. Community Information Service attempts to provide various types of information for development of a community when formal channels are inappropriate or unavailable or the members of the community unaware about their rights or unable to acquire information related to survival such as housing, food, health, legal protection etc. It is the duty of Government to ensure CIS for development of the community, society and the nation. Public library is one of the important sources of information which can deliver right information, to the right

user at the right time. It always providing effective and efficient CIS to empower the community. Library bridging the gap between the information provider and information needs of the community.

2. Community Information Service :

Community is a body of people living in a particular place with having their common interest and common practice. According to Merriam Webster community is a a group of people with a common characteristic or interest living together within a larger society. Usherwood defines community in a comprehensive way that "any geographical community or neighbourhood will be made up of a number of communities definable by race, social class, or income group, employment, leisure interest, religion and so on, each with its own informal information network that has grown up without the help of librarians or any other information advice workers."

The term "Community Information" (CI) consist of two terms "Community" and "Information". Generally Community Information is one kind of information which is needed individually or collectively by the members of a community for their survival and growth. CI also helps the community to solve the day to day problems of a community as well as helps to its development. Community information provide information related to health, education, housing, finance, legal protection, employment, self – employment, agriculture, political, cultural, legal, fundamental rights, horticulture, Government programs, social welfare and many more which are very essential for overall development of a community.

Library Association, UK, describe Community Information Service as "services which assist individuals and groups with daily problem solving and with participation in the democratic process. The services concentrate on the most important problems that people have face, problems to do with their homes, their jobs and their rights." (Chakrabarti, 2005).

Simply it is said that CIS is the process to collect, organise, store and disseminate non – book and non – document information about the community resources for their development.

3. Need of Community Information Services :

In the evaluation process society can continuously change its nature from one stage to another and presently we are in the "Information Society". Without information we cannot sustain as human beings for a long term. Due to information explosion

a huge amount of various information generated in every fraction of time. This random growth of information divided our society into two groups such as "information poor" who have less information and "information rich" have much information. Lack of access to information members belonging to the information poor community become the disadvantaged group of the society. It also deprived from their development as well as to achieve certain standards of life.

In this context CIS is a very helpful tool to provide needed information to the under privilege community for their survival as well as to improve their standards of living in all respect. It also helps in socio – economic development of a community. It make aware the members of the community about their rights and about the changes around themselves.

4. CIS and India :

The concept of CIS coined in UK and USA during the Second World War time to cope up with the wartime problems. It is mainly established to provide various types of information related to employment, training, food, resettlement, education, legal helps, missing relatives, evacuation, etc.

In India CIS continuously practiced from the ancient time. The examples of India ancient CIS can be traced out from clay tablets, palm leaves, bhurja patras, edicts of Ashoka which disseminate information about the local events, taxation, penal sections, Royal policies, public policies etc. It is also found in ancient India that information flows in one generation to another generation in oral forms. Year after year people of India heard various types of stories from great epics, puranas, uponishad , folktales and also stories from Panchtantra. This tradition similar to modern term "Community Information Service" practiced in India for centuries when the term does not appeared in the West.

It is also found that at the time of Indian Revolution many societies and centres found mainly to disseminate information and inter exchange ideas in various fields. Modern Indian thinkers like Raja Rammohun Roy, Rabindra Nath Tagore, Swami Vivekananda, Mohandas Karamchand Gandhi strongly felt about the essence of Community Information Service.

Now a day this task performs by the Central Government with the alliance of State Governments, NGOs and also some voluntary organizations. Government already took different initiatives for empowering the community by providing needed information.

Recently the Government of India started a $17 billion project to build a

"National Optical Fibre Network" (NOFN) which will connect India's all gram panchayats or village level governments within three years. The vision of this project is to create ICT infrastructure like high speed internet at gram panchayat level, on-demand availability of government services like health, education etc. and digital empowerment of citizens through digital literacy. The "Dgital India" program will be implemented in phase from current year till 2018. The main focus of this program is to cover 50,000 gram panchayats this year, 100,000 next year and remaining 100,000 the following year. The work on "National Optical Fibre Network" will be completed within 2017. Ravi Sankar Prasad, Minister of Communication and Information Technology said that "The entire country will be covered by broadband within three years and the internet will reach the remote villages." The government will create an enabling platform that will aid in delivering government services to citizens well as services in education, healthcare, entertainment and e-commerce. The government also conduct 20hours e-literacy training program in local languages in 200,000 community service centre across the country with the conjucation of state governments. (Bhar, 2017)

The main focus of this mission is to provide needed information to make the lives of the citizens better and it can facilitate to construct a well developed great nation. The policy makers better understand that social transformation can only be achieved if people are fully aware of their rights and privileges.

5. CIS and Public Library :

According to the IFLA/UNESCO Public Library Manifesto 1994 "The public library, the local gateway to knowledge, provides a basic condition for lifelong learning, independent decision- making and cultural development of the individual and social groups. This Manifesto proclaims UNESCO's belief in the public library as a living force for education, culture and information, and as an essential agent for the fostering of peace and spiritual welfare through the minds of men and women. The public library is the local centre of information, making all kinds of knowledge and information readily available to its users. The services of the public library are provided on the basis of equality of access for all, regardless of age, race, sex, religion, nationality, language or social status. Specific services and materials must be provided for those users who cannot, for whatever reason, use the regular services and materials, for example linguistic minorities, people with disabilities or people in hospital or prison. All age groups must find material relevant to their needs. Collections and services have to include all types of appropriate media and modern technologies as well as traditional materials. High quality and relevance to local needs and conditions are fundamental. Material must reflect current trends

and the evolution of society, as well as the memory of human endeavour and imagination." (IFLA/UNESCO, 1994) Library is a social non – profit organisation. Public library collect, organise, store and disseminate information to serve the information queries of the community. It is also a channel of informal education and always supports lifelong learning.

Public Library is providing a focus for cultural and artistic development in the community and helping to shape and support the cultural identity of the community. It collect, repackage information and provide it in suitable form as per the prerequisite of the community. It also stores those information for future use and update its databases time to time.

All the policy makers, thinkers, library activists realize the importance of public library services in the domain of community information service. Public library provides information to all the communities of the society regardless of race, sex, education, age etc. A well planed library and information system disseminate information to all sections of the people. Public library also empowers the society through its library services and helps the community to solve their day to day problem.

National Policy on Library and Information System in India recommended that "the most important task before the Government is to establish, maintain and strengthen the free public libraries in the country and enable them to work as a system. The main thrust in this area should go to the rural public library. A village or a village cluster with an adequate population should have community library, which will also serve as an information centre. Resources of different agencies engaged in the work of public health, adult education, local self government and such others may be pooled to build up this composite centre." (Chakrabarti, 2005)

6. Recommendations :

It is identified that public libraries bridge the gaps between "have" and "have not" by providing information to the under privilege community according their needs. Public library is the best organization to provide CIS. Therefore efforts should be made by all concern to help public library to serve an effective CIS. There are some recommendation to provide effective CIS which are as follows :

1. Make an area profile through which one can easily identified all the communities of a particular locality. Also make an user profile which became very helpful to identify the information need of the user.

2. Identify the information need of the community on which CIS can be designed and developed time to time.
3. Procure all types of information sources such as pamphlets, leaflets, newspaper cuttings, charts etc. which can be helpful to disseminate community information.
4. The procurement of the collection should be based on local community need and all the documents should be up – to – date.
5. All the documents should be arranged in a systematic manner for easy retrieval.
6. All the public library should be networked to share their resources.
7. Libraries should linked with all information agencies such as Government, non – Government and experts to collect easily all the updated information from different fields.
8. Arrange training and development programs to provide effective CIS.
9. Library building should be specious and located within easy reach to the public.
10. Library should have adequate trained professional staff.
11. It should conduct library extension services such mobile library, storytelling, formation of reading circles, arrange library talk, book fairs, music festivals etc.
12. Library should have separate section for children with pictures, little magazines, toys etc.
13. Library should have the adequate space to arrange meetings of the community where they exchange their thoughts, ideas, understand each other, share their problems.
14. It should provide priority to the disadvantaged group of the society.
15. Library should arrange life skill programs so that community can able to develop themselves.
16. The libraries should develop special collections for the community according to their needs. The libraries should develop audio and video collections and organise audio-visual programmes for their benefit.
17. The relationship between library personnel and users should be increased through provision of constant interaction.

18. The library and information centre may encourage the people for their involvement in the socio-economic development projects in their leisure time.
19. Library should build "Local History" collection through which it provide information to community about their past, race, cast, information about that particular place as well as inhabitants of that locality.

7. Conclusion :

Community Information Service is now a very important issue. Public library collects information from different sources, store and prove it to those members of the community who are unable, unwilling or unaware about the information. It is the responsibility of the librarians and library professionals to provide proper guidance and service to the community to achieve their information and solve their day to day problems. Government(s) should have the responsibility to make policies for libraries and information centres, revised continuously and take necessary changes of those policies for better Community Information Services. Provide necessary trainings to the library professionals and information centre workers to accelerate the CIS in effective manner. It also essential to think about the communities live in the interior part of the rural areas those are deprived from the basic needs of the life. We cannot able to build a developed nation if all the people are not fully aware of their rights and privileges.

References

1. Bhar, D. & Mallik, S. (2017). *Digital divide to digital India : vision 2020.* (unpublished book chapter).
2. Majumdar, K. (2016). Community information services through public libraries and information centres : an experience in West Bengal, India. *Qualitative and Quantitative Methods in Libraries,5.* Pg. 797 – 804. Retrieved September 25, 2017 from http://www.qqml.net/papers/December_2016_Issue/544QQML_Journal_2016_Majumder_797-804.pdf
3. Satpathy, S. K. *Community information service (CIS) through public libraries : a realistic approach.* Retrieved September 25, 2017 from https://core.ac.uk/download/pdf/11880591.pdf

Reading Habits of Newspaper among the Engineering Students and Academic Staff: A Survey of Jahangirabad Institute of Technology, Barabanki

Nazia Salauddin

Librarian Jahangirabad Educational
Trust Group of Institutions Jahangirabad
Fort, Barabanki UP
nazia2710@gmail.com
nazia2710@rediffmail.com

Abstract: Reading activities has always been seen as an important element in a person's culture and education. The academic library is attached the academic institution it serves to user community towards readings and the main client are composed of students and academic staff. The library resources and services are the mirror of the academic goal of the institution and meet the information needs of their users. This studied reviewed focus on the activities engaged in by the academic community in their leisure time, the kind of newspapers they read. The role played by institutional library in developing the newspapers reading habits of the students and academic staff are also been given due importance. In this paper researcher are analyzing and indicate that the purpose of reading newspapers, preference of language, timing they are spending, newspapers reading is necessary to help readers requisite information and meet their information requirements among students and academic staff in Jahangirabad institute of technology, Barabanki.

Keywords: Reading Habits, Users Study, Newspapers,

1. Introduction:

Reading has been the passion of the greatest personalities of all times. Humans have been reading since ages and thus words of knowledge have been passed on through generations. The reading habit influences in the promotion of one's personal develop in particular and social awareness regarding the different field. Regular and systematic reading sharpens the intellect, refines the thoughts, emotions elevates tastes and provides perspectives for one's living : and their by prepare the person for an effective participation in social , religious cultural and political life. Reading fires the imagination of person. It add sight of eyes and new wisdom to mind. Newspaper help to improve the reading habits and improve the concentration power for students in all area of specialization. India is a developing with ethnic communities who wish to live together. The Efforts to solve the socio, economic and ethnic problems in our country. Reading and library use habits has a vital role to set up the multicultural structure in our country.

Newspapers help to improve reading habits, knowledge, and awareness. They can be part of good study habits for readers in any area of specialization. India is a developing country with many ethnic communities who wish to live together. Efforts to solve cultural diversity and adaptation problems should be multi-dimensional and long term. Reading and library uses habits have an important role in building the multicultural and diversified structure of a country.

2. Some of the benefits on reading habits:

Reading them helps reader improve his vocabulary in communication and writing. Since one comes across new words, phrases etc. Reader gets accustomed to use them in his daily language.

- Finding significant information in the area of specialization
- Keeping up-to-date subject information
- Getting social integration and current information
- Enhanced the communication skills of readers
- Facilitate cultural passing and adaptation.
- To develop the cultural diversity and intercultural relationship.

3. REVIEW OF LITERATURE

Research reveals that while teachers say they value reading as a leisure activity, many do not make personal pleasure reading a priority. Many are a part of a growing group of people classified as literates. Study of related literature implies locating; reacting and evaluating reports of research as well as report of casual observation and opinion that are related to the individuals planned research problems.

Scott (1996) [1] defined literacy as a "lack of reading habit especially in capable readers who choose not to read." In fact, in the study by Lesley, Watson, and Elliott (2007) [2] researchers expressed concern not just over the reading habits of preserves teachers but their behaviors that were more characteristic of "struggling" readers.

Nathanson, Pruslow & Levitt (2008) [3], Opine that the demands of teaching and personal life have caused teachers to abandon personal reading, one need only consider research conducted with preserves teachers to realize that there is little evidence of strong enthusiasm for reading among those preparing for a teaching

career and that teachers as a group do not have firmly engrained reading habits.

A study by McKool and Gespass (2009), [4] reveals that only about half of the teachers surveyed read for more than ten minutes a day in their free time. While these teachers advise parents of their students to read daily to their children, to allow their children to see them enjoy reading, and to talk about books with their children, it becomes apparent that many teachers do not take their own advice. There seems to be a dis connect between their "preaching" and their practice.

Reading is the ability to understand words contained in a document and make use of the knowledge for personal growth and development (Dadzie, 2008) [5], This implies making meaning out of recorded information either printed or non-printed in the life of an individual. People read for different reasons and purposes, some of which include for pleasure, leisure, relaxation, information and for knowledge.

According to (Ogbodo, 2010), [6] Parents send their children to school to learn. In the school, children are exposed to various experiences which influence their behaviour. Therefore, learning is a change in behaviour. Such a change is seen in their mental reasoning, physical growth, manipulative skills and development of values and interests. The change may be easy or difficult depending on the home and the school environment.

(Palani, 2012). [7] He believes reading is a process of thinking, evaluating, judging, imagining, reasoning and problem solving. Reading is an essential tool for knowledge transfer and the habit of reading is an academic activity that increases skills in reading strategies.

(Deavers, 2000). [8] Reading is an intellectual action which is possible only if a man forms a habit of reading and practices these from childhood. Reading habits, therefore, play a very crucial role in enabling a person to achieve practical efficiency. "Laws die but books never." Indeed, books are the most suitable medium through which knowledge is transmitted from generation to generation

Bhan and Gupta (2010) [9] conducted a research study on habits and academic achievement among the students belonging to scheduled caste and non-scheduled caste group. The results revealed that sex has no significant impact on the study habits and academic achievement of students.

Sohail and Andleeb. (2011), [10] conducted a survey to study the reading habits of the users of the Delhi Public Library, New Delhi. The finding state that the, purpose of reading, preference of language, form of library collection, assistance from the library staff in the use of resources and services is necessary to help users meet their information requirements. The results also opine that people are

unable to visit the library regularly due to lack or shortage of time and literature being mostly read by the users are magazines and newspapers.

4. OBJECTIVE OF THE STUDY:

The purpose of the study is:

- To be identified the language in which mostly users are preferred
- To explore the level of newspaper reading habits of respondents
- To know how much time they spend for reading newspapers
- To be identified the sources of the newspapers.
- To be identified that which newspaper are most read by the users
- To be identified which sections of newspapers are most read by users

5. SCOPE AND LIMITATION OF THE STUDY

The present study is aimed to analyses the reading habits of newspaper among engineering students and academic staff in the Jahangirabad Institute of Technology, Barabanki. This study is only focusing on engineering students and academic staffs that are include faculty members and administrative staffs in JIT, Barabanki.

6. METHODOLOGY

The specific objective of the paper is to study thoroughly the reading habits of the 21st century among engineering students and academic staff in JIT, Barabanki. Researcher treat cumulatively Faculty members and administrative staff as an academic staff, The students and academic staff aim to identify their reading attitudes, purposes, preferences and tastes. The data was collected using the questionnaire method. A total of 450 questionnaires were distributed among the students and academic staff and 414 filled in questionnaires were obtained from the respondents. Sufficient time was given to the respondents to furnish the information. Suggestions to improve the library service are also collected from the respondents. The data collected through questionnaire was and analysed, classified and tabulated by employing simple statistical methods.

7. DATA ANALYSIS AND INTERPRETATION:

The collected information is tabulated by using statistical method, table and percentage. The data analyses are given below:

Table 1: Newspapers readers participated in the survey

Sl. No.	Users	Distributed	Received	Percentage
1.	Students	340	282	(62.66%)
2.	Faculties	65	65	(14.44%)
3.	Staff	45	45	(10.00%)
Total		450	414	(100%)

Table 1 show that the volume of distribution and received questionnaire from engineering students and academic staff. 450 questionnaires were distributed among engineering students which includes 340 questionnaires to students, 65nos. to the faculty members, and 45 to the administrative staff. Out of these 450 questionnaires, researcher were received 414 questionnaires from the respondents are students 282 (62.66 %), Faculty members 65 (14.44 %) and administrative staff members 45 (10%) from the total sample.

Table 2: Language preference of newspapers readers

Sl.No.	Language	Students	Faculties	Staff	Total
1	Hindi	102 (24.63%)	60 (14.49)	45 (10.86%)	207 (49.98%)
2	English	46 (11%)	28 (6.76)	18 (4.34)	92 (22.1%)
3	Urdu	70 (16.90%)	20 (4.83%)	25 (6%)	115 (27.73)
Total		218 (52.53%)	108 (26.20)	8 8(21.25)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414

The data presented in table 2 shows the preference of languages while reading habits of newspaper among students and academic staff. Among 218 (52.53%), students are preferred Hindi language, 46 (11%) students are mentioned English language and 70 (16.90%) students are mentioned Urdu languages only at the time of reading newspaper. In the case of faculty members 60 (14.49%) are mentioned in Hindi language, followed by 28 (6.76%) are preferred English language, and 20 (4.83%) are preferred in Urdu language while reading the newspaper. In case of administrative staff member 45 (10.86) are preferred the Hindi language, 18 (4.34%) are preferred English language, and 25(6%) are preferred Urdu language while reading the newspapers.

Table 3: Time spent for Reading Newspaper

Sl.No.	Time spent	Students	Faculties	Staff	Total
1	Less than 30 Minutes	102 (24.63%)	60 (14.49)	45 (10.86%)	207 (49.98%)
2	30 Minutes to1 Hour	46 (11%)	28 (6.76)	18 (4.34)	92 (22.1%)
3	More than 1 Hour	70 (16.90%)	20 (4.83%)	25 (6%)	115 (27.73)
	Total	218 (52.53%)	108 (26.20)	88 (21.25)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414

Table 3, indicates the time spent for reading newspaper among students and academic staff in JIT Barabanki. Out of 414 respondents, 102 (24.63%) students, followed by 60 (14.49) faculty members and 45 (10.86%) staff members are spent less than 30 minutes per day to reading the newspaper. 46 (11%) students, followed by 28 (6.76) faculty members followed by 18 (4.34) staffs are spent 30 Minutes to 1 Hour time to read the newspaper while some readers are spent more than one hours for newspapers reading as 70 (16.90%) students, followed by 20 (4.83%) faculty members and 25 (6%) staff. It is evident from the above table, among all respondents, majority of readers are spent less than one hour to read the newspapers.

Table 4: Sources of Newspaper by readers

Sl.No.	Sources	Students	Faculties	Staff	Total
1	Individual subscription	71 (17.15)	23 (5.56)	45(10.86%)	94 (22.71)
2	College Library	174 (42.03)	20 (4.83)	18 (4.34)	263 (63.53)
3	College Hostel	37 (8.94)	3 (0.72)	25 (6%)	57 (13.77)
	Total	282 (68.12)	46 (11.11I	88 (21.25)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414

Table 4 shows the various sources of newspapers to read among students and academic staff in engineering colleges in JIT, Barbanki. Out of 414 respondents, 94 (22.71%) has mentioned they are subscribing newspapers individually, which includes 71 (17.15%) students, 23(5.56%) faculty members and 45 (10.86%) staff members. Library subscriptions are the most common source of newspapers for users. But 263 (63.53%) readers are pointed college library is the sources of newspaper reading, while 57 (13.77%) are mentioned the college hostels readings area are also the sources of newspapers. It clearly shows college library is the main source of newspaper readings among students and academic staff.

Table 5: Choice of Newspaper

Sl.No	Name of the Newspaper	Students	Faculties	Staff	Average of Readers
	The Times of India	216 (76.59)	32 (69.56)	55 (63.95)	70.03%
	The Hindu	65 (23.40)	36 (78.260	62 (72.09)	57.91%
	The Indian Express	32 (11.34)	21 (45.65)	22 (25.58)	27.52%
	Hindustan times	78 (27.65)	33 (71.73)	41 (47.67)	49.01%
	The Economic Times	210 (74.26)	39 (84.78)	68 (79.06)	79.43%
	Inquelab (Urdu)	158 (56.02)	26 (56.52)	47 (54.65)	55.73%
	Dainik Jagran	165 (58.51)	31 (67.39)	41 (47.67)	57.85%
	Business Line	62 (21.98)	15 (32.60)	55 (63.95)	39.51%
	Pioneer	110 (39.00)	28 (60.86)	64 (74.41)	58.09%
	Business Standard	143 (50.70)	19 (41.30)	53 (61.62)	51.20%

*Percentages do not always equal 100 due to rounding. n=414 (Responded were allowed multiple answer)

Table 5 show that the choice of newspaper reading among students and academic staff. The respondents are allowed to prefer multiple responses. Out of 414, Majority of the respondents (79.43%) is mentioned their first choice is The Economic Times followed by The Times of India is 70%, 58.09% are Pioneer, followed by 57.91% are The Hindu, 51.20% are Business Standard, 49.01% readers are Hindustan times, 39.51% are Business Line, 27.52% are Indian Express newspaper readers in English newspaper category. It clearly shows the "The Economic Times" newspaper is most preferred newspaper when comparing others English language newspapers. While in others local languages 57.85% are preferred Hindi daily as Danik Jagran and 55.73% are likes Inquelab newspaper in Urdu language.

Table 6: Choice of topics in newspapers

Sl. No	Newspaper Section	Students	Faculties	Staff	Average % of Readers
1.	Sensational News	215 (76.24)	59 (68.60)	18 (39.13)	61.32%
2.	Letters to Editors	235 (83.33)	52 (60.46)	41 (89.13)	77.64%
3.	Advertisement/ Classifieds	55 (26.59)	26 (30.23)	16 (34.78)	30.53%

4.	Education	92 (32.62)	15 (17.44)	12 (26.08)	79.14%
5.	Politics and Social	240 (85.10)	56 (65.11)	35 (76.08)	75.43%
6.	Cinema/Entertaining News	140 (49.65)	30 (34.88)	12 (26.08)	36.87%
7.	Sports	255 (90.42)	69 (80.23)	22 (47.26)	72.64%
8.	Book Review	68 (24.11)	29 (33.72)	19 (41.30)	33.04%

*Percentages do not always equal 100 due to rounding. n=414 (Responded were allowed multiple answer)

As per the table 6 indicates the choices of various topics in news papers are preferred by the students and academic staff are stated. Most of the newspapers readers 79.14% are preferred the education oriented news, while 77.64% are likes to read Letters to Editors is second preferred choice by respondents. 75.43% of the readers are mentioned politics and social oriented topics in newspapers. A very less average of the readers 30.53% are looks Advertisement/Classifieds columns in newspapers, while less numbers of respondents 33.04% are only likes to read book review in newspapers.

Table 7: Purpose for Reading Newspaper

SI. No	Purpose for Reading	Students	Faculties	Staff	Total
1.	To get up to date Information	71 (17.15)	18 (4.35)	15 (3.62)	104 (25.12)
2.	Update current awareness	154 (37.20)	15 (3.62)	40 (9.66)	209 (50.48)
3.	To know the social activities	37 (8.94)	8 (1.93)	14 (3.38)	59 (14.25)
4.	Finding significant information for academic	20 (4.83)	5 (1.21)	17 (4.11)	42 (10.14)
	Total	282 (63.29)	46 (9.90)	86 (16.67)	414 (100)

*Percentages do not always equal 100 due to rounding. n=414 (Responded were allowed multiple answer)

The table 7 indicates the reasons for reading newspapers among students and academic staff in JIT, engineering colleges. Out of 414 respondents, majority of 209 (50.48%) newspaper's readers are mentioned they are using the newspapers for updating current awareness followed by 104 (25.12%) of the readers are stated to get the up to date information while 59 (14.25) are reading newspapers to know the social activities and interesting to knows that only 42 (10.14) newspaper's readers are finding significant information for their academic.

8. FINDINGS

- Majority of newspapers readers 207 (49.98%) are spent less than one hour to read the newspapers.
- 94 respondents, only 22.71% has mentioned that they are subscribing newsp apers individually, which includes 71 (17.15%) Students, only 23(5.56%) faculty members and 45 (10.86%) are staff.
- The Economic Times newspapers are most preferred newspapers comparing to others English daily.
- Only 30.53% news readers are looks Advertisement/Classifieds columns in newspapers
- Majority of 209 (50.48%) of the respondents are mentioned they are using the newspapers for update their current awareness.

9. CONCLUSION

Newspapers are seems to be considered very important resource in the present era. Library users read newspaper to get the latest information about what is happening around. Newspapers are responsible for creating and generating reading habits among university students. This survey has been conducted to study the newspaper's reading habits of the users of Jahangirabad Institute of Technology, library. The analysis of the data reveals that quite number of people goes to the libraries even in the digital environment where technology has taken up a large slice of the available time of the people. But still they have newspaper reading habits and have a positive attitude toward newspapers reading. Almost all the objectives of the study have been fulfilled. This study helps librarians understand the importance of newspapers and improve the services related to newspapers.

REFERENCES

1. Scott, J. E. (1996). Self-efficacy: A key to literacy learning. *Reading Horizons, 36*, 195-213.
2. Lesley, M., Watson, P. and Elliot, S. (2007), "School" Reading and Multiple Texts: Examining the Metacognitive Development of Secondary-Level Preser-

vice Teachers. *Journal of Adolescent & Adult Literacy*, 51, 150–162

3. Nathanson, S., Pruslow, J., and Levitt, R. (2008). The reading habits and literacy attitudes of in service and prospective teachers. *Journal of Teacher Education, 59 (4)*, 313-321.
4. McKool, S. S. & Gespass, S. (2009). Does Johnny's reading teacher love to read? How teachers' personal reading habits affect instructional practices. *Literacy Research and Instruction, 48*, 264-276.
5. Dadzie, P. S. (2008). Reading for Education: The roles of Libraries. *Ghana Library Journal*, 20 (01), 1-14
6. Ogbodo, R.O. (2010) Effective Study Habits in Educational Sector: Counseling Implications. *Edo Journal of Counseling*, 3 (2), 1-11
7. Palani, K. K. (2012) Promising Reading Habits and Creating Literate Social. *International Reference Research Journal*, 3(2.I), 91
8. Deavers, R. (2000), The Effect of Instruction on Early Non-Word Reading Strategies. *Journal of Research in Reading*. 23, 267-286.
9. Bhan, K. S., & Gupta, R. (2010). Study Habits and Academic Achievement among the students belonging to scheduled caste and non-scheduled caste group. *Journal of Applied Research in Education*, 15(1) 1-9
10. Sohail, M & Alvi, A. (2011). Reading habits among the users of Delhi Public Library, New Delhi: a survey, *Brazilian Journal of Information Science: Research Trends*, 5 (2), 69-87

Status of Library Services in Kendriya Vidyalaya and Delhi Public School at NTPC Dadri, UP, India: A Study By

Krishna Gopal

Librarian
Kendriya Vidyalaya NTPC Dadri
Email: eeshukrishna@gmail.com

Abstract: Library services are the key factors in order to establish an institute. Now a days no. of services are being provided by the libraries, especially in school libraries, affiliated with the Central Board of Secondary Education (CBSE) in India. CBSE has given the clear guidelines and procedural manual to its affiliated schools to have a well established library. Well trained human resources are to be employed and most of the services to be provided to the students. Kendriya Vidyalaya and Delhi Public School at NTPC are providing good quality library services to students. Although no library is complete in itself, but there is always a space for growth of library and library services. This study will tell us the status of the library and its services in both of the schools.

Keywords: Library services, Comparison of library services, Library services at NTPC, Library services in Kendriya Vidyalaya, Library services in Delhi Public School.

1. Introduction:

Today's time is digital time every work is being performed through the digital medium right from the household chores to the organizational services. Our libraries are also playing a vital role and catering the information needs and services through the digital medium using the applications of ICT. The libraries of Kendriya Vidyalaya and Delhi Public School are serving their users in digital environment. In this study we will examine the compatibility of the services provided to the users of both of the schools.

2. Objectives:

The objectives of this study are as below;

1. To observe the services provided to the users in terms of usefulness.
2. Users Satisfaction
3. Status of the services in terms of using the ICT Applications.
4. To have a Comparison between the library services provided by both of the schools.

The above charts show that 15 % More users of Kendriya Vidyalaya are very satisfied than Delhi Public School and 12 % More users are satisfied in Kendriya Vidyalaya whereas 12 % users are less partially satisfied of Kendriya Vidyalaya following that very few 8% and 15% less users are dissatisfied than that of Delhi Public School.

6. Impact of ICT:

Another point of comparison was the use of ICT Application while library services are performed.

The given data was collected from the users of Kendriya Vidyalaya and Delhi Public School Both

Table 3 (Sources: Primary)

S No.	Impact of ICT	Kendriya Vidyalaya	Delhi Public School
1	Time Saving	7	92
2	Easier and Remote Access	34	40
3	Storage and Retrieval	6	88
4	Downloading and Printing	7	90

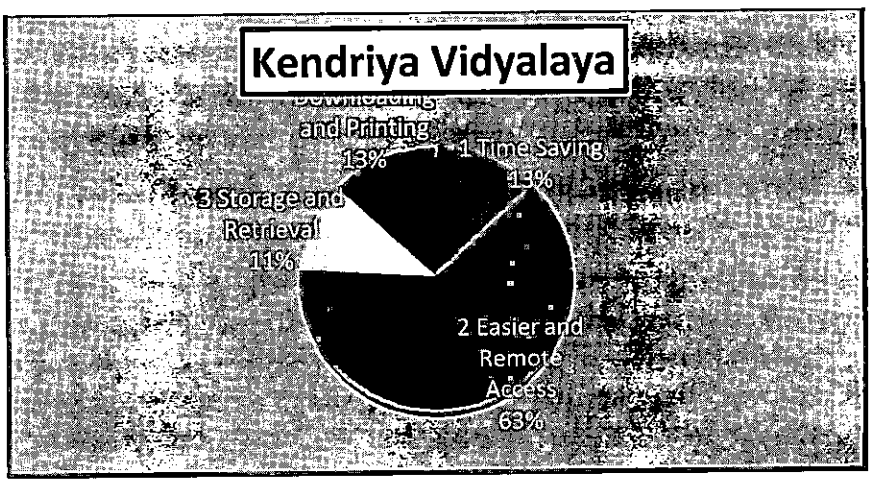
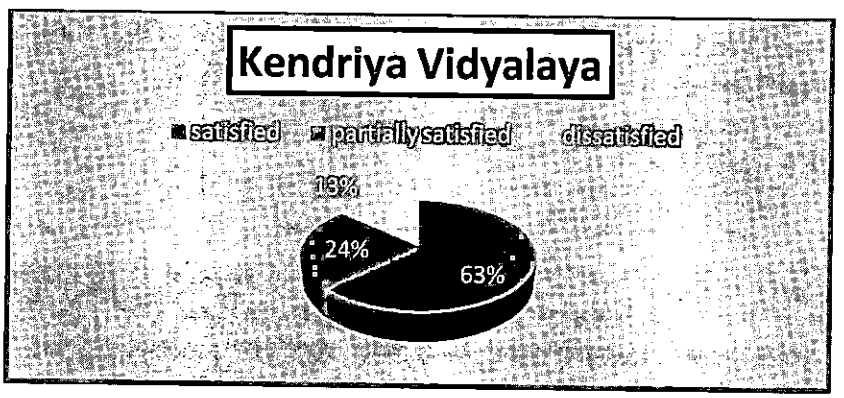


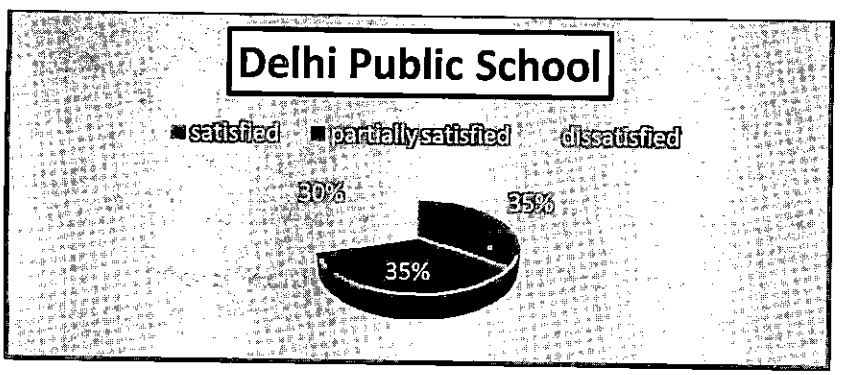
Chart 3.1 (Based on Primary Data sources)

Reference services	23	89	79	9	200
Abstracting & indexing services	80	36	64	20	200
Bibliographic Services	120	30	15	35	200
Audio Visual service	18	82	65	35	200
Internet Services	40	30	26	104	200
Inter Library Loan	47	33	0	120	200
Reprographic Services	36	34	90	40	200
Translation services	32	8	125	35	200
SMS Alert services	37	43	51	69	200
total	497	590	599	514	2200

Comparison



(Chart No 2.1 based on primary sources)



(Chart No. 2.2 based on Primary sources)

12. Shortcomings of the Public Libraries:

In Uttar Pradesh there is no library cess for public library. The finance is given by state government. Most of the Public Libraries still suffer for the lack of minimum facilities such as —

a) A Maintenance of building, good ventilation, standard furniture, fittings, cleanliness, etc.

b) A standard core collection of books and periodicals. The concept core collection was introduced in India so far;

c) A standard salary structure for the staff.

13. Summing-up:

From the above discussions we can say that the public libraries of Lucknow are serving to the academic community within the capacity. These public libraries are being proved as boon for academic community. The services of the libraries may be upgraded and modernized on priority basis.

References:

1. http://ijariie.com/AdminUploadPdf/USERS_SATISFACTION_TOWARDS_PUBLIC_LIBRARIES__A_STUDY_WITH_SPECIAL_REFERENCE_TO_UDUM-ALPET_c_1243.pdf accessed on 02.10.2017.
2. Rubin, Richard E. Foundations of Library and Information Science (3rd Ed.). 2010. Neal-Schuman Publishers: New York.
3. http://www.egyankosh.ac.in/bitstream/123456789/35241/1 /Unit-6. pdf accessed on 12.10.2107.
4. http://rrrlf.nic.in/acts_rules/uttarpradesh.pdf accessed on 10.10.2017.
5. Printed Niyamawali Evam Nirdeshika available at library counter in Aacharya Narendra Dev Pustakalay Evam Vachnalay, Lucknow.
6. Stone Inscription and Niyamawali available in Amiruddaula Public Library, Lucknow.

9. Ganga Prasad Verma Smarak Pustakalay Evam Vachnalay:

The foundation stone was laid down by Sir Tej Bahadur Sapru on 10th March, 1923 and building was inaugurated by Sir William Sinclair Mouris Governor on 14th March, 1925 at Aminabad. The first expansion/renovation was carried out by Shri Chandrabhanu Gupt on 01st October, 1964 and second was also by him on 01st April, 1976. The library is administered by Bharat Seva Sansthan with the help of Librarian and six technical/supporting staff. Nearly 60,000 collections of books (including rare and reference) are available on different subjects in Hindi/ English/Urdu medium. The books are classified as per DDC and catalogued as per AACR-2. Children Section, Women Section and Reference Section are the specialty of the library. The library is equipped with all modern facilities like Internet, Xerox and CCTV system [7].

10. Lajpatrai Pustakalay Evam Vachnalay:

The library building was inaugurated by the then Chief Minister of Orissa Shri Vishwanath Das in the auspicious presence of Shri Chandrabhanu Gupt on 17th August, 1971 at Kaiserbagh. The library is administered by Bharat Seva Sansthan with the help of Librarian and three technical/supporting staff. Nearly 20,000 books (including competitive books and magazines) on different subjects in Hindi/English medium are available for users. The books are classified as per DDC and catalogued as per AACR-2. Closed access system is being followed in library. All reading material (including books) is exclusive for used within the library premises. Seating capacity of the library is nearly forty users at a time [8].

11. Sri Ma Sarada Devi Public Library:

It is situated at Nirala Nagar and was established by Sri Ramakrishna Math. The library is administered by Sri Ramakrishna Math with the help of Librarian and three technical/supporting staff. There is a collection of nearly 46,000 books on different subjects in Hindi/English/Bengali/Sanskrit medium. The books are classified as per DDC and catalogued as per AACR-2. LIBCARE software is being used for in-house activities of the library. Competitive books/magazines are also available for the users. Children Section is specialty of the library. Seating capacity is nearly hundred users at a time. Internet, Xerox and other facilities are available in the library [9].

with the help of Deputy Librarian and ten technical/supporting staff.

There is a collection of 1, 42, 629 books (as on 31st March 2015) on different subjects and general interest in Hindi/English/Bangla/Urdu/Sanskrit medium. The books are classified as per DDC and catalogued as per AACR-2. Open access system is being applied for issue/return of the books. Besides this, Govt. Gazettes and Debates (of some years) of Lok Sabha/Rajya Sabha are also available for the use within the premises of library. A separate section was also established in the library for the books which were donated by British Council Library on its closing in Lucknow in the year 2001. The library has different sections like Newspaper Section, Children Section, Reading Section (for girls), Committee Room, Vichar Manch Room and Computer Section[5].

8. Amiruddaula Public Library:

Amir Hasan Khan, son of Raja Nawab Ali Khan of Mahmudabad became the successor. He was honoured with the designation of Amiruddaula. Amiruddaula Public Library at Lucknow is a symbol of his honour. It was established in the year 1868 with a part of provincial museum and opened in the year 1887 for the students. In the meantime the library was shifted to the upper part on of Lala Baradari and it was again shifted to Chhoti Chatter Manzil in the year 1910 and became famous as Public Library. Ultimately the library was shifted in the newly constructed building at Kaiserbagh. The foundation stone of this present library building was laid by Sir H. Butlar in the year 1921. With an agreement between the then Government and British India Association in the year 1925 the library was renamed as Amiruddaula Public Library. After completion of the present building it was inaugurated by Sir William Morris in the year 1926. Later on, the building was renovated with the financial aid given by National Archives, Ministry of Culture (Govt. of India). There are more than 2, 00,000 books including rare handwritten books/manuscripts on Palm leaves/Birch in Sanskrit/Pauli/Urdu/Farsi/Arbi/ Burmese/Tibetan languages. The books are on different subjects like Philosophy, History, Astronomy, Tantra Shastra, Ancient Medical Science, Literature, etc. The books are classified as per DDC and catalogued as per AACR-2. A special collection of textile designs which were being used in different parts of country are also available. These collections were collected by Dr. J. Forbes Watson in the year 1873. The library is equipped with all modern facilities like Internet, Xerox and Audio/ Video CDs/DVDs. The library is administered by Management Committee under the Commissioner with the help of Librarian and twelve technical/supporting staff [6].

c) To maintain in the permanent library service standards for the development of public libraries and also to ensure that all libraries are follow those standards in the state.

d) To ensure the random inspection of all available public libraries in the state. And also to supervise and coordinate the functions and performance of public libraries in the state, etc.

5. Lucknow:

One of the interesting aspects of Lucknow is its connection with Nawab and the culture of art and literature. Since the state was governed by Nawab and Mughal rulers, Lucknow has often remained as one of the important hub of art and literature. Besides, it is also known to have several vital learning centres and institutions which have connected this place to books and stuffs like these. So, the presence of libraries in the city is the most inevitable thing to experience and deal with. Some of the libraries based in Lucknow have existed since past 7-8 decades and are still serving with greater resources. These libraries cater everything right from the curriculum books for academic purposes research/reference, general interest books, newspapers, magazines, etc. With the age of IT and Internet, you can come across a number of modern resources in the form of CDs/DVDs; this means you can now access knowledge in digital format as well.

6. Public Libraries of Lucknow:

The number of public libraries is existed in the Lucknow city. Due to time constraints and some other reasons five public libraries viz. Aacharya Narendra Dev Pustakalay Evam Vachnalay, Amiruddaula Public Library, Ganga Prasad Verma Smarak Pustakalay Evam Vachnalay, Lajpatrai Pustakalay Evam Vachnalay, and Sri Ma Sarada Devi Public Library have been selected for the study.

7. Aacharya Narendra Dev Pustakalay Evam Vachnalay:

This library was established by ex-Chief Minister of U.P. in the year of 1959 and was named on world level socialist thinker Aacharya Narendra Dev. The library was inaugurated by the then Prime Minister Pt. J. L. Nehru on 30th April 1961. In starting it was opened in Motimahal, 2-Rana Pratap Marg but later on shifted in present building known as Chandrabhanu Gupt Smarak Navchetna Kendra, 10-Ashok Marg, Hazratganj. The library is administered by the Bharat Seva Sansthan, Motimahal

- Encourages wholesome recreation and constructive use of leisure time
- Provides children, young people, men and women opportunity to: a) educate themselves continuously, b) keep abreast of progress in all fields of knowledge, and c) maintain freedom of expression and constructively critical attitude to all public issues and world affairs.

4. Uttar Pradesh Public Library Act:

The Uttar Pradesh Library Act was passed by the state government in the year 2006. It is the biggest State in the country with two State Libraries one at Lucknow and the other at Allahabad. It has 59 Government District Libraries and a large number of aided libraries. The salient features [3] of the Act are as under:-

a) Constitution of State Library Council with the Minister, Secondary Education Department as Chairperson.

b) Provision for Director of Public Libraries, but to keep the Director of School Education, Uttar Pradesh, as the Director of Public Libraries for administration and operation of the provisions of the ordinance.

c) Establishment of two State level libraries one at the State Central Library at Allahabad and the other, State Reference Library at Lucknow.

d) Establishment of District Library in each District.

e) Recognisition of the libraries runs by voluntary organizations.

f) Meeting the entire expenditure from the State consolidated and non-plan budget of the State.

The detailed functions of the Director of Public Libraries are given in the Act. Some of the major functions [4] of the Director of Public Libraries are as under:-

a) The main function of the director of public libraries is to prepare an annual report of five year budget for the development of the public libraries in the state and propose to the Government of Uttar Pradesh.

b) Another main responsibility of the director of public libraries is to collect all types of data like descriptive or statistical data on the working of public libraries and also government aided libraries.

There are five fundamental characteristics shared by public libraries. The first is that they are generally supported by taxes (usually local, though any level of government can and may contribute); they are governed by a board to serve the public interest; they are open to all, and every community member can access the collection; they are entirely voluntary in that no one is ever forced to use the services provided; and they provide basic services without charge. [2]

Public libraries exist in many countries across the world and are often considered an essential part of having an educated and literate population. Public libraries are distinct from research libraries, school libraries, and other special libraries in that their mandate is to serve the general public's information needs rather than the needs of a particular school, institution, or research population. Public libraries also provide free services such as preschool story times to encourage early literacy, quiet study and work areas for students and professionals, or book clubs to encourage appreciation of literature in adults. Public libraries typically allow users to *borrow* books and other materials, i.e., take off the premises temporarily; they also have non-circulating reference collections and provide computer and Internet access to patrons.

The Indian public libraries have achieved its greatest development in large cities. Some cities maintain service that not only comes up to but surpasses minimum standards. Achieving standard library facilities presents special type of difficulties in small cities, scattered suburbs, towns, villages, and rural areas. Even with substantial financial support the small locality is often not able to raise enough money to buy the books needed and to employ the requisite professional personnel. For these reasons many public libraries of the country have not reached on the quality service as per specified norms.

3. Functions of Public Library:

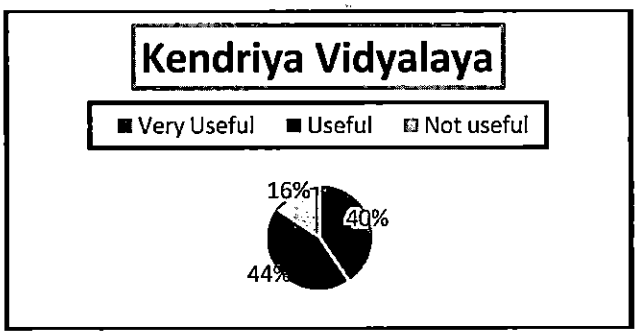
Among its broad based functions to perform in educating the general public as well as the children, the followings may also be quoted:

- It facilitates informal self-education of all people in the community;
- Enriches and further develops the subjects on which individuals are undertaking formal education;
- Meets the informational needs of all;
- Creates and further develops civic sense and habits of the citizens;
- Supports educational, civic, and cultural activities of groups and organizations;

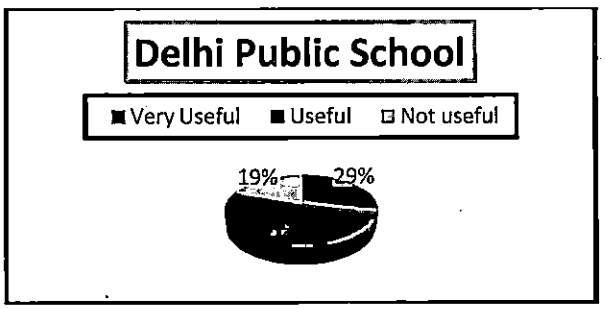
Table 1.2 (Sources: Primary)

S.No	Library services	Very Useful	Useful	Not useful	Total
	Circulation services	60	120	20	200
	Reference services	30	48	22	100
	Abstracting & indexing services	8	22	10	40
	Bibliographic Services	18	18	4	40
	Audio Visual service	14	20	4	38
	Internet Services	12	18	14	44
	Inter Library Loan	11	14	14	39
	Reprographic Services	8	18	8	34
	Translation services	9	21	10	40
	SMS Alert services	8	18	14	40
	Total	178	317	120	615

Comparison



(Chart No. 1.1 based on Primary sources)



(Chart no. 1.2 based on Primary sources)

Above two charts show the comparison between two schools in terms of usefulness of the library services provided by the school to their users. It clearly shows that 11% more users of

Kendriya Vidyalaya accept that the library services, provided them are very useful whereas 8% more users of Delhi Public Schools accept that the library services are useful than of Kendriya Vidyalaya following that 3% More users of Delhi Public Schools say that they are not useful.

5. Satisfaction:

It was another point of the comparative study, below is the data received from the users of Kendriya Vidyalaya and total 442 responses collected.

Table 2.1 (Sources: Primary)

Services	Very Satisfied	Satisfied	Partially Satisfied	Dissatisfied	Total
Circulation services	18	20	3	1	42
Reference services	19	17	4	1	41
Abstracting & indexing services	23	13	2	3	41
Bibliographic Services	21	15	5	-	41
Audio Visual service	5	17	13	6	41
Internet Services	5	14	9	10	38
Inter Library Loan	25	8	6	1	40
Reprographic Services	17	16	3	2	38
Translation services	12	15	8	5	40
SMS Alert services	10	20	5	6	41
total	168	172	65	37	442

Below is the data received from the users Delhi Public School and total 2200 responses were collected.

Table 2.2 (Sources: Primary)

Services	Very Satisfied	Satisfied	Partially Satisfied	Dissatisfied	Total
Circulation services	18	81	80	21	200

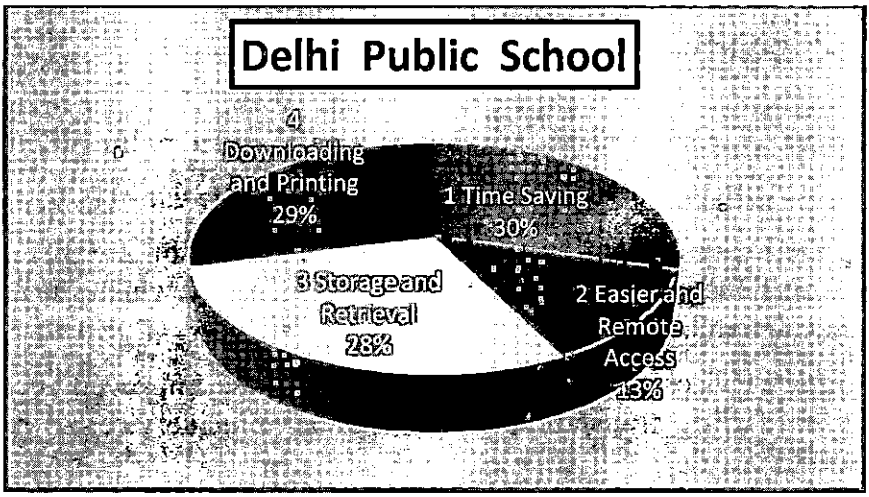


Chart 3.2 (Based on Primary data sources)

Comparison

Both of the above charts show that 63 % users of Kendriya Vidyalaya think that Using the ICT In library services it is much easier and could be accessed the services remotely while only 13% users of Delhi Public School think that it is having less impact of ICT in terms of library services. Around 29% of Average users accept the impact of ICT to time saving, downloading and printing and storage and retrieval. On the other hand around only 12% average of the users of Kendriya Vidyalaya are with rest of three impact of ICT in library services.

7. Result and Discussion:

The above study tells us about the status report of the library services provided by both of the school to the users. The output of this study was clear and tells that the users of both of the schools were aware about the library services provided to them and they know very well the impact of use of ICT application. During the study we came to know that some areas are having the great disparities between both of the school. Also we were able to know that the users of Kendriya Vidyalaya were more benefitted in terms of library services. The users of Delhi Public School were somewhere lacking behind and they need to be made aware about the services and their benefit, which might be more helpful in order to achieve their goal.

8. Findings:

.below are the findings of above study:-

1. It has been seen in the study that half of the users are either partially satisfied or unsatisfied with the services provided to them.
2. Users behavior is uncertain when it comes to the use of ICT application.
3. If the users are not aware or partially satisfied or unsatisfied it means institutions are to think about their services, by which they can uphold their reliability among the students.
4. Some services are to be taken seriously to be improved such as Audio-visual facility, translation facility, Bibliographic services or reprographic services
5. As we see the great differences in the services it means the schools are lacking in the terms of uniformity. Therefore some guidelines are to be provided to the schools by the CBSE for uniformity of services in the schools.

9. Conclusion:

Concluding the above study we see that in the age of the digital era although the CBSE affiliated schools are imparting the education in a better way than that of the state board schools yet schools are supposed to provide more facilities to the students some areas are to be improved and upgraded such as proper use of ICT application, awareness of the services and the rights of the children. Apart from providing the facilities to the students schools needs to improve educational environment, proper availability of study material in libraries, well trained and efficient staff.

References:

1. Use of School Libraries by Teachers: the Case of Oman. (2005, January). Retrieved from https://www.researchgate.net/publication/249945870_Use_of_School_Libraries_by_Teachers_the_Case_of_Oman.
2. *Alison, S.Gregory(2013).* Alison Gregory Named Director of Library Services at Lycoming College. Pennsylvania Libraries: Research & Practice. 1(2) DOI 10.5195/palrap.2013.33

3. Kenneth, W. Berger.(1994). What does the user really want? The library user survey project at Duke University. The Journal of Academic Librarianship, 20(5-6), 306-309.
4. Evidence Based Library and Information Practice1715-720X retrieved from
5. https://doaj.org/toc/1715-720X
6. Michael Buckland (1992). Redesigning Library Services: A Manifesto. Retrieved from https://pdfs.semanticscholar.org/2a7b/918e5a1d6ff5dbed6302405e26b86dd1193d.pdf.
7. Robert Schultz.(2010). The Role of IT in the Ethics of Globalization.Information Science Institute.7,pp.353-368 Retrieved from https://doaj.org/article/000e696be2fc4849b6904ca9b29c4899
8. Charles, Martell (2008). The Absent User: Physical Use of Academic Library Collections and Services Continues to Decline 1995–2006. The Journal Of Academic Librarianship. 34(5),pp.400-407. doi.org/10.1016/j.acalib.2008.06.003
9. William J. Kettinger, Choong C. Lee (1994). Perceived Service Quality and User Satisfaction with the Information Services Function. Decision Sciences,25(5-6), pp.737-766. DOI: 10.1111/j.1540-5915.1994.tb01868.x
10. By Michael E. Casey and Laura C. Savastinuk (2006, 9January).Library 2.0: Services for the Next Generation Library-- Library Journal. Retrieved from http://cil733.pbworks.com/f/Library+2.0+Journal.pdf
11. R.H. Orr, (1973) "Measuring The Goodness Of Library Services: A General Framework For Considering Quantitative Measures", Journal of Documentation, 29 (3), pp.315-332, doi: 10.1108/eb026561
12. Susan Gardner, Susanna Eng (2005, July). What Students Want: Generation Y and the Changing Function of the Academic Library. Project Muse.5(3),pp.405-420. Doi: 10.1353/pla.2005.0034.

A National Biotechnology Consortium of 'Department of Biotechnology (DBT)' : A Historical Perspectives about the 'DeLCON Consortium'

Dr. D. D. LAL

(DeLCON Coordinator & Administrator)
DBT's Electronic Library Consortium (DeLCON Consortium)
Department of Biotechnology, Ministry of Science & Technology, Govt. of India.
National Brain Research Centre, NH-08, Nainwal Mode, Manesar,
Gurgaon, Haryana. Pincode : 122050. India.
Email : ddlal.delcon@nic.in
Website : https://www.delcon.gov.in

Abstract : This paper describes the concept of 'Consortia' highlighting the advantages and disadvantages. The growth of information Technology, Proliferation of information, increased demand of users, financial constraints, inflation in Indian Currency etc. makes the library impossible to acquire all the information resources to fulfill the needs of information seekers self sufficiently. It presses librarians and information providers to seek help from other libraries for sharing of information resources and formation of consortia for cooperation, coordination and collaboration amongst national and international level. The growth of consortia with an emphasis on "DeLCON Consortium" in the area of Life Sciences, Biotechnology and Bioinformatics are discussed and shown that how the NBRC have taken an initiatives and lead for constituting and managing the 'DeLCON Consortium'.

1. Introduction :

Now-a-days access to resources is gaining more importance than collection building. Library consortium are sharing of available resources with the member institutional libraries. Through library consortium, the collective strength of resources of various institutions available to it, can be achieved. The Consortium facilitates the libraries to get the benefit of broader access to electronic resources at reasonable cost.

Library consortium is an association of a group of libraries to achieve mutually the joint benefits. Two or more libraries / information centres or agencies under a formal agreement coordinate, cooperate or consolidate certain functions to achieve shared objective.

The main objective of library consortia are for better resource sharing, to reduce information costs, for speedy delivery of documents to keep abreast of new developments and also to coordinate in development of library facilities and services. Library consortia allows maximum utilization of resources at a reduced cost, time and space. In modern digital age, library consortia provide a way of sharing of resources in electronic format such as e-journals and e-databases.

It is essential that each participating libraries of a consortium is equipped with necessary and sufficient technology to support sharing the resources across. The cooperative utilization of electronic networks, allows provision of seamless access to electronic information resources while sharing the cast of access. Internet connectivity is an essential component in establishing the consortium & network.

2. Meaning of Library Consortia :

Library consortia is a collective activity of a group of libraries towards a common goal of sharing resources. The Library consortium is a cooperative effort of two or more libraries which have formally agreed to coordinate, cooperate or consolidate certain functions to achieve the mutual objectives. It is an association of a group of libraries to achieve mutually the joint benefits. Consortia may be formed on a local, regional, national or international basis, on a functional or formal basis, or an a subject basis. As per Oxford English Dictionary "Consortia means temporary cooperation of a number of powers, companies, or Institutions etc. for a common purpose". It is not only about sharing the resources but also about improving access to information. It refers to co-operation, co-ordination and collaboration between and among libraries for the purpose of sharing information resources.

3. Aims & Objectives of Library Consortium :

The major aims and objective of library consortium should be :

1. To provide reliable access to document collection of libraries by generating online Union Catalogues.
2. To provide document delivery service by the centres and to enhance information resources utilization
3. To implement computerization of operations and services in the libraries and information centres, following a Network Standard
4. To enable the users to have access to academic information

4. Purposes behind Library Consortium :

1. Maximizing the utilization of existing information resources / collection by sharing
2. Providing speedy access to information resources to members located at different places through communications channels for mutual benefits.
3. Collection control and specification
4. The escalating cost of information resource materials, increasing cost of processing documents and their information contents, decreasing budgets in terms of real worth and vide use of computers have also contributed to the development of consortia.

5. Need and requirement of a Consortium for Libraries

Access to resources is now measured more important than collection building, particularly, if the access is perpetual in nature. The Consortium facilities, the libraries to get the advantage of wider access to electronic resources at reasonable cost and at the best terms of licenses. Technological changes also take place day-by-day. Information is more and more available in e-format rather than in print format. The significant of information published uncontrollable. Though consortia deal with several aspects like co-operative book acquisition, common cataloguing, Inter-library-loan (ILL), document delivery services, sharing of expertise, joint training of staff etc. It has now come to mean consortia for combined e-Journal acquisition and access. A Consortium with its collective strength of resources of various institutions available to it, is in a better position to address and resolve the problems of managing, organizing and archiving the electronic resources.

6. Benefits of Consortium for Libraries:

There are a number of benefits of consortium for libraries such as, Resources Sharing – Access to non-subscribed journals, possibility for electronic archives favorably for future, availability of usages statistics, better discount on account of joint–subscriptions, reduced storage costs, ability to develop joint resource databases, effective document delivery systems via single inter face, enhanced search facilities, scope for union catalogue preparation and benefits arising out of larger scale of process.

7. Growth and Future of Library Consortia :

The tremendous information revolution and proliferation have brought about extreme changes to the function and service in all types of libraries in India during last two decades. Many libraries in India till today are not in a position to afford to acquire all documents and subscribe to essential journals in major disciplines. Following are Scenario for the Library consortia development in India for e-Journals subscription.

In India, the biggest academic library consortium was the UGC-INFONET with a membership of 142 Universities. The largest science, engineering & technology consortium in the country was the INDEST (Indian National Digital Library in Engineering Sciences and Technology), which was funded and fueled by the Ministry of Human Resource Development (MHRD), Government of India. INDEST was had 120 Institutions participating members in it. There were Indian Institute of Management (IIMs) Consortium, Indian Institute of Science Education & Research (IISERs) Consortium, which were also funded by MHRD, Govt. of India.

Presently, the latest and largest Library Consortium is 'e-Shodh Sindhu', which was *shaped by Ministry of Human Resources and Development (MHRD) with merging of these major library consortia, namely UGC-INFONET Digital Library Consortium, NLIST, ISSERs, NITs, IISCs, IIMs and INDEST-AICTE Consortium. The 'e-Shodh Sindhu' is providing current as well as archival access to more than 15,000 core and peer-reviewed journals and a number of bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centralized-funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.*

The 'eSS consortium' currently providing access to current and archival 15,000 e-journals and databases and extending the benefit to 139 – State universities, 40 - central universities, 22 – deemed universities, 15 - law universities, 6 of IUCs of UGC, 72 – AICITE funded colleges, 4000 colleges and IITs, IIMs, IISc etc. Available in the e-Shodh Sindhu Collection 1,35,000 e–Books, 40 Resources, 16 databases and 15000+ electronic resources.

At present, there are many other Library Consortium working at national level (e.g. NKRC-CSIR (National Knowledge Research Consortia) Consortium, DAE (Department of Atomic Engineering) Consortium, DRDO Consortium, DeLCON Consortium, HELINET (Health Sciences Library and Information Network) Consortium, FORSA Consortium for the Astronomy & Astrophysics Library, MCIT (Ministry of Communication and Information Technology) Library Consortium, ISRO (Indian Space Research Organization) Consortium, ERMED Consortium, CeRA Consortium, Rajiv Gandhi University of Health Sciences and the ICICI etc.).

A number of regionally focused (some as in metropolitan areas e.g. ADINET in Ahmedabad, and PUNENET in Pune) and city level consortia are also scheduled to occur, having been convinced of the success rates of the ongoing library consortia in the Country.

8. DeLCON Consortium :

The Libraries of the DBT Institutions in India were facing challenges due to crisis of budget, un-sufficient library staff, depreciation of Indian Currency, abrupt hike in conversion rates of foreign currencies, and boom in fee of publication. Because of these factors, the DBT libraries were finding it difficult to subscribe to scholarly scientific journals and databases for their users. Such a situation has adverse impact on the research and development programmes. As well known, it is impossible for individual library to procure all the documents and subscribe to core journals which demanded by the users. Realizing the requirement for scholarly scientific journals in teaching, learning and research the Department of Biotechnology (DBT) has launched 'DBT's Electronic Library consortium' in the year 2009, which is now widely known as a 'National Consortium for Biotechnology' i.e. 'DeLCON Consortium'. Under this DeLCON consortium, access is provided to 1171+ full text scholarly e-journals from 21 International publishers.

To meet the increasing R&D information needs of the DBT Institutes, the DBT's Electronic Library Consortium (DeLCON), a big National Project of the Department of Biotechnology (DBT) to bring qualitative alteration in its research institutions was hosted in the January 2009. It is a national inspiration for providing access to scholarly electronic resources including full-text and bibliographic databases in all the life science subject disciplines to DBT organizations in the country to improve teaching, learning and research.

The access to all major e-resources was given to 10 DBT Institutions in the commencement of the year 2009. It was prolonged to 17 more DBT Institutions in the 2nd phase in the year 2010 and another 7 members were included in the 3rd phase the year 2011. The DeLCON offers current as well as archival access to more than 1171 core and peer-reviewed journals in different disciplines of the Life Sciences from 21 International publishers and some of aggregators.

The DeLCON Consortium offers integrated library services and enable other cooperative projects that yield outstanding quality and value to its members. The DeLCON consortium continuing to strive to bring together a partnership of DBT Institutional libraries of all types to enable patrons to access and gain high quality

information resources they need to enhance and enrich their lives. The DeLCON consortium also continuing to bring new technologies, new services, and new resources to its member libraries to enabling the communities that they serve to achieve their economic, educational, and cultural goals. The DeLCON patron's demands are more efficient, easy to use resources and services. The DeLCON consortium experiments with new models of service and resources in response to that need and to keep pace with the ever changing technology in the library environment.

This DeLCON consortium provides current and archival access to core and peer-reviewed journals in diverse disciplines of life sciences. The aim of this DeLCON consortium is to provide the scholarly scientific literatures, papers, articles to the entire scientific communities through single point administration and subscription.

9. Main Benefits of 'DeLCON Consortium'

Major benefits of the DeLCON consortium are as given below :

1. Consortia-based subscription to electronic resources provides access to wider number of electronic resources at substantially lower cost;
2. Optimum utilization of funds.
3. Facilities to build up digital libraries
4. Helpful to provide better library services like CAS and SDI
5. Cost Sharing for Technical and training support
6. Electronic Journals demand neither library space nor shelving costs nor can they be stolen from the library
7. The DeLCON consortium have been offered better terms of licenses for use, archival access and preservation of subscribed electronic resources, which would not have been possible for any single institution; and
8. Available 24 hours a day, 7 days a week i.e. called 24X7 access
9. Economy in maintaining

The DeLCON comprises the currently following 34 Member Institutions :

10. DeLCON 34 Members:

- National Brain Research Centre (NBRC), Manesar
- Department of Biotechnology (DBT), New Delhi
- National Institute of Plant Genome Research (NIPGR) – New Delhi
- National Institute of Immunology (NII) – New Delhi
- National Centre for Cell Science (NCCS) – Pune
- Institute of Life Sciences (ILS) – Bhubaneshwar
- Institute of Bioresources and Sustainable Development (ISBD) – Imphal
- Centre for DNA Fingerprinting and Diagnostics (CDFD) – Hyderabad
- Rajiv Gandhi Centre for Biotechnology (RGCB) – Thiruvananthapuram
- International Centre for Genetics and Engineering Biotechnology (ICGEB), New Delhi
- National Institute of Animal Biotechnology (NIAB), Hyderabad
- Dibrugarh University (DU), Assam
- Assam University (AU), Silchar
- North Eastern Regional Institute of Science & Technology (NERIST), Arunachal Pradesh
- North East Institute of Science & Technology (NEIST), Assam
- Mizoram University (Mizo Univ), Mizoram
- D. M. College of Science (DMC), Manipur
- Sikkim University (SU), Gangtok
- College of Veterinary Science, Assam Agricultural University (CVSAAU), Guwahati
- St. Anthony's College (SAC), Meghalaya
- Biotechnology Industry Research Assistance Program (BIRAP), New Delhi
- Gauhati University (GU), Assam
- Manipur University (Mani Univ), Imphal
- College of Veterinary Science & Animal Husbandry Central Agricultural

University (CVSAHCAU), Mizoram

- Rajiv Gandhi University (RGU), Arunachal Pradesh
- Nagaland University (NU), Nagaland
- North-Eastern Hill University (NEHU), Shillong
- Indian Institute of Technology Guwahati (IITG), Guwahati, Assam
- National Agri-Food Biotechnology Institute (NABI), Mohali, Punjab
- National Institute of Biomedical Genomics (NIBHG), Kalyani, Kolkata
- Regional Centre for Biotechnology (RCB), Gurgaon
- Tezpur University (TU), Tezpur, Sonitpur, Assam
- Transnational Health Science & Technology Institute (THSTI), Gurgaon
- Sikkim State Council of Science and Technology (SSCST), Gangtok, Sikkim

In terms of number of users, the DBT's Electronic Library Consortium (DeLCON) is the largest Consortium in India constituted in the area of Biotechnology and life sciences with a vision and plan to reach out to all DBT Institutions departments, Research Institutions, Universities, and their colleges affiliated to the DBT, over a period of time.

11. Coverage of DeLCON Consortium

The DeLCON Consortium subscribes to e-resources covering all most important Life Science & Biotechnology subject discipline being taught in the DBT research Institutions, Universities & Colleges. It includes wide variety of materials e.g. e-journals, bibliographic databases, reviews published by scholarly societies, university presses, institutional and commercial publishers. The DeLCON Consortium subscribes to 1171+ full-text e-resources with 21 renowned International foreign publishers. The member institutions are provided differential access to these resources based on their needs and activity profile as per the recommendation of the National DeLCON Steering Committee.

The complete list of full-text resources (e-Journals) and bibliographic databases subscribed under the DeLCON Consortium is given below :

12. List of Covered Journals under DeLCON Consortium

Name of Publishers → Journals → Hyperlink of the publishers → No. of Journals

- American Association for Advancement of Science (AAAS) → http://www.sciencemag.org → (3 Journal)
- American Association for Cancer Research (AACR) → http://www.aacr.org → (9 Journals)
- American Chemical Society (ACS) → http://pubs.acs.org → (47 Journals)
- Annual Reviews (AR) → http://www.annualreviews.org → (23 Journals)
- American Society for Biochemistry and Molecular Biology (ASBMB) → http:///www.jbc.org → (2 Journal)
- American Society For Microbiology (ASM) → http://www.asm.org/ → (17 Journal)
- Cold Spring Harbor Laboratory Press (CSHL) → http://www.cshl.edu → (4 Journals)
- Taylor & Francis (T&F) → http://www.informaworld.com → (40 Journals)
- Lippincott William & Wilkins/ Wolter Kluwer / OVID → http://ovidsp.ovid.com → (11 Journals)
- Marry ANN Liebert (MAL) → http://www.liebertonline.com → (92 Journals)
- Nature Publications → http://www.nature.com → (36 Journals)
- Oxford University Press (OUP) → http://www.oxfordjournals.org → (22 Journals)
- Springer India → http://www.springerlink.com → (339 Journals)
- Society for General Microbiology (SGM) → http://mic.sgmjournals.org → (3 Journals)
- American Society for Hematology (ASH) → http://bloodjournals.hematologylibrary.org → (1 Journal)
- Wiley-Blackwell → http://www3.interscience.wiley.com/cgi-bin/home → (84 Journals)
- Elsevier Science (ScienceDirect) → http://www.sciencedirect.com → (432 Journals)
- American Society of Plant Biologist →http://www.aspb.org/ → (2 Journals)

- American Association of Immunologist (AAI) → http://www.aai.org/ → (1 Journals)
- Scopus Database → http://www.scopus.com → (1 Database)
- The New England Journal of Medicine(NEJM) → http://www.nejm.org → (1 Journal)
- Proceedings of National Academy of Sciences (PNAS) → http://www.pnas.org → (1 Journal)

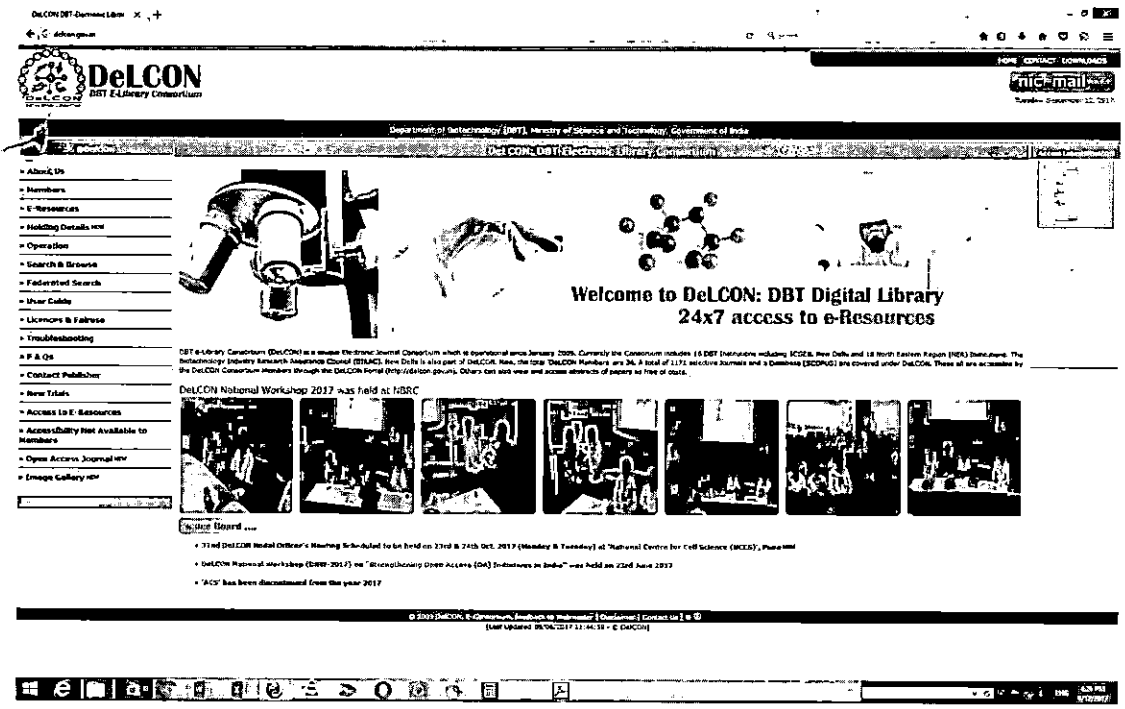
13. Area Coverage of the DeLCON

The DeLCON Consortium cover-up all the disciplines and subjects coming under Life Sciences i.e. Biotechnology, Bioinformatics, Biochemistry, Biology, Chemical Biology, Sciences, Immunology, Neuroscience, Plant Genome, Plant Biology, Microbiology, Physiology, Psychology, Physiotherapy, Psychotherapy, Genome, Gene, Genetics, Mathematics, Physics, Chemistry, Radiology, Medicines, Computational Biology, Cell Biology, Cell Sciences, Molecularbiology, Molecular and Cellular Biology, Computational Neuroscience, System Neuroscience etc.

14. The DeLCON Consortium Offer & the Webpages of DeLCON

The DeLCON Consortium offers combined library services and enable other cooperative projects that yield outstanding quality and value to its members. The DeLCON consortium continuing to strive to bring together a partnership of DBT Institutional libraries of all types to enable users to access and gain high quality information resources they need to improve and enrich their lives. The DeLCON consortium also continuing to bring new skills, new services, and new resources to its member libraries to allowing the communities that they serve to achieve their economic, educational, and cultural goals. The DeLCON users needs are more well-organized, easy to use resources and services. The DeLCON consortium trial with new models of service and resources in response to that need and to keep pace with the ever changing technology in the library environment.

The Webpage of the DBT's Electronic Library Consortium (DeLCON Consortium) :



The above screenshot the DeLCON Consortium taken from the Website page : http://delcon.gov.in). The website of the DeLCON Consortium is very-very impressive, transparent and attractive designed by the INFLIBNET Scientists and all the information about the DeLCON Consortium are reflected in the home page of the DeLCON.

15. Conclusions :

Due to the budget crises faced by all the DBT Institutions, the DBT constituted a DeLCON Consortium and this DeLCON Consortium has come as a consequence helpful solution for the DBT Institutions.

The DeLCON Consortium is actually very-very useful & appreciated by the DBT Institutions as well as their faculties, scientists, researches, students and other user community of the member Institutions. All the patrons of DBT Institutions are extremely benefitted.

After formation of the DeLCON Consortium the NBRC and other members were discontinued maximum online journals & print journals as the member were getting 1172 resources through DeLCON Consortium. Now, currently some major & prime journals are being subscribed with own Institutional Budget which were not

covered under the DeLCON Consortium. Due to DeLCON Consortium the members have saved their own Institutional budgets. A wider range of major journals have been covered under DeLCON Consortium, which fulfill the requirements to the member institutions and their Scientists & researches for their research areas. The DeLCON resources helps to improve the growth of the member Institutions in the terms of quality of research works as well as publications. It would not be possible for any single institution to negotiate better terms for subscription, archival access and preservation of licensed e-Resources, which the DeLCON Consortium currently providing with lower cost, suitable terms and a wider range of journals to the DBT Institutions.

Since the year 2009, the DeLCON consortium growth was extremely extended very high. The DeLCON consortium is now became most popular Consortium in the area of biotechnology and life sciences in the country.

References :

1. Arora, Jagdish., & Agrawal, Pawan. (2003). Indian Digital Library in Engineering Science and Technology (INDEST) Consortium: Consortia-Based Subscription to Electronic Resources for Technical Education System in India: A Government of India Initiative. International Caliber (2003). pp. 271-290. INFLIBNET Centre, Ahmedabad.
2. Babu, B. Ramesh., & Kumar, S. K. Ashok. (2004). Public Library Consortia in India. National Seminar on Library Consortia. pp. 259-266. (Hyderabad. 22-23 March, 2004) : Indian Library Association & Osmania University, Hyderabad.
3. Benerjee, Alok Kr., Chakrabarti, Biplab., Majumdar, & Arunabha Basu. (2009). User Awareness Programmes on Access to e-Resources, UGC-Infonet Digital Library Consortium. INFLIBNET Newsletters; 16(4), pp. 5-7.
4. Bhat, Jyoti., & Joshi, Nilesh. (2009). Impact of UGC INFONET Digital Library Consortium to Academic Community: A Case Study of The Maharaja Sayajirao University of Baroda. 7th International CALIBER-2009. pp. 565-571. Pondicherry University, (Puducherry. February 25-27, 2009) : Inflibnet Centre, Ahmedabad.

5. Chand, Prem. (2004). Consortia Model for Academic Libraries in North East Region. National Seminar on Library Consortia. pp. 15-26. (Hyderabad. 22-23 March, 2004) : Indian Library Association & Osmania University, Hyderabad.
6. Chandel, A.S., Saikia, Mukesh. (2012). Challenges and Opportunities of E-Resources. Annals of Library and Information Studies. 59(3), 148-154.
7. Chandran, D., Reddy, J Yadagiri. (2004). Library Consortia and Networks. National Seminar on Library Consortia. 22-23 March, 2004. Hyderabad: 156-164. Indian Library Association & Osmania University, Hyderabad.
8. Chandrasekharan, H., Patle, Sarita., Pandey, P. S., Mishra, A. K., Jain, A. K., Goyal, Shikha., Pandey, Amit., Khemchandani, Usha., & Kasrija, Rajkumari. (2012). CeRA–the e-Journal Consortium for National Agricultural Research System. Current Science. 102(6) : 847-851.
9. Cholin, V.S., Thiyam, Satyabati., & Murthy, T.A.V. (2006). UGC-INFONET E-Journals consortium: Access to scholarly journals and databases for Indian academic community- A study. In T.A.V. Murthy et.al..(Ed.4) *Dynamic Interoperable Web Based Information System.* Ahmedabad: INFLIBNET.
10. Dhanasegaran, G. (2004). Trends in Library Consortia With Special Reference to India. National Seminar on Library Consortia. pp. 181-186. (Hyderabad. 22-23 March, 2004) : Indian Library Association & Osmania University, Hyderabad.
11. Dhiman, Anil Kumar. (2005). Consortium Based Library Subscription : Some Issues. *3rd International Convention PLANNER -2005.* pp. 294-300. Assam University, (Silchar. 10-11 Nov. 2005) :INFLIBNET Centre, Ahmedabad.
12. Gaur, Ramesh C., & Tripathi, Manorama. (2012). Role of consortia in preservation of e-journals. Annals of Library and Information Studies. 59, 204-211.
13. Ghosh, Maitrayee. (2002). Indian Academic library consortia (IALC): A Proposal for Electronic Resource Sharing. In Cremia-2002 International con-

ference. pp. 594-600. (Sudak (Ukraine). June 8-16th 2002).

14. Jayaprakash, H., & Bachalapur, MM. (2005). Consortia Developments in Library and Information Centres : Some Issues. 3rd International CALIBER - 2005. pp. 531-538. (Cochin. 2-4 February, 2005) : INFLIBNET Centre, Ahmedabad.
15. Joshi, Govind. (2005). Consortium of Plantation Crops Research Libraries for Resource Sharing – A Proposal Issues and Facts. *3rd Convention PLANNER -2005*. pp. 288-293. Assam University, (Silchar. 10-11 November 2005). INFLIBNET Centre, Ahmedabad.
16. K, Susan Mathew., NK, Sheeja. (2005). Use of E-Resources in a Networked Environment : A Case Study of CUSTA : Proceeding of the National Convention on Library and Information Networking (NACLIN 2005). Pp. 291-299. PES Institute of Technology. (Bangalore. August 22-25, 2005) : Delnet. New Delhi.
17. Lal, D. D. (2012); Consortia Based Electronic Information Resource Sharing in Department of Biotechnology Institutes in India. Annals of Library and Information Studies. 59, 181-186.
18. Madhavi, K. Radha., & Khan, Tanveer Rasheed. (2004). Towards Formation of A Consortium of Rural Development Institutions. National Seminar on Library Consortia. pp. 203-208. (Hyderabad. 22-23 March, 2004) : Indian Library Association & Osmania University, Hyderabad.
19. Ojedokun, Ayoku A., Botswana, Gaborone. (2003). Cooperative Electronic Networks of Academic Libraries in Southern Africa.1st International Caliber-2003: 1-8. INFLIBNET Centre, Ahmedabad.
20. Pandian, M. Paul., & Karisiddappa, C.R. (2003). Technology Issues for Library Consortia in India. Caliber-2003. pp. 01-06. Nirma Education and Research Foundation, Ahmedabad : INFLIBNET Centre, Ahmedabad.
21. Parisutharaj, L., & Kanthimalthi, S. (2004). Use of e-Resource Statistics : A Case Study of NIT Tiruchirapalli Library. National Seminar on Library Consortia. pp. 137-143. (Hyderabad. 22-23 March, 2004) : Indian Library Association & Osmania University, Hyderabad.

Authors Profile



Dr. D. D. LAL is working as Officer In-charge for Library at National Brain Research Centre (Deemed University), Manesar, Gurgaon, Haryana, since inception (Year 2000) as well as he is working as "DeLCON Coordinator" for the DBT's Electronic Library Consortium (DeLCON Consortium) since the year 2009. He obtained his Ph.D. Degree in LIS from University of Calcutta. He holds M.L.I.Sc. and M.Phil. in LIS Degrees. He has established a "Digital Library Concept" at "National Brain Research Centre (NBRC), Manesar as well as other DBT Institutions. He is having 17+ years of professional library experience for managing the Digital Library of NBRC, which is a Deemed University of Department of Biotechnology, Ministry of Science & Technology, Government of India. He has taken initiatives for constituting the National Biotechnology Consortium i.e. DeLCON Consortium and single handedly managing the DeLCON National Consortium since the year 2009 to till date. He has organized various meetings for the 'DeLCON Consortium" as well as a DeLCON National Seminar (DNS-2013) and a DeLCON National Workshop (DNW-2017) on 'Open Access Initiatives in India'. He participated as a member of Panelist in various conferences & seminars and also chaired sessions for the Conferences. He is an active member of "National Negotiation Committee" as well as "National Licensing Committee" for the various National Consortium such as eSS (e-Shodh Sindhu) INFLIBNET Consortium, DRDO Consortium, NKRC-CSIR Consortium and CeRA Consortium. He has more than 10 publications to his credit. He has participated and involved in many national and International conferences. His areas of specialization are Library Networking and Library Consortium. He is life member of Indian Library Association and IASLIC. He has visited Hong-Kong in the year 2016 and represented India in the OCLC Conference & Asia Pacific Regional Council Meeting (APRC-2016) on "Libraries at the Crossroads" and contributed a lecture about managing NBRC Digital Library as well as DeLCON National Consortium.
E-mail: ddlal.delcon@nic.in, ddlal.g@gmail.com

Collection Development Practices in the college libraries affiliated to Akkamahadevi Women's University, Vijayapura, Karnataka

P. G. TADASAD

Professor and Chairman
Department of Library and Information Science
Akkamahadevi Women's University, Vijayapura -586105 (Karnataka)
E-mail: pgtadasad@gmail.com

DEEPTHI

Assistant Librarian
College of Forestry, Sirsi – 581401 (Karnataka)
E-mail: deepthi.k67@gmail.com

Abstract: Collection development refers to the systematic process of building and maintaining the library's collection. The article tries to answer the question whether the practices of college libraries can in true spirit be called as collection development process based on a study of the practices of the college libraries affiliated to Akkamahadevi Women's University, Vijayapura, Karnataka. Telephonic interviews, method of observation and content analysis of LIC reports have been employed to study the problem. Finds that the college libraries do not have any collection development policies. Concludes that the present collection development process cannot be called as collection development in the light of accepted definitions of Collection development as many components of collection development are not practiced. The whole process can best be described as book buying or book acquisition. The paper suggests that in the process one must understand book selection method which influences subsequent use of those selected books.

Keywords: Collection development; College libraries; Akkamahadevi Women's University, Vijayapura; Karnataka, India

1. Introduction:

Collection development refers to the process of building and maintaining the library's collection. Shipman (1971) referred the term Collection building for the systematic and planned development of an already existing collection. Pankake (1984) observes that collection development is an expansion of book selection, enlarging the kinds of materials to which selection principles have been applied and making the collection itself the principle object of attention. The term collection development according to Hannaford (1980) and Stuert (1980) covers, comprehensively the full range of intellectual work of adding, replacing and

removing of works in the collection in consistence with the objective of the parent organization. The term was used by Buckland (1989) to indicate the set of decisions needed for effective development of collection in libraries. Evans (1979) defines collection development as a process of identifying the strengths and weaknesses of a library's collection, in terms of patron needs and community resources and attempting to correct existing weaknesses if any. Even after almost four decades, the definition of the term collection development has not changed. The Manhatten Public Library (2017) defines the term as the process of adding and withdrawing materials from the library's collection, including print, audio visual, electronic and subscription formats in order to fulfil the service roles of the library.

The above definitions clearly indicate that the process of collection development requires systematic approach and it includes wide range of activities viz., community analysis, need establishment, policy formulation, selection, acquisition, maintenance, evaluation, weeding, etc. But the question is whether the practices of college libraries can in true spirit of the definitions given above can be called as collection development process. Hence, an effort is made in this paper to know the collection development practices of the college libraries affiliated to Akkamahadevi Women's University, Vijayapura, Karnataka.

2. Akkamahadevi Women's University, Vijayapura, Karnataka:

Akkamahadevi Women's University formerly known as Karnataka State Women's University was established in the year 2003 in Vijayapura (formerly Bijapur) the district headquarter. The university has been accredited with B grade by NAAC and also awarded three star status by K-SURF study. The jurisdiction of the university was extended over 13 districts of north Karnataka till last year. From this year the jurisdiction extends to the entire state. At present there are 148 colleges affiliated to the university but there are 13 colleges which are inactive. As such more than 33000 U G students in 135 colleges are pursuing 10 UG courses under semester scheme.

The characteristics of college libraries under study are tabulated in Table 1. It is found that a greater majority of colleges affiliated to the university are unaided (N=116, 78.38%); with temporary affiliation (N=125, 84.96%); not having recognition under 2(f) and 12 (B) of the UGC (N=126, 85.14%); and without NAAC accreditation (N=131, 88.51%). A greater majority of colleges are active (N=135, 91.22%) with a small percentage of colleges are inactive. Nearly three fourth of colleges are located in urban areas (N=109, 73.65%) though slowly colleges are being set up in rural areas as well (N=39, 26.35%). A very small number of

colleges are offering U G and P G courses (N=12, 8.11%) as a larger majority are offering only U G courses (N=136, 91.89%). More than two-fifth of colleges (N=67, 45.27%) affiliated to the university offer only single programs like B Ed and BA. Slightly more than one third of colleges offer two programs (N=49, 33.11%) and the prominent one is B.A. and B.Com. programs. It can also be noticed that a majority of colleges (N=111, 75%) are established after 2003 i.e after the establishment of the University and among them 97 of 111 colleges are unaided in nature. The remaining 14 colleges established after 2003 are Government colleges.

Table 1: Characteristics of College libraries affiliated to Akkamahadevi Women's University, Vijayapura

Characteristic	Number (%)	Characteristic	Number (%)
Type		**NAAC Accreditation**	
Government	16 (10.81%)	Yes	17 (11.49%)
Pvt – Aided	16 (10.81%)	No	131 (88.51%)
Pvt – Unaided	116 (78.38%)	**Affiliation**	
UGC Recognition		Permanent	23 (15.04%)
2 (f) and 12 (B)	20 (13.51%)	Temporary	125 (84.96%)
2 (f)	2 (1.35%)	**Status**	
No	126 (85.14%)	Active	135 (91.22%)
Location		Inactive	13 (8.78%)
Urban	109 (73.65%)	**Courses**	
Rural	39 (26.35%)	Only UG	136 (91.89%)
Programs		UG and PG	12 (8.11%)
Single	67 (45.27%)	**Year of establishment**	
Two	49 (33.11%)	Before 2003	37 (25.00%)
Many	32 (21.62%)	After 2003	111 (75.00%)

3. Review of Literature:

A literature search on LISA and LISTA show that a number of articles have been published on the topic in the Indian context but much of it is theoretical. Very few studies have been reported in the context of collection development in Indian college libraries. Collection development practices in engineering college libraries has produced many studies among the few published in the context. Prominent among them include the studies reported by Pratap (2016), Sahu (2015), Sharma and Kumar (2010) that highlighted the necessity to strengthen the CDP. Mulla and Chandrashekara's (2006) study finds low availability of e-resources among

engineering college libraries while Mary and Sankar's study (2008) described the collection evaluation practices and Mandal and Panda's (2005) study suggests the consortia approach for collection development among engineering colleges. Tadasad's (1999) study of college libraries finds that though very few first grade college libraries had CDP but were never used for developing the collection. Even after a decade Jeevanagi's (2011) investigation has revealed that print media dominates the college libraries collections and that college libraries have not witnessed a great metamorphosis in recent years in the collection development structure. Sornam, Priya and Prakash (2013) notice the low perception about collection development process among faculty.

4. Methodology:

A glance of the LIC (Local Inquiry Committee) reports of the colleges who were seeking continuation of affiliation revealed few realities with regard to libraries – size of the collection, number of books added during last one year, type and nature of collection the libraries had, the library budget and the library staff (composition and nature of staff). There were at least two cases of non-compliance of conditions put by previous LIC committees which were never fulfilled by the colleges. The first being appointment of full-time librarian. A large majority of un-aided colleges haven't fulfilled this condition. The second being purchase of books worth an amount indicated by the committee. The amount ranges from Rs. 10000 to Rs. 25000. Even this condition was also not satisfied by aided and unaided colleges. The situation is not optimistic and many of the conditions were not complied with. This led to conducting a qualitative study of how the entire process of collection development takes place among the college libraries.

A telephonic interview was conducted with a group of librarians from all categories of libraries to know how the collection development process takes place. Besides the information furnished by the colleges at the time of applying for LIC visit for the year 2017-18 were also used as basis for quantitative analysis of results. The data of those colleges which were given affiliation for the year 2016-17 and 2017-18 were not considered for analysis (N=23) as it was felt that it will be too early to comment on the practices of these colleges. College libraries were also visited as part of LIC visit to consider the continuation of affiliation and the contents of LIC reports have also been analysed for the purpose.

5. Results and Discussions:

The college libraries do not have any collection development policies. But the NAAC accredited colleges have documented certain guidelines for procurement of books. The Directorate of Collegiate Education, GOK, Bengaluru has come out with library manual (2015) in which the process of collection development is described and some guidelines are also narrated. The manual is not at all consulted while developing the collection. The college libraries add new books every year to the collection based on suggestions from teachers within the budgetary limitations. But the colleges, neither make any community analysis nor conduct users' studies nor use studies.

All Government college libraries and a majority of aided college libraries (N=13) are managed by single professional librarians, while all the aided and a small percentage of unaided college libraries that have permanent affiliation status have (N= 7) one supporting staff. A majority of unaided college libraries (N= 54) are managed by part time librarians. The process of collection development is solely carried out by the college librarians themselves only as there is no other designated professional staff to undertake the work. Since collection development involves continuous and systematic approach and the college librarians are also supposed to give attention to other library operations, the process naturally suffers due to staffing pressure created by increasing expectations and additional responsibilities.

Pankake's observation referred above is also not satisfied by the college libraries. Textbooks in Kannada language are the only kinds of materials selected in all the libraries whether Government or aided or unaided as a large majority of students pursue their UG programs in Kannada language. The English texts are preferred in Science and Commerce streams. The very small collection of reference sources like dictionaries, encyclopedia and yearbooks in the libraries also support the argument. It is also noticed that print materials dominate the collection of libraries with a very small number of NAAC accredited college libraries (N=17) having non-print collection. The size of e-resources is very negligible. The status of scholarly periodicals in the libraries is also a point of worry. Since everything needs to be purchased within the library fees collected by the libraries, few countable Indian journals are being subscribed to by a very small number of college libraries (N=17).

Books are selected in the private aided colleges on the specific recommendations of the teachers. But teachers participation is practically nil in the Government college libraries and it is the Librarians who prepare the list of books to be procured with the help of few interested teachers and also taking help of bright and regular students who are frequent visitors to the libraries. It is the Principals

or the Administrators (Retired Principals in new roles) who have a major say in the book selection process in the unaided colleges. Students' participation is quite marginal in all types of colleges. So is the role of Library Advisory Committee. Publishers' catalogues or book seller's catalogues and book jackets are the major book selection tools consulted by them. The 'syllabus' is the major factor considered for selecting the books. Availability of funds is a factor considered for acquisition of books.

Books are acquired by purchase and not a single library acquires books either on approval basis or on standing order or on blanket order. Private aided and unaided colleges purchase books from local book sellers while the Government colleges purchase books from those who participate in bidding (by inviting quotations or tender through e-portals). It is basically the discount offered by these vendors that determines from whom books are purchased. This is the biggest issue that decides the buying process. The Government colleges accept a discount of anything above 10% while the private colleges demand for 25% to sometimes 40%. Under the circumstances how quality of collection can be assured in private college libraries.

There is no consensus among the college librarians interviewed regarding procurement of multiple copies. Everyone agrees that multiple copies have to be purchased but they disagree with regard to number of copies to be procured. They arbitrarily decide on the number of copies to be purchased citing demand as the main criteria, but there are no specific criteria to procure multiple copies.

The collection development process itself is a one-time activity in a year in all the Government colleges as the book budget is released only, in the month of March and the book budget has to be spent for the purpose it was sanctioned. It is also observed that a majority of unaided colleges with temporary status (N=76) have not even made an attempt to develop the collection and comply the conditions put by the LIC committees. It is few countable individual college librarians who develop the collection throughout the year.

The book buying or acquisition process is done with utmost care by the permanent librarians who are working in Government and private aided colleges. They follow the Karnataka Transparency in Public Procurements act 2000 in its verbatim. Though the act does not consider books as either goods or service, they quite blindly follow the procedure applicable to goods and services. This is to avoid negative audit remarks and its later consequences.

Books purchased with book budget or library funds become part of library's collection and as such the librarians enter the details of books acquired in the Accession Register and shelve them in the closed glass cupboards (N=106) or open

racks (N=17) subject-wise (N=114). Very few college librarians arrange the books in a classified sequence (N=9). Normally books are not weeded out. Completely damaged books are kept in a separate rack but these are not written-off. None of the college library weeds any collection nor replaces the collection that has become unusable.

Regular cleaning and dusting of shelves is the only regularly undertaken preservation practice among the college libraries. Binding and minor repairs are done by a majority of aided private colleges (N=14) and a small percentage of Government (N=2) and unaided (N=5) private college libraries within the library fees collected from the students. The remaining Government colleges are established quite recently and as such haven't come across with such problems.

Stock verification is undertaken every year as a routine practice in all the Government and private aided colleges. Book loss has been noticed but in many instances Librarians are held responsible for the loss and in few cases the Principal's of Government colleges have not taken any action as they are holding the posts as additional responsibility. Even there is a difference of opinion among the college librarians themselves regarding the action to be taken.

The strengths and weaknesses of the existing collection are not evaluated by the college libraries. The College librarians claim that their book collection is adequate to meet the curricular requirements. They say that the students want books written by specific authors and those are made available in the library. However a large number of students buy the books on their own as these books are not very costly.

Not a single college library participates in any resource sharing program or in cooperative collection development programs or in consortia. The NAAC accredited colleges (N=17) and those which are willing to be accredited (N=7) have access to INFLIBNET's – N-List (now part of e-Shodha Sindhu).

It is also noticed that Computers and Internet facility is available in all NAAC accredited college libraries (N=17) and the facility is made available in the colleges (N=63). But their application in collection development process is quite inadequate as librarians are not interested to purchase the books neither online nor the books they want to buy or available on.

6. Conclusions:

The objective of collection development is leaner, fitter active collection and not certainly 'swollen, unfit, inactive collection'. The concept of what constitutes a

college library's collection is undergoing a slow transformation and also the purpose of building the college library's collection is also getting changed. The collection development process in Government and aided college libraries can be seen more as administrative rather than academic as emphasis is laid more on procedure rather than the quality of content. The librarians know that any deviation in the process may yield negative remarks from the auditors and they think that it will be a black spot in their careers. This will certainly have a negative impact on the entire process. Books are still purchased at a discount rates arrived on mutually agreeable negotiations.

The present collection development process cannot be called as collection development in the light of accepted definitions of Collection development. Many components are not practiced like no community analysis, no use studies, no CDP, no evaluation of collection, no weeding and many more. Thus the whole process can best be described as book buying or book acquisition by following certain accepted procedural norms. The situation among unaided colleges is still worst as not even book buying is practiced in its right spirit.

The college librarians are aware of the collection development process but they cannot implement it in isolation as there are many factors that hinder the process. The limited funding, staffing pressure, low participation from other academic stakeholders, users characteristics, purpose of collection adds to the problem. Since the college libraries are singlehandedly managed by the librarians they rarely have the time to adequately build the collection and without the support of teachers it will be too difficult for them to develop systematic collection.

Further college librarians do not have all the powers to implement the process of collection development. The other stakeholders particularly the Principals, the Managements, the U G teachers and the auditors have totally misunderstood the concept. They think that there is no difference in book procurement and goods procurement and anybody can do that.

Since the collection development is defined in the context of satisfying the information needs of the users, what is important at the end of the day is whether users' are satisfied with the developed collection. The collection should ultimately reflect the vision and mission of the parent organization – the college. After all who are the primary users of college libraries? And what are their information needs? Under graduates, Post-graduate students (wherever P G Courses are being run) and teachers. If their information needs are satisfied then the purpose of collection development is achieved whatever be the nomenclature of the process. It is immaterial whether the college library has its CDP or not? In the process

one must understand the simple principle that book selection method influences subsequent use of those selected books. Finally we are not supposed to forget 'books are for use' and 'every reader his/her book'.

References:

1. Buckland, Michael K (1989). The roles of collections and the scope of collection development, ***Journal of Documentation***, 45 (3), 214
2. Directorate of Collegiate Education, Govt of Karnataka, Bengaluru (2015). The College Library Manual: A guide for LIS professionals Available at: www.doe.kar.nic.in (accessed on 15th Oct 2017)
3. Hannaford, W (1980), Toward a theory of collection development. IN: Collection development in libraries: A treatise, edited by R D Stuert and G B Miller, Jr, Greenwich, Connecticut, JAI, 2, 573-583
4. Jeevanagi, Sudha Shankar (2011). Evaluation of college libraries of Karnataka state in the light of five laws of library science: A study (Ph D Thesis), Gulbarga University, Gulbarga (Guide: P. G. Tadasad)
5. Mandal, M and Panda, K C (2005). Collection development in the Internet age and the need for a consortium in the engineering college libraries in West Bengal: A study, ***SRELS Journal of Information Management*** 45 (2), 155-172
6. Manhattan Public Library (2017). Collection Development Policy Available at: https://www.mhklibrary.org/wp-content/uploads/2017/04/Collection-Development.pdf (Accessed on 19.10.2017)
7. Mary, A Lawrence and Sankar A (2008). Collection evaluation of PSN college of engineering and technology library and PET Engineering college library in Tirunalveli district, ***SRELS Journal of Information Management***, 45 (1), 63-70
8. Mulla, K R and Chandrashekara, M (2006). E-resources and services in Engineering college libraries – A case study, ***Electronic Journal of Academic & Special Librarianship***, 7 (1), 7

9. Pankake, Marcia (1984). From book selection to collection management: Continuity and advance in an unending work. IN: Advances in Librarianship edited by Wesley Simonton, New York: Academic, 13, 185-210
10. Pratap, Bhanu (2016). Status of Engineering College Libraries in Ambala District of Haryana: A Study, ***SRELS Journal of Information Management***, 53 (2), 153-162
11. Shipman, J C (1971). Collection building, IN: Encyclopedia of Library and Information Science edited by Allen Kent and Harold Lancour. New York: Marcel Decker, 5, 260
12. Sahu, Mahendra K (2015). An analytical study of collection development activity in academic libraries affiliated to Biju Patnaik University of Technology, (BPUT), Odisha, ***SRELS Journal of Information Management***, 52 (2), 131-140
13. Sharma, Chetan and Kumar, Rajendra (2010). Status of Engineering College libraries in Haryana, India, ***Library Philosophy & Practice***, 1-13
14. Sornam, S Ally; Priya, K and Prakash, M (2013). Faculty perception on library facilities: A survey on NAAC accredited autonomous arts and Science colleges in Coimbatore city, ***Library Philosophy & Practice***, 1-13
15. Stuert, R D. Introduction, IN: Collection development in libraries: A treatise, edited by R D Stuert and G B Miller, Jr, Greenwich, Connecticut, JAI, 1, xv-xxxiii
16. Tadasad, P G (1999). Collection development, organization and management among academic libraries in Karnataka (Ph D thesis), Karnatak University, Dharwad (Guide: B. S. Maheswarappa)



Prof. P. G. Tadasad, presently working as Professor and Chairman in the Department of Library and Information Science, Karnataka State Women's University, Vijayapura. He has published more than 180 research papers and edited eight books. 10 students have successfully completed their Ph D under his guidance and 4 are presently working under his supervision. He has served the university in various capacities as University Librarian, Director, PME Board and Nodal Officer for the University under NMEICT project, NAAC and KSET. He is the Special officer to the Vice Chancellor, Karnataka State Women's University, Vijayapura. He is a recipient of AG Motiwale Award for Young Professionals 2002 for Best Paper at 48th All India Library Conference of ILA held at NIMHANS, Bangalore, 2003. His area of interest include: User Studies, Knowledge Organization Systems, Digital Divide and Academic Libraries.



Dr. Deepthi is presently working as Assistant Librarian at the College of Forestry, Sirsi of University of Agricultural Sciences, Dharwad since April 2017.Earlier to that she was UGC-Post Doctoral Fellow under the mentorship of Prof. P G Tadasad at the Department of PG Studies and Research in Library and Information Science, Akkamahadevi Women's University, Vijayapura. She was awarded Gold Medal in MLISc and passed UGC NET exam (Jun 2012). She was recipient of RGNF, New Delhi for her PhD. She has published 36 articles and research papers in refereed national and international conferences and journals and presently has one SRP from the University. She is a member of ILA and American Library, Mumbai Her area of interest is Information Analysis Consolidation Repackaging Dissemination.

Collection Evaluation: A Study of PAU Library

Yogita Sharma

Deputy Librarian, Mohinder Singh Randhawa Library, Punjab Agricultural University, Ludhiana, email: yogita_sharma@pau.edu

Abstract: The present study was conducted in Mohinder Singh Randhawa Library, PAU, Ludhiana, to evaluate the library collection. The study was conducted on a sample of randomly selected five subjects- Botany, Computer Science, Food & Nutrition, Plant Pathology and Soil Science. The circulation data of number of check-outs for the last five academic years i.e. from 2011-12 to 2015-16 was analysed using MS Excel. This study was confined to use of books only issued by the Library. The main objectives of the study were to study the impact of publication year on use of books, to study the impact of time lag between date of publication and acquisition on usage pattern and lastly to identify most frequently used books. The study revealed that the year of publication had a significant impact on the use of books. Similarly, the books which were acquired immediately after being published were found to be most frequently used.

Keywords: Collection evaluation, collection development, collection assessment, university libraries.

1. Introduction

Information revolution has changed the role of libraries from preservation of books and storehouse of information to dissemination of information in physical as well as virtual forms. Libraries in modern times function to optimize their use. University libraries support the objectives of its parent organization i.e. undertaking research activities and imparting education. The main aim is to cater to the informational needs of users which consist of students, researchers, teachers and administrators. It collects information to disseminate it for instructional, research and learning process of university. Thus a library of a university is the hub of research and educational activity. Though the libraries are leaving no stone unturned in order to meet their objectives, still there exists a serious matter of concern for all the librarians across the globe whether their collection and services are sufficient and relevant to serve their clientele. Secondly, whether the collection is being developed in the right direction.

2. Collection evaluation

In view of the above, there is a dire need to assess the library collection and

services for adequacy and promptness. Lancaster (1977) remarked "The library can be evaluated in terms whether or not it is able to provide the materials sought by its users at the time they needed." Collection evaluation is thus a process that measures effectiveness of a system, whether it is able to meet its objectives or not. According to King and Bryant (1971) "Libraries can be evaluated quantitatively, how well it operates in fulfilling the demands of its users (Macro Evaluation), and also to determine the reasons for its functioning at particular level so that improvements can be made accordingly (Micro Evaluation)." Lancaster (1988) defines the term collection evaluation as "The ultimate test of quality of a library collection however, is extent and mode of its use." According to various thinkers, collection evaluation methods are broadly classified as under:-

a) Quantitative method: This involves comparison of size of collection with set standards of minimum size of the library.

b) Qualitative methods:- This includes i) Impressionistic method involving evaluation of collection by subject experts; ii) Comparison of the collection with the collection of other libraries, Bibliographies, list of cited journals, book selection tools etc.

c) Evaluation by use:- This includes i) Collection sample method i.e. study of circulation history of books; ii) Checkout method i.e. study of books checked out in a particular time; iii) In-Library use method i.e. study of book slips, re-shelving counts and user markings; iv) User survey i.e. through questionnaire or interview of faculty and students.

Over the past two decades, both academicians and practitioners in the field of library and information science have increasingly recognised the significance of assessing library services (Shi and Levy, 2005). Henderson and Sonja (1992) conducted a collection assessment study in 34 subject areas of the Jacksonville State University's Houston Cole Library using various techniques in order to plan acquisitions activity, collection treatment and to determine whether the library collection development policy is being followed or not.

Magrill (1985) provided an overview of various methods which may be applied for collection evaluation in different types of libraries. The terms collection description, collection analysis and collection assessment are covered under collection evaluation activities in large university libraries. According to her, the university libraries use circulation studies for collection evaluation since the publication of the University of Pittsburgh Report, 1979. She predicted that with the presence of automated circulation systems collection evaluation in university libraries using detailed and long-term analysis of circulation data will be used increasingly.

Kneivel et al (2006) conducted a study on English language collection of University of Colorado at Boulder (UCB). This study compares the UCB libraries' circulation statistics and Inter Library Loan (ILL) borrowing requests from 1998-2002 to UCB's World Cat holdings data during the same period. The data was limited to books only and was analysed across subject areas. Data was analysed for UCB's overall holdings, average number of circulation transactions per item, percentage of subject collection circulated and holdings of ILL ratio. It was found that some subjects had high percentage of circulations indicating an active collection. However, these subjects did not necessarily have high transactions per item, indicating that an active collection may not have frequently circulating books.

Larson (2008) has discussed various techniques of collection evaluation like comparison to standards, peer groups, bibliographies, age of collection, use analysis and patron satisfaction in detail. It has been suggested that data may be collected by generating reports from automated circulation system which may be analyzed using Excel spreadsheets in order to identify the strengths and weaknesses in the collection. It has also been suggested that circulation data for the past specific years may be analyzed to obtain useful circulation trends helpful in taking corrective decisions.

To sum up, main objective of collection evaluation is to determine effectiveness of collection for planning budget, to determine the strengths and weaknesses of collection, to make required improvements, to aid in acquisition criteria, to develop acquisition policy and a tool for weeding. Thus it provides an opportunity to determine the needs for secondary storage and shifting the intensively used books to a better display point in library.

3. Need of the study

Mohinder Singh Randhawa Library, Punjab Agricultural University, Ludhiana has a rich collection of around four lac documents which include books, theses, bound journals and CDs. In addition to this, it is also subscribing to various journals in print as well as online format, e-books and online data bases. Agricultural universities nowadays are facing financial crisis due to shrinking size of the financial grants as compared to escalating prices of books and journals and ever increasing demand of its users. Thus, it is of dire need to plan the collection in such a way that the library is able to overcome these constraints and meet its objectives most efficiently.

4. Scope of the study

The present study was conducted in order to know whether the books acquired by the library over the last 60 years are used or not and to what extent these are used so that decisions regarding collection development may be taken accordingly. The study was focussed on use of books in Mohinder Singh Randhawa Library, PAU in five subjects- Botany, Computer Science, Food & Nutrition, Plant Pathology and Soil Science. This study was confined to use of books only issued by the Library. It does not include journals, reference books and other reading material available in the Library on these subjects.

5. Objectives of the study

The main objectives of the present study are:

1. To study the impact of year of publication on use of books
2. To study the impact of time lag between date of publication and acquisition on usage pattern.
3. To identify most frequently used books.

6. Methodology

It is imperative to decide upon the research methodology well in advance for the effectiveness of the research. Dinkins (2003) conducted a study to assess the current collection development practice with regard to circulation of books by using circulation and acquisition data of five years (1997-2001). The departments of study were chosen on the basis of percentage of departmental budget spent on monographs.

The present study has adopted Evaluation by use technique and specifically the Checkout method i.e. study of books checked out in a particular time. Circulation data of number of check-outs for the last five academic years i.e. from 2011-12 to 2015-16 was analysed using MS Excel. The study was conducted on five randomly selected subjects- Botany, Computer Science, Food & Nutrition, Plant Pathology and Soil Science. It is worth mentioning that PAU has four constituent colleges namely- College of Agriculture, College of Agricultural Engineering & Technology, College of Basic Sciences & Humanities and College of Home Science. So, one subject from each college was randomly selected as a representative of each college. However, since, College of Agriculture, is the biggest college of PAU so two subjects (Plant pathology and Soil science) were selected from this college in

order to give adequate representation in the sample.

7. Analysis of data

The overall circulation data of five years alongwith the data for the above referred five subjects was analysed for various parameters like year-wise check-outs of books, most frequently used books, impact of publication year on the use and impact of time lag between date of publication and acquisition on use. The results so obtained are discussed below.

7.1 Number of check-outs

The circulation data of five academic years was analysed to find out the year-wise distribution of number of check-outs which is shown in figure 1. The total number of check-outs during the period of research is 95,091. It is evident that year 2011-12 witnessed maximum number of check-outs i.e. 20,445 followed by 19,968 in the year 2013-14 whereas it was found to be least in 2014-15.

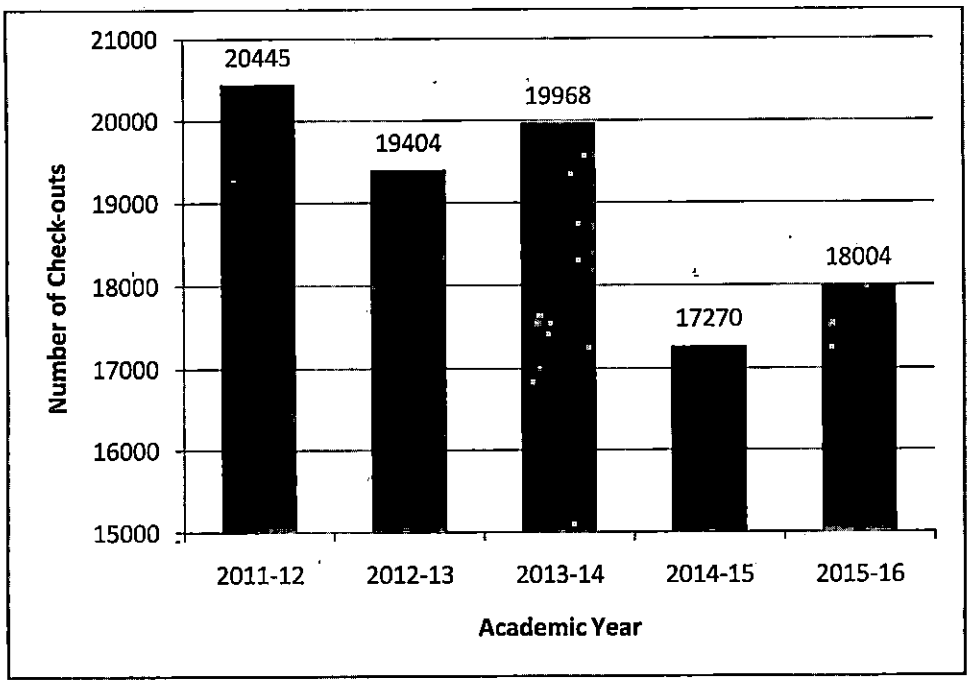


Figure 1: Year-wise distribution of number of check-outs

The data was also analyzed to find out the subject-wise distribution of check-outs in all the five subjects selected for present study and is represented in Table

1. It is clear that maximum number of check-outs (4,441) were recorded in Botany followed by 3,210 in Plant Pathology.

Table 1: Subject-wise distribution of check-outs

Subject	Total no. of check-outs
Botany	4441
Computer Science	2104
Food & Nutrition	1222
Plant Pathology	3210
Soil Science	2931

7.2 Frequently used books

Most frequently used books based on the number of check-outs in all the subjects were found and are listed in Table 2. It is clear that if combined data of all the five subjects is considered then the most frequently used first two books belong to Botany followed by the third one from Plant Pathology and Table 1 shows that maximum no. of check-outs were recorded in Botany followed by in Plant Pathology. It is suggested that more number of copies of these books may be added to the library collection

Table 2: Subject-wise details of most frequently issued books

Subject-wise rank	Bibliographical details	No. of times book issued
Botany		
1	Plant physiology, Lincoln Taiz, 2010	96
2	Fundamentals of plant physiology, V. K. Jain, 2011	83
3	Plant physiology, Lincoln Taiz, 2003	45
4	Fundamentals of plant physiology, V. K. Jain, 2012 Introduction to plant tissue culture, M. K. Razdan, 2000	42 42
5	Plant physiology, Lincoln Taiz, 2002	31
Computer Science		
1	Fundamentals of computer algorithms, Ellis Horowitz, 2009	37

2	Fundamentals of computer algorithms, Ellis Horowitz, 2008	31
3	Computer fundamentals: concepts, systems and applications, P. K. Sinha, 1992 Data communication, Charanjeet Singh, 2012	28 28
4	Visual basic 6 programming: black book, Steven Holzner, 2001 Mastering visual basic 6, Evangelos Petroutsos, 2001 Linux : the complete reference, Richard Petersen, 2011	24 24 24
5	Computational physics : applications using Fortran 77, V. K. Mittal, 2008 Java 2 : the complete reference, Patrick Naughton, 2000	23 23
Food & Nutrition		
1	Foods: facts and principles, N. Shakuntala Manay, 2008	59
2	Food science and nutrition, Sunetra Roday, 2011	29
3	Foods: facts and principles, N. Shakuntala Manay, 2012	28
4	Dietetics, B. Srilakshmi, 2006 Fundamentals of foods, nutrition and diet therapy, S. R. Mudambi, 2010 Nutrition, Paul Insel, 2007	25 25 25
5	Nutrition science, B. Srilakshmi, 2002	24
Plant Pathology		
1	Integrated pest management: concepts and approaches, G. S. Dhaliwal, 2006	80
2	Modern weed management: with special reference to agriculture in the tropics and subtropics- a textbook and manual, O. P. Gupta, 2012	45
3	Agricultural pests of south Asia and their management, A.S. Atwal, 2010	43
4	Weed management, U. S. Walia, 2010	39

5	Identification of weeds and their control measures, Surjit Singh, 2010	37
Soil Science		
1	Introductory soil science, Dilip Kumar Das, 2011	51
2	Fundamentals of soil science, Indian Society of Soil Science, 2002	45
3	Soil microbiology and sustainable crop production, Geoffrey R. Dixon, 2010	42
4	Soil Microbiology, N. S. Subba Rao, 2009	41
5	Fundamentals of soil, V. N. Sahai, 2010	40

7.3 Impact of publication year on the usage

In order to study the impact of publication year on use of books the publication year was categorized into groups of ten years each. The data was analyzed according to these groups. It was found that maximum number of check-outs i.e. 55.21% took place in the first 10 years of publication (Table 3). It was 78.19% in first 20 years of publication. Furthermore, 96.22% check-outs were found within 50 years of publication.

Table 3: Distribution of number of check-outs according to publication year

Publication year	No. of check-outs	Percentage
1-10 years	**52499**	**55.21%**
11-20 years	21854	22.98%
21-30 years	6737	7.08%
31-40 years	5698	5.99%
41-50 years	4719	4.96%
51-60 years	2670	2.81%
61-70 years	651	0.68%
71-80 years	112	0.12%
81-90 years	140	0.15%
91-100 years	11	0.01%

The data was also analyzed for all the subjects under study by grouping the publication year into groups of 10 years each. As clear from Table 4, maximum no. of checks-outs in all the subjects was recorded during first 10 years of publication. It was 51.81% for Botany, 70.63% for Computer Science, 61.78% for Food &

Nutrition, 44.83% for Plant Pathology and 42.48% for Soil Science. It was also evident that use of books was almost negligible after 50 years of publication. It is worth mentioning that the books in the subject of Computer Science were not at all used after 50 years of publication. The reason being is that Computer Science is considered to be most dynamic subject and its technology changes very rapidly. Thus, the publications in this field become obsolete very soon.

Table 4: Subject-wise check-outs according to publication year

Publication year	Botany		Computer Science		Food & Nutrition		Plant Pathology		Soil Science	
	No. of check-outs	%age	No. of check-outs	%age	No. of check-outs	%age	No. of check-outs	%age	No. of check-outs	%age
1-10 years	**2301**	**51.81%**	**1486**	**70.63%**	**755**	**61.78%**	**1439**	**44.83%**	**1245**	**42.48%**
11-20 years	986	22.20%	538	25.57%	271	22.18%	975	30.37%	935	31.90%
21-30 years	376	8.47%	60	2.85%	60	4.91%	323	10.06%	112	3.82%
31-40 years	384	8.65%	12	0.57%	51	4.17%	289	9.00%	333	11.36%
41-50 years	216	4.86%	8	0.38%	64	5.24%	116	3.61%	196	6.69%
51-60 years	90	2.03%	0	0	18	1.47%	63	1.96%	85	2.90%
61-70 years	42	0.95%	0	0	1	0.08%	5	0.16%	22	0.75%
71-80 years	39	0.88%	0	0	2	0.16%	0	0	3	0.10%
81-90 years	7	0.16%	0	0	0	0	0	0	0	0

In nutshell, publication year has a significant impact on use of the books which is evident from tables 2, 3 and 4 as the user prefers to use recent books. This is in accordance to Fussler and Simon (1969) who extensively discussed that the publication year has a significant impact on the use of collection in their study conducted on University of Chicago Library, Illinois.

7.4 Impact of time lag in date of publication and acquisition on the usage

The impact of the delay in acquisition of books in the library from the year of publication was also studied. Table 5 shows maximum number of checkouts i.e. 93.89% was recorded for the books having 10 years of time lag in acquisition of

book which decreased with the increase in the time lag. In other words, maximum use of books was recorded incase of the minimum time lag involved in acquisition of books.

Table 5: Number of check-outs according to time lag in date of publication and acquisition

Time lag in date of publication and acquisition	No. of check-outs	Percentage
1-10 years	**89280**	**93.89%**
11-20 years	3591	3.78%
21-30 years	1434	1.51%
31-40 years	568	0.60%
41-50 years	174	0.18%
51-60 years	40	0.04%
61-70 years	3	0.00%
71-80 years	1	0.00%

The data was also analyzed subject-wise to study the impact of the time lag. Table 6 shows maximum number of check-outs in all the subjects took place for the books which were acquired within 10 years from the date of publication. It was 92.77% for Botany, 96.48% for Computer Science, 96.07% for Food & Nutrition, 96.48% for Plant Pathology and 96.04% for Soil Science.

Table 6: Subject-wise check-outs according to time lag in date of publication and acquisition

Time lag in date of publication and acquisition	Botany		Computer Science		Food & Nutrition		Plant Pathology		Soil Science	
	No. of check-outs	%age	No. of check-outs	%age	No. of check-outs	%age	No. of check-outs	%age	No. of check-outs	%age
1-10 years	4120	92.77%	2030	96.48%	1174	96.07%	3097	96.48%	2815	96.04%

11-20 years	108	2.43%	69	3.28%	17	1.39%	70	2.18%	62	2.12%
21-30 years	140	3.15%	2	0.10%	20	1.64%	14	0.44%	17	0.58%
31-40 years	69	1.55%	3	0.14%	8	0.65%	28	0.87%	12	0.41%
41-50 years	1	0.02%	0	0	3	0.25%	1	0.03%	22	0.75%
51-60 years	1	0.02%	0	0	0	0	0	0	3	0.10%
61-70 years	2	0.05%	0	0	0	0	0	0	0	0

It is clear from the tables 5 and 6 that time lag was found to be inversely proportional to the usage of books. The lesser the time lag more was the usage of books in terms of number of check-outs.

8. Conclusion

The present study shows that the most recently published and acquired books were most used. In other words, year of publication was found to have a significant impact on the use of books. Similarly, the books which were acquired immediately after being published were found to be most frequently used. As the time lag in year of publication and acquisition increased the use of books was found to have decreased. It is therefore suggested that recency of publication may be considered while planning acquisitions.

References

1. Dinkins, D. (2003). Circulation as assessment: Collection development policies evaluated in terms of circulation at a small academic library. *College and Research Libraries,* 64 (1): 46-53.
2. Fussler, H. H. and Simon, J. L. (1969). *Pattern in the use of books in large research libraries.* Chicago: University of Chicago Press. 210p.
3. Henderson, W. A. and Sonja L. M. (Eds). (1992). *Houston Cole Library collection assessment.* Alabama: Jacksonville State University. 324p.
4. King, D. W. and Bryant, E. C. (1971). *The evaluation of information services and prod-*

ucts. Washington: Information Resources Press. 306p.

5. Knievel, J. E., Wicht, H. and Connaway, L. S. (2006). Use of circulation statistics and inter-library loan data in collection management. *College and Research Libraries,* 67 (1): 34-49.
6. Lancaster, F. W. (1977). *The measurement and evaluation of library services.* Washington: Information Resource Press. 395p.
7. Lancaster, F. W. (1988). *If you want to evaluate your library.* London: Library Association. 193p.
8. Larson, G. (2008). Evaluating your collection: Best practices for North Texas Libraries. North Texas Regional Library System. Retrieved from http://ntrls.org/ConsultantReports/NTRLS_EvaluatingYourCollection.pdf
9. Magrill, R. M. (1985). Evaluation by type of library. *Library Trends,* 33 (3): 267-95.

10. Shi, X. and Levy, S. (2005). A theory guided approach to library service assessment. *College and Research Libraries,* 66(3): 266-77.

Development of Digital Library: Need for Emerging Information Society

Dr. O.N. Chaubey

Chief librarian
Pravasi Bharatiya Kendra
Ministry of External Affairs,
New Delhi

Abstract: In this information and electronics era, a digital library holds a key role in education and research. Looking at the vital role a digital library plays in teaching and learning, the discourse focuses upon the issues pertaining to digital libraries and solutions thereof. Prominent among them are the technical, legal and economics issues. While focusing on them, drawing special attention towards content creation, storage and retrieval, etc., the paper also touches upon its effect or relation with the economic and legal problems a little extent. The paper talks on the necessity of digital library system for the well-being of the present information society. The focal intention at the concluding remark of this paper is to attempt for a feeling of the need as well as prospect of digital library and in this respect to bring out some problems and with suggesting some solutions to them.

1. Introduction:

In the information Society, free flow of information is a fundamental principle for bridging the knowledge gaps between privileged and under-privileged communities. Information and electronics hold the umbilical cord of sustenance and progress of any civilized society. This has become a felt reality now with heavy and faster requirement of information; it will play more vital role in forthcoming days. The heavy and faster management of information impetus to information technology and technological development to be introduced in libraries, and gradually we are entering to digital library system. While fulfilling the requirement of information, digital libraries and library management today are continuously undergoing significant change not only in outlook but also in function, services, methods and techniques for collection, development, processing and dissemination of information. These have posed challenges before the library professionals, particularly, in order to keep pace with the complexities of present requirement of information. In this regard, the present discourse focuses upon the need of digital library system by expressing its different facets for users of different fields. The discussion elucidates some features and components of any digital library before going to explore about the challenges and problems the digital library involves.

Digital Library is concerned with the body of knowledge relating to the collection, organization, storage, distribution, retrieval and utilization of digital information. It stores materials basically in electronic format and manipulate large collection of those materials effectively.

2. Principle in the design of Digital library:

The following principles (Dugan and Tanner, 2002) will guide in the design and development of digital library architecture.

- **Service driven:** The architecture for the digital libraries must be driven by the services it provides and tools required for delivering the service.
- **Open architecture:** The architecture must be open, extensible and support interoperability among heterogeneous distributed systems.
- **Scalability:** The architecture must be robust, scalable and reliable in a high transaction rate production setting thousand of patrons with a wide variety of background and information needs.
- **Preservation:** The architecture must ensure persistent access to collection of the digital library, addressing such issues is naming, digital archiving and digital preservation.
- **Privacy:** The architecture must be sensitive to privacy issues and support both anonymous and customized access to resources.
- **Practicality:** The architecture should represent a flexible and practical approach to standards, recognizing the need to balance the level of information collection with economic constrains.
- **Modularity:** The architecture should represent a mix of new technology and legacy pieces, all of which must inter operate while involving at different rates.
- **Time Frame:** The time frame required to plan for system migrations in the coming year as well as planning for a technology generation framework should be approximately 3 to 5 years.
- **Client Support:** The architecture should support a base time level of services which can be accessed with common desktop configuration and

software. Contain higher level service may require proprietary clients but digital library tools and services group should determine the support to these clients.

3. Facets of Digital Library:

Digital Library is popularly viewed as an electronic version of a library. For our understanding, a Digital Library is a library of digitalal documents and records. It is the digitization of the resources as well as of various activities of library. Since Digital Library replaces the paper works and use of hand material in most part and promotes many things in electronic version and information, data does not occupy physical space; it makes a library, often to be called, 'virtual library'.

The phrase 'virtual library 'of 'digital library's seen differently for different users. To computer professionals, Digital Library is simply a distributed information system, a collection to distribute information services, a distributed space of interlinked information or a networked multimedia information system. Those studying in the area of collaborative technologies, like in remote sensing, rocket launching and other space programs, defense and research activities, see Digital Library with network connections as the space where they share not only new knowledge and knowledge products, but also communicate regarding all the matters in time. Those working on educational institutions perceive Digital Library as an indispensable support for teaching, learning and research, whether formal or informal. Hence, Digital Library is most indispensable for all the sections of modern society.

At the juncture of the progress of information technology and electronics a Digital Library is not only limited with materials such as film, video, microfilm and microfiche, which have become out dated and the human resources to tackle only with these printed materials. Among its important components, today's Digital Library contains some relevant electronic machines as well as mechanisms that serve and support for a virtual library system. With such advancements, now a day, libraries are no more connote a unitary lone organism, instead these are treated as a federal system of the patron, client and member organizations working together for digitization and sharing resources within its surrounding, but infrastructures and activities outside its physical geographical existence, such as, information processing units, remote sensing satellites and virtual records and information that are preserved in the form of e-materials on cloud around the world-making the library exist in virtual space. All these alter the physical libraries to be partly virtual libraries, which still are entirely virtual incoming days.

4. Needs & Prospect of Digital Library:

We Know freedom, prosperity and development of society depend upon education as well as on unrestricted access to Knowledge, thought and information. Libraries at all levels, are instruments to assure and promote equal access to information and disseminate knowledge. This need is supposed to be fulfilled by Digital Library, special and academic libraries, along with other libraries, hence, are now forced to assimilate Digital Library system for Management of sources. They have to have an eye, not only on catering the requirement of information for the present generation providing up-to date library services, but also on steps/strategies for shaping the libraries for the hi- tech generation of the future. This necessitates Digital Library. Digitization of information also supports in great many ways to the distance learning, continuing education system, open- university system, training, teaching and learning systems. In order to cater these utilities digitalization of resources is an advantage over the traditional resources in respect to access, assimilation, classification and dissemination of the information.

The explosive growth in networked connectivity and rapid advancements in computing in the virtual libraries or Digital Library, now a day continues replacing older notions of stand –alone information utilities with introducing newer notions of interconnected–ness of Digital Library Information seeking in such Digital Library is found to be more collaborative than generally assumed. Digital Library provides numbers of users to work simultaneously with multiple or same information or source. It also made it possible to access same resource from various sources, while providing various kinds of information, ranging from personal files, work group of enterprise resources, commercial database, to confidential and public archives from the same. To say about all these, the Digital Library provides an effective and indispensable faster means for the amplification of information- intensive work.

5. Challenges, Problems and their solutions

The combined effect of information technology, computer and telecommunication system, have created the provision of Digital Library. These have also helped in a great extent to face the challenge in function and services of Digital Library. In formulating and managing a Digital Library, however, various factors, like, creating Digital Library, collection and management of electronic information, automation and networking, reorganizing of official repository, etc., pose challenges for the library management. In this transition of converting from traditional library to Digital Library, the libraries faces some technological, economical and legal issues

and challenges, particularly, regarding content creation, storage, dissemination of information in digital form and use of communication networks in order to access information itc. While meeting these challenges, library professional's activities are also changing dramatically, mainly, in order to cope with the new environment. All these pose different challenges to the Digital Library.

6. Technical Issues and possible Solutions of Digitization:

Technical issues of digitization are those that are concerned with information. These may fall in three main categories with some possible solution. These are:

(a) Content creation- by information to digital mode (converted digital) or by collection of existing digital resources from other sources (born digital). The solution of this problem is only standardization

(b) Storage of digital information—storage of digital data may be monitored by setting up protective measures like-password protection, selection of operating system and software, antivirus, alerting measures and many more managerial restrictions.

(c) Dissemination of these digital information- It may be controlled at the access point and same time freely disseminated for the benefit of users.

Each of above gives rise to different problems and there may be some solutions to them. Global networks such as the internet together with the developments in information and communication technologies are enabling almost seamless and global access to vast quantities of information resources of wide range and variety. At the same times assurances of quality relevance and appropriateness of such information being made available to the individual user is becoming more complex and difficult. It is highly desirable that each library and information centre formulates and adopts an explicit quality mission and related quality policy in harmony with the quality mission and policy of the parent organization, if any.

Information management like accession, duplication, collection and dissemination etc. always demands a huge amount of financial investment. It is burdensome on a single library or institution to afford for such expenditure in the face of scarcity of grants. Hence Digital Library assumes as well as enforces a federal system of patron and client institution for creating, using and managing digitalization and enjoying as well as sharing information. This, however, involves an issue of confronting copyrights and similar legal issues. This may be tackled by introducing new laws which have the provision for Digital Library and may not be subject to the profit orientation of the business- minded people.

7. Significance and Benefits

From the point of view of economy, faster dissemination of vast quantity of information DL helps the users and the library professionals in a great extent. This happens both in the case that digitization that reduces all time costs of information management and the Digital Library runs in federal manner so that the total cost is shared by the manner libraries. One of the greatest benefits of the Digital Library is bringing together people with formal, informal and professional learning missions. Digital Library combines technology and information resources to allow more access, breaking down the physical barriers between resources. Digital Library allows students, teachers and researchers to take advantage of wider ranges of materials and communicate with people outside the formal learning environment.

8. Conclusion

In the Present era, information is being generated in variety of ways on various formats from various sources. To meet out the situation posed on the library, all libraries may have to build their digital library else have to acquire the capability to access other digital libraries for all their users. It is not possible and suitable for most of the Indian libraries to adopt digitization and convert themselves to be fully Digital Library. Besides, it also poses some unprecedented issues before library professionals who are put in the genesis of mixed libraries, where both the conventional (print media) libraries and Digital Library can function in India.

Former President of India, Dr. A P J Abdul Kalam described the role as digital library is where the past meets the present and creates future. A digital library provides equitable access to knowledge to all the people, irrespective to place caste, creed, colour or economic status. Digital Library unites rather than divide. Therefore there is need of time to develop Digital Libraries.

References

1. 'Digital library Projects and initiatives', information Technology Application in Libraries A text Book for Beginners,(Bhubaneswar: Reproprint (P) ltd., 2004).
2. Kaul, H.K. 'library and information professionals in the 21st Century', University News, (Vol. 36, No. 19, May 11 1998,) p. 11.

3. Mohapatra, M., ed. 'Digital Imaging' Information Technology Application in Libraries A text Book for Beginners, (Bhubaneswar: Reproprint (P) Ltd., 2004).
4. Kalam, A P J , Indomitable spirit, New Delhi, Rajpal, 2007, p.111-179
5. Ramesh, J. Digital Library technologies and services in Digital libraries:- from technology to culture, edited by C. Anandan and M Gangatharan, New Delhi, Kanishka, 2006, p.24-26
6. Allard, D. Digital Libraries: a frontier for LIS education. Journal of Education for Library and Information Science,43(4),233-248

Digital Collections: Preservation and Problems

Ram Roop

Ram Roop, Librarian Rashtriya Sanskrit Sansthan, (Delhi Universtiy).
GangaNath Jha Campus, Azad Park,
Allahabad U.P.
Email- ramroopk1967@gmail.com

Abstract: In educational and research institutions, the quantity of digital content created is huge, and libraries at these institutions have a liability to bring this digital material under guardian control in order to manage and preserve it over time. These all have presented challenge and problems to libraries because of the need for special equipment to display items in these formats, obsolescence of this equipment and/or the formats, and the need to preserve the information contained on sometimes fragile storage media. Now the Libraries are working with the D-Space, Greenstone etc (open-source digital repository platform to explore the problem of capturing research and teaching material in any digital format and preserving it over time. it is a daunting task with few confirmed models, requiring new technology, policies, procedures, core staff competencies, and cost models Problems are not ending; now burning problem is what we should be selected for Preservation for future as this task in not trouble-free. Today the problem of harvesting materials on the web and in information centers for preservation and search is a major concern.

Keywords: Digital Preservation, Digitization

1. Introduction

Now the library materials was extended to include information stored on other physical carriers such as microfilm, film of various types, audio cassette tapes, video tapes, computer disks, CD-ROMS, and DVDs. These have all presented challenges and problems to libraries because of the need for special equipment to display items in these formats, obsolescence of this equipment and/or the formats themselves, and the need to preserve the information contained on sometimes fragile storage media. With the development of the World Wide Web in 1993, which opened up online publishing as an easily available, ubiquitous, and relatively inexpensive means of creating and distributing information, national and other deposit libraries accepted that, once again, they must expand their roles to encompass this new form of publishing and all that its collection, description, storage, management, preservation, and provision of access entailed, There are additional challenges to face over and above those inherent in the formats that they already collected. The volume of online publishing in huge. Almost anyone

can set themselves up as a publisher, meaning that issues of quality and authority of information need to be addressed, as well as a wide range of competence (or otherwise) in using publishing software and compliance in applying standards. In addition, many of these items are complex Web objects-for instance, Web sites that contain a number of different file formats-and this makes strategies for preservation particularly difficult to formulate and undertake. What Should Be Collected and Preserved?

2. Definition of Key Terms

- A record is a document made or received and set aside in the course of a practical activity. Thus a record is not merely private information. As one of our key informants put it, a record has a "fixed content" that can be "re-presented in the structure or form in which it was born."
- An electronic record is record that is created (made or received and set aside) in electronic form.
- An authentic record is a record that is what it purports to be and that is free from tampering or corruption.
- A digital record is one that now exists in electronic form, though it may or may not have been created in electronic form. A digital record may have been crated on paper and digitized later. Subsequent digitization may change its: recordness."
- A digital component is a stored digital object that is necessary to produce an electronic record (or other digital asset).
- Digital assets and digital content refer to all types of information, text, graphic, image, and multimedia.

3. Digitization

Digitization is the process of representing an object, an image, or a signal (usually an analog signal) by a discrete set of its points or samples. The result is called "digital representation" or, more specifically, a "digital image", for the object, and "digital form", for the signal.

Digitization refers to the conversion of non-digital material to digital form (i.e. a form which uses a binary numerical code to represent variables). A wide variety

of materials as diverse as maps, manuscripts, moving images and sound may be digitized.

In the past few years, procedures for digitizing books at high speed and comparatively low cost have improved considerably with the result that it is now possible to plan the digitization of millions of books per year for crating digital libraries[1].

4. Why Active Preservation is Necessary

Society's heritage has been presented on many different materials, Including stone, bamboo, silk, paper and etc. Now a large quantity of information exists in digital forms, including emails, blogs, social networking websites, national elections websites, web photo albums, and sites which change their content over time. According to a report by the US Library of Congress, 44% of the sites available on the internet in 1998 had vanished one year later.

The unique characteristic of digital forms makes it easy to create content and keep it up-to date, but at the same time brings many difficulties in the preservation of this content. Margaret Hedstorm points out that "digital preservation raises challenges of a fundamentally different nature which are added to the problems of preserving traditional format materials"[2].

5. Strategies

In 2006, the Online Computer Library (OCLC)[3] developed a four-point strategy for the long-term preservation of digital objects that consisted of:

- Assessing the risks for loss of content posed by technology variables such as commonly used proprietary file formats and software applications.
- Evaluating the digital content objects to determine what type and degree of format conversion or other preservation actions should be applied.
- Determining the appropriate metadata needed for each object type and how it is associated with the objects.
- Providing access to the content.

There are several additional strategies that individuals and organizations may use to actively combat the loss of digital information

6. Refreshing

Refreshing is the transfer of data between two types of the same storage medium so there are no bitrates' changes or alternation of data[4]. This strategy may need to be combined with migration when the software or hardware required to read the data is no longer available or is unable to understand the format of the data. Refreshing will likely always is necessary due to the deterioration of physical media.

7. Migration

Migration is the transferring of data to newer system environments (Garrett et al., 1996)[5] this may include conversion of resources from one format to another (e.g., conversion of Microsoft Word to PDF or Open Document), form one operating system to another (e.g., Solaris to Linux or from one programming language to another (e.g., C to Java) so the resource remains fully accessible and functional.

8. Replication

Creating duplicate copies of data on one or more systems is called replication. Data that exists as a single copy in only one location is highly vulnerable to software or hardware failure, intentional or accidental alteration, and environmental catastrophes like fire, flooding, etc. Digital data is more likely to survive if it is replicated in several locations. Replicated data may introduce difficulties in refreshing, migration, versioning, and access control since the data is located in multiple places.

9. Emulation

Emulation is the replicating of functionality of an obsolete system (Rothenberg, 1998)[6]. For example, emulating an Atari 2600 on Windows system or emulating WordPerfect 1.0 on a Macintosh. Emulators may be built for applications, operating systems, or hardware platforms. Emulation has been a popular strategy for retaining the functionality of old video game system.

10. Metadata Attachment

Metadata is data on a digital file that includes information on creation access rights, restrictions, preservation history, and rights management[7]. Metadata attached to

digital files may be affected by file format obsolescence. ASCII is considered to be the most durable format for metadata because it is widespread, backwards compatible when used with Unicode, and utilizes human-readable characters, not numeric codes. It retains information, but not the structure information is presented in. Now a day's many libraries use Dublin Core a metadata standard.

11. Selection of the DL Software

The software selection based on set parameters is an uphill task, as the technology itself was still emerging only. In general, what is desirable is a system that is flexible enough to fit the current digital information system as above and to accommodate future migration. That the system should be in a position to embrace almost all predominant and emerging digital object formats and capable of supporting the standard library technology platforms, should be the major focus. There is much digital library software available, proprietary as well as open source, and most of them conform to international standards. As mentioned earlier, VTLS and ACADO are the commercial ones available and popular in the Indian market. Some of the popular Open Source Software's for digital Libraries, which are in use internationally, are 'DSpace', 'Dienst', 'Eprints', 'Fedora', 'Greenstone' etc. Problems/ Challenges

12. Digital Collection Harvesting Problem

Today is the problem of harvesting material on web and in information centers for preservation like a search / selection of imperative pearl (valuable information) in the sea (WWW.There may be varied approach of selection according to needs. Some material may be very classical, important and some may be dynamic (text books etc). Some approaches are the followings[9]:

7.11 Selective Archiving Approach

Each item in the archive is quality assessed and functional to the fullest extent legally recognized by current technical capabilities. A gathering schedule can be individually adapted for each selected title, taking into account its publicati schedule or the frequency with which the Web site changes, thus enabling the content gathered to be as complete as possible. Each item in the records can be fully catalogued and therefore can become part of the national bibliography. Each item in the archive can be made accessible via the Web to readers immediately because permission to do so can be negotiated with publishers. The "significant properties" of individual resources and classes of resources within the archive

can be analyzed and determined. (These are the attributes that convey the full meaning and intellectual content of an item and enable it to be experience as the creator intended.) This enhances our knowledge of preservation requirements and enables risk assessments and preservation strategies to be put in place.

7.12 Whole Domain Harvesting

This involve harvesting not only all the resources in the specific country domain but also identifying those of country origin or subject matter in.com and other generic domains. In theory, the obvious advantage of the whole domain harvesting approach is that the whole domain is captured automatically at periodic intervals with minimal human intervention and therefore comparatively low staff cost per item gathered. The whole domain is available to future researchers, and resources can be seen in their broader context, with links to other documents retained.

7.13 Hybrid Approaches

All of the approaches discussed so far have disadvantages the selective approach misses material that may be of future value, the whole domain model is not as comprehensive as its name would suggest, and collaborative agreements with publishers to date exclude the majority of publishers and a lot of freely available resources. A multi-pronged that combines a periodic snapshot of a country's domain, supplemented by selective archiving of nationally significant, authoritative publications of long-term research value and provision for deposit of publications by agreement with specific publishers would be ideal. Funding is an issue, however, with each approach having its own technical infrastructure and staff support costs.

13. Challenges

While digitization offers great advantages for access, allowing users to find, retrieve, study and manipulate material, reliance on digitization as a preservation strategy could place much material at risk. Rapid obsolescence of digital technologies and media instability render the digitized object vulnerable to loss. The first challenge digital preservation faces is that the media on which digital contents stand are more vulnerable to deterioration and catastrophic loss. While acid paper are prone to deteriorating in terms of brittleness and yellowness, the deterioration does not become apparent in at least six decades; and when the deterioration really happens, it happens over decades too. It is also highly possible to retrieve all information without loss after deterioration is spotted. The recording media for digital data deteriorate at a much more rapid pace, and once the deterioration

starts, in most cases there is already data loss. This

Characteristic of digital forms leaves a very short time frame for preservation decisions and actions.

7.21 Digital Obsolescence

This challenge is exacerbated by the lack of established standards, protocols, and proven methods for preserving digital information[10]. We used to save copies of data on tapes, but media standards for tapes have changed considerably over the last five to ten years, and there is no guarantee that tapes have changed considerably over the last five to ten years, and there is no guarantee that tapes will be readable in the future[11]. Head storm further explained that almost all digital library researches have been focused on "architecture and systems for information organization and retrieval, presentation and visualization, and administration of intellectual property rights" and that "digital preservation remains largely experimental and replete with the risks associated with untested methods." While the rapid advance of technology threats access of digital contents in length, the lack of digitizing standards affects the issue in width.

7.22 Cost

There is always a cost in its creation, its production, and its dissemination. Digital libraries introduce new and uncertain economic realities and relationships into libraries. Where the costs of accessing information were once hidden to patrons, the digital era is likely to require customers who will be required to pay fees for access to digital services and collections. The major obstacle is digitization. Digitization is very cost intensive. Especially when one goes single handed toward digitization.

7.23 Organizational

For building and working with digital Library the long-term organizational, fiscal, and institutional commitments will be necessary. Management of the technical infrastructure for "digital library" services will be a significant obstacle for most libraries, especially as budgets continue to shrink and the costs of developing and maintaining collections increases. Administration of the digital collections locally, is harder and more expensive than managing a comparable print collection.

7.24 Intellectual Property Right

An intellectual property right is a big barrier for preserving the digital documents. Copyright protects the owner's creative or intellectual work. Digitization of documents are involved with complex method for resolving the legal and practical

questions of migrating intellectual property, that includes the creators and owners of intellectual property, managers of digital archives, and actual and potential users of intellectual property[12].

7.25. Lack of Expertise

Digital library are considered by many to be a challenging area. The development of an infrastructure for the networked resources discovery and retrieval of highly distributed, autonomously created, and diverse electronic information is required. Above all, this infrastructure will be to be managed by professionals who understand information need and uses.

14. Conclusion

A strategy with defined selection priorities for digitization is critical and should be informed by a convergence in the consideration for both preservation and access. The focus should be based on traditional preservation decisions such as the value of materials; the condition of materials; use of materials; and material characteristics ensuring a high level of success. For the Library of Congress, items of national interest are prime candidates and digitizing these objects improves access while reducing the wear and tear on the originals[13].

- In India, libraries are facing many problems initially in digital preservation as shortage of fund provided them, intellectual property right issues, less interest of parent institutes and staff.

References

1. Digital Libraries: Principles ad Practice in a Global Environment, Ariande April 2005.
2. Hedstorm. M. (2007). Digital preservation: a time bomb for Digital Libraries. Retrieved on December 4th, 2007, form http://www.uky.edu/~kiernan/dl/hedstrom.html.
3. OCLC Digital Archive Preservation Policy and Supporting Documentation, p.5.
4. Cornell University Library. (2005) Digital Preservation Management: Implementing Short-term Strategies for Long-term Problems.

5. Garrett, J., D. Waters, H. Gladney, P. Andre, H. Besser, N. Elkington, H. Gladney, M. Hedstorm, P. Hirtle, K. Hunter, R. Kelly, D. Kresh, M. Lesk, M. Levering, W. Lougee, C. Lynch, C. Mandel, S. Mooney, A. Report of the task force on archiving of digital information". Commission on Preservation and Access and the Research Libraries Group
6. Rothenberg, Jeff (1988). Avoiding Technological Quicksand: Finding a Viable Technical Foundation for Digital Preservation. Washington, DC, USA: Council on Library and Information Resources. ISBN 1-887334-63-7.
7. NISO Framework Advisory Group. (2004). A Framework of Guidance for Building Good Digital Collections, 2nd edition, p. 27,
8. LIBRARY TRENDS, Vol. 54, No. 1, Summer 2005 ("Digital Preservation: Finding Balance, edited by Deborah Woodyard-Robinson), pp. 57-51
9. Levy, D.M. & Marshall, C.C. (1995). Going digital: a look at assumptions underlying digital libraries," Communications of the ACM, 58, No. 77-84.
10. Flugstad, Myron. (2007) Websites Archiving: the Long-Term Preservation of Local Born Digital Resources. Arkansas Libraries v. 64 no.3 (Fall 2007) p. 5-7.
11. Mange Ram (2005) 'Digital Preservation: A Challenge to Libraries' in Library Progress (International) Vol. 25, No.1 (January-June), 2005. p. 43-48.
12. Gertz, J. (2000 April.) Selection for preservation in the digital age: An overview. Library Resources & Technical Services, 44(2), 97-104.

Document Delivery Services In Jawahar Lal Nehru Library Kurukshetra University, Kurukshetra

Surender Kumar

Ph.D. Scholar, School of Studies in Library & Information Science
Vikram University, Ujjain (M.P.) **Email-surenderkumar20009@gmail.com**

Suresh Kumar Kagra

Ph. D. Scholar, Department of Library and Information Science
Kurukshetra University, Kurukshetra Email.s80kagra@gmail.com

Abstract: The present era increasing advancements in document storage, computers and telecommunications have forced University library and the different formats, styles and sizes. Document distribution has always been heart of the services offered by University library to their users. Presently, there is scattered development in electronic document delivery services and this paper discusses the various constraints and present status of document delivery services in University library.

Keywords: Document Delivery Service, University library, Kurukshetra, Scholars, Reading materials

1. INTRODUCTION

Library is a heart any academic organization/University. The library is a store house of collection of reading materials and makes these learning resources available to the faculty students and researcher for their teaching, learning and research assignments. The Librarian is most important role in the selection of document in the University library and organization. According to Dr. S. R. Ranganathan, the Library is the trinity of Learning Resources, Faculty/students and the Library Staff. Libraries are sustaining to teaching and learning programs by providing the proper information from their in-house collections.

Libraries can use the sharing documents for inter-library loan facility. Due to the growth of electronic publishing era, the libraries started sharing their resources by transmitting digital images of the print documents files of digital documents over the Internet. In inter-library loan, you can get only holdings of the library such as books, journals, reports, standards, etc., from one library to another but for a limited time.

Reader need to return such documents to the lending library after the expiry of loan period. In document delivery, the end-user gets copies of the documents such

as photocopies/ electronic images/ fax images/ electronic files for permanent revived.

2. OBJECTIVES

(i) Understand the role of J. L. N. University Library document delivery services;

(ii) Identify the resource collection, development and usage of document delivery services;

(iii) Suggest the ways for betterment of the document delivery services;

(iv) Satisfaction of the University library user's need; and

(v) Analyses the section of document requirements of University library scholars.

3. DOCUMENT DELIVERY SERVICE IN UNIVERSITY LIBRARY

Document delivery is the most important service in the University library. In University library are many components like, request for document, document types, document sources and functions or processes. Its area includes functions like need of document selection, document retrieval and document transfer. In case of electronic documents, delivery of documents send the e-mail service takes place in digitized form.

In the both print and electronic document deliveries are major components in the University library and there are some agencies that delivered types of document. It is a complex process involving librarian, academic staff, reader, supplier and time. Document acquired in the University library can involve authors, publishers, subscription agents, document delivery service providers, suppliers, libraries and information professionals. Electronic document delivery has gathered most important attention in recent era and through electronic document delivery, one library can access journals and other research publications. For their users and thereby can reduce funds for reading materials purchasing, which can be utilized for other purposes of the library.

The Library is committed to provide document delivery service to the readers and scholars. The objective of this service is to provide the photocopies of the reading materials such as books, periodical collections and other research materials available in the Library at the nominal cost. The main purpose of this

service is provided for assisting the organizations and scholars to pursue their research interests. The readers are required to send the complete bibliographical details of the articles required with complete postal address including e-mail address so that the requested material can be sent using e-mail facility. The Library observes the copyright act provisions while providing the services to the users.

4. NEED OF DOCUMENTS

The present time library can hold every item required to meet the needs of its students and researchers under the crisis faced due to resource requirements. So, sharing of resources using computer networks has become a requirement. Each student and scholar doesn't require the whole book, that he required just few pages which are essential to his research work. Therefore student and scholars prefer document delivery service and the required resource are from other libraries from publishers. The user is usually paid the fees for postage and photocopy charge.

5. MODES OF DOCUMENTS

Document delivery means required documents (copies in print or digital/soft format) are delivered through mail service. Document delivery is three types:

i) Identification of Document; requires the bibliographical details of the documents such as author, article title, source, volume, and pages correctly in a given format.

ii) location of Document; implies identifying the library holdings the documents under reference and user may search by using union catalogues available from library networks.

iii) Document procurement, implies writing to the relevant libraries service providers for delivery documents and that; holdings library/ library networks, document delivery service providers and Searching the Web for digital copies of the documents for free access.

6. ACCESS OF DATABASE IN UNIVERSITY LIBRARY

1. American Chemical Society
2. American Institute of Physics
3. American Physical Society

4. Annual Reviews
5. Economic & Political Weekly
6. Emerald University Collection
7. Institute for Studies in Industrial
8. Institute of Physics
9. J Gate Plus (JCCC)
10. JSTOR
11. MathSci Net
12. Nature
13. Oxford University Press
14. Portland Press
15. Project Euclid Prime
16. Project Muse
17. Royal Society Of Chemistry
18. Science Direct (10 subject collection)
19. SIAM
20. Springer Link
21. Taylor and Francis
22. Web of Science
23. Wiley Blackwell Publishing
24. EBISCO

7. DOCUMENT SERVICE PROVIDERS IN UNIVERSITY LIBRARY

There are several document service providers in JNL University library. Their role is to provide at the present time photocopy of reading materials and digital image. The delivery options are e-mail or any other way. These systems compete with each other in terms of speed of service and nature of resources. The request for the document with complete bibliographical details provides in the University library. The following sections:

- Orientation service;
- Current awareness service;
- Selective dissemination service;
- News papers reading service;
- Users awareness service;
- Reference service;
- Referral service;
- Photocopy service;
- Thesis and dissertations reading service;
- Printed Catalogue service;
- OPAC;
- E-mail;
- Telephone;
- Requests in personal behavior.

8. DELIVERY OF DOCUMENTS

Requested materials will be delivered using any one of the following options depending on your need and payment.

- Issue return book/ documents;
- Print out of photocopy;
- Electronic delivery using email;
- By hand, if the user personally visits the University library.

9. DOCUMENT DELIVERY TIME

Each Document Delivery University library practices their best effort to deliver the requested materials as early as possible. Of the University library, students and scholars provides the book and other reading materials during this period 15 days. The 50 Paisa per day are charged for the users and teachers are charged 1 rupees of library service.

10. CONCLUSION

The University library provides the pin pointed Document Delivery services in proper and very short time service to the user. This is one of most important services in present era and this service has helped to save the time of research scholars/ students of the University library. The University libraries have to take this facility to their user, and encourage to others. In the recent information technology era, where a user asks for pin pointed information of resources, Document Delivery service can be proved to be an important service to be provided to the users.

REFERENCES

1. Baker, D. (2003). Document delivery: a new paradigm?. *Interlending & Document Supply*, 31(2), 104–110.
2. Bower, G. (2005). Docusend: the one-stop, integrated, document delivery broker service. *Interlending & Document Supply*, 33(1), 8–13.
3. Crowley, G.H. (1999). Unmediated document delivery: a project using First Search and EBSCO doc. *Interlending & Document Supply*, 27(3), 122– 127.
4. Dehlez, P., Leeuwe, J., & Dekker, R. (2005). "Beyond the photocopy machine" revisited: document delivery in a digital library environment. *Interlending & Document Supply*, 33(3), 140–144.
5. Echeverria, M., & Barredo, P. (2005). Online journals: their impact on document delivery. *Interlending & Document Supply*, 33(3),145–149.

Institutional Repository of Maitreyi College Library: A Study

Dr. Pardeep Rai

Librarian, Maitreyi College, New Delhi

Ms. Rajni Bhanot

Semi Professional Assistant.
Maitreyi College, New Delhi

Abstract: Countries thirst towards "Digital India", society gets new and dynamic platforms. The traditional approach was very passive but now days it shifted to more participative. Libraries are also changing from its contemporary form to electronic span. Eventually society is overloaded with information from multiple sources. The study is about digitization process in Maitreyi College Library. DSpace (Institutional Repository) has metadata standards (Open Archives initiative protocol for metadata harvesting OAI/PMH) which help to ensure that work are more findable on the internet and the libraries will be able to take care to archive and preserve their document for future generations.

Keywords: DSpace, Institutional Repository, IR

1. Introduction:

An institutional Repository (IR) archive consisting the collection of scholarly work that represents intellectual capital of an institution and accessible for long duration. By using Institutional Repository (DSpace) in institution helps to manage digital documents produce and also to increase maximum access output, which increase the prestige of both the institution and the author.

Open Source Software:

Open Source refers to a programme of a software in which source code (the form of the program ,in which a programmer writes a programme in a particular machine language) is available to general public for use /modification from its original design. Open source code is the code which is typically created as collaborative efforts of a programmer team in which they helps community to solve problems on different levels, Sharing new developments and do continuous research on that programme.

2. Free Software:

The term Free Software was coined by Richard Stallman. Its purpose reflect in its name, (All Free).Users have authority to copy and run programme, distribute further, modify as per their requirements. This facility or nature of a software legally embedded in a software license called GPL (General Public Licence)

3. Definition of Institutional Repository (IR):

Clifford Lynch, "a university-based institutional repository is a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to stewardship of these digital materials, including long –term preservation where appropriate, as well as organization and access or distribution."

Johnson defines an IR simply as" a digital archive of the intellectual product created by the faculty, research staff and students of an institution and accessible to end –users both within and outside of the institution with few if any barriers to access".

4. Following are the famous open source software for creating digital library (Institutional Library):

DSpace

Greenstone

Fedora

E-prints

All these software are doing well, but Maitreyi College Library Choose DSpace for their institutional Repository.

5. Features of Institutional Repository:

Institutional Repository is an open access repository of any institution to serve as a place to

- Permanently archive research and other material in different forms such as:
- Previously published materials(Articles, Book Chapters, Question Papers, Syllabus etc)

- Conference work, Seminar Reports or all type of scholarly works
- Important Lectures(Ex: Translated Works)
- Data files and databases

6. About DSpace

Definition: According to crow (2002)" The essential characteristics of an IR are that it is institutionally defined, scholarly in scope, cumulative and perpetual, open and interoperable".

According to Massachusetts Institute of Technology (MIT) (2002) a project titled DSpace" to build a stable and sustainable long – term digital storage repository that provides an opportunity to explore issues surrounding access control, rights, management, versioning, retrieval, community feedback, and flexible publishing capabilities".

6.1 Features of Dspace:

6.1.1. Open Source Software:

DSpace is open source software under BSD licence developed by or available at DuraSpace. DuraSpace took over supporting the DSpace in July, 2009.The BSD distribute licence freely as open source software from SourceForge. Different type of link for downloading DSpace on different operating systems. Ex: tar.gz for linux.

6.1.2. Widely Accessible:

Collections of different content are accessed through a standard web browser under different main and sub headings.

6.1.3. Multi-Platform:

Compatible with almost all operating systems (ex: windows and Linux). Users and developers (persons from all communities) are involved in updating versions and solving problems on different platforms.

6.1.4. Meta Data Driven:

Meta data pattern is used for browsing search. Almost each document and sections are associated with each Meta data. Dublin core metadata is the default metadata format .However user can use/customized as per needs.

6.1.5. Multi Language:

Unicode is used to make it compatible with all type of user's web browser. There

is also facility to built separate indexed in different languages.

6.1.6. Customizable:

Dspace is completely customizable and user chooses modules as per their requirements. Customize theme in user interface give institution freedom to choose theme of their institution website and can be more intuitive for users.

6.1.7. Browse and Search:

DSpace facilitates user to choose their search fields for browsing by different metadata types for ex: by author, title, date or type of document

6.1.8. Local Authentication Mechanism:

DSpace has its own internal authentication methods based on I.P. but it also gives option to customize authentication plug-in for accessing database.

6.1.9. Standards:

DSpace compiles with almost all standard protocols for harvesting metadata (Exporting content between repositories) uploading data in different formats for ex: OAI-PMH, RSS, Linked (Open) Data etc.

6.1.10. Useful for Other Organizations:

DSpace is not only using by educational institutes, but also used by government and corporate sectors to preserve their digital material for long time.

6.1.11.Statistics:

DSpace has facility to provide user statistics, No. of item visited, Collection visited, Community visited, OAI requests, No.of logins, Popular search, total(monthly) and also support SOLR Statistics and Google Analytic.

6.1.12. Interface:

Dspace has two interfaces. Administrator interface (XMLUI) and User interface (JSPUI).

Administrator Interface (XMLUI):

Administrator interface Apache Cocoon framework (XMLUI) have all rights for content uploading, customized outlooks and to give, add and delete authorities to E-people (Submitter, Receiver and editor).

Following diagram shows work flow of e-people.

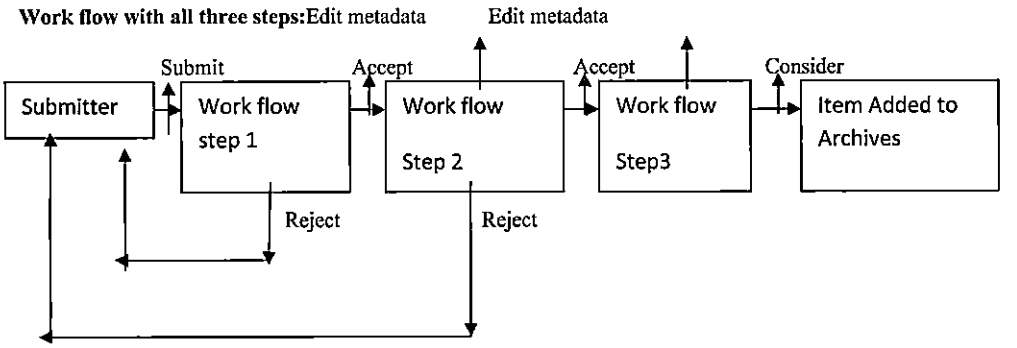
Administrator create submitter (Who submit research document), Receiver (authorized persons or specialized persons of that particular subject), editor

(Who upload content after approval of the document from authorized persons. Work flow shown in following diagram:

Step1: May reject the Submission

Step2: Edit metadata and approved or reject

Step 3: Edit Metadata



User Interface (JSPUI) : User interface based on Java server pages (JSP) has all privileges at user end for getting their document on user interface.

7. Librarian's role as Administrator/ Curator in IR:

In this information age responsibility of librarian is shifted as per the need of users.

Nixon rightly observed that" Reference librarians are a library's eyes and ears. They understand user's needs and perceptions. They know what's working and what's not. When they act as subject selectors, they are the library's primary liaison with faculty in their subject areas and its most visible representatives. They know how to help, inform, persuade, and teach users. For an IR to succeed, it is essential that they be involved in its planning, implementation and operation".

In Academic Libraries following are the basic responsibility towards institution and user.

Curious: Librarian must be literate about the IR concept to provide maximum use to its user from technology.

Rich Content: This is the responsibility of librarian to create secondary publication in digitized form and create awareness of its use among students and faculty members.

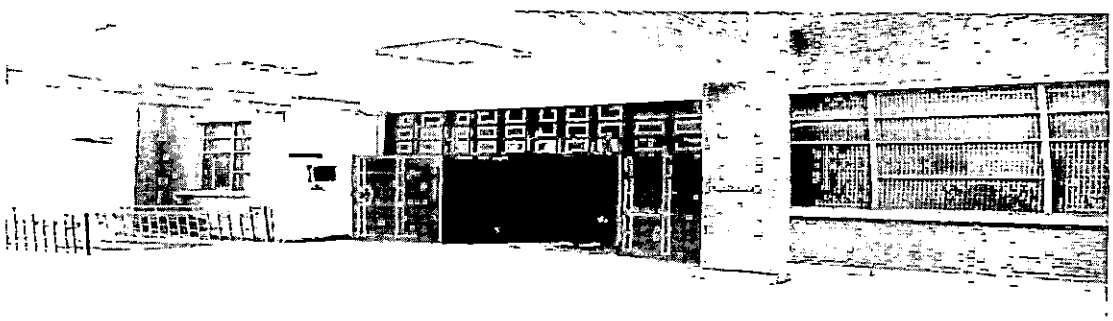
Administration and Curator: Librarian play role of administration when he/

she manage and update content and as a curator, while preserving the document. Even though libraries have rich content, effective administration make it possible with the help of updation and specialization (specially staff).

Training Programme: Librarian should be arranged training programme time to time for different purpose for different people. (Ex: staff, faculty and students to use IR and help them out from their queries.)

8. Glimpse of Maitreyi College Library

Maitreyi college library was established in 1967 since the inception of the college. The present building of the library located at the centre of the college campus came into existence in 1989. The library has excellent collection of text, general and reference books to support academic requirements of students & faculty members. For Library Management Software (LMS) Maitreyi College Library using the "**SOUL,** software for the library. It is user friendly software which facilitates the students to search their information via six types of search facilities. Students can easily find the desired book available in the library and the exact rack location of the book. The students can get this information through OPAC function of SOUL software. Maitreyi College subscribed N-List (INFLIBNET) specially designed consortium or database for colleges which have thousand E-Journals and Crore E-books.[1]



8.1 Need of Institutional Repository:

Presently Maitreyi College Library not able to provide e-format of research papers or articles published by faculties or professors, Old syllabus(frequently demanded by the users, who are applying for foreign (Higher Studies) and they need syllabus for transcription for submission/demanded by their respective foreign universities).To provide all these materials (research Papers, Question papers, College Annual Reports and College Magazines) for multiple users at one place is Institutional Repository (DSpace) at Maitreyi College.

8.2 Objectives:

1. To provide open access to institutional research output by self –archiving it and global visibility.
2. To collect content in a single location.
3. To store and preserve other institutional digital assets, including published or unpublished for references.

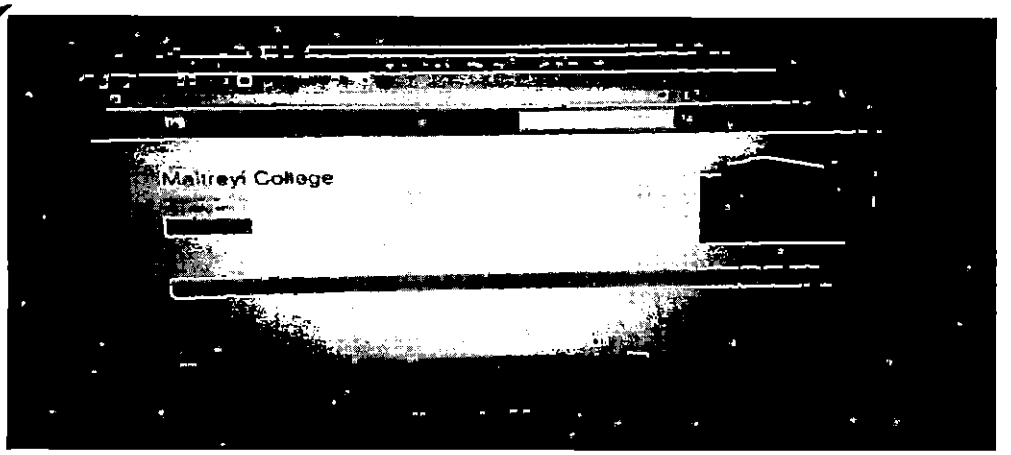
8.3 Methodology:

Library used centos 6 and DSpace to create web page and give access to users. For collecting the data research Publications of faculty and students, old question papers from examination department/centre and collect the photographs, news paper clippings ,College magazines from administrative block and different departments.

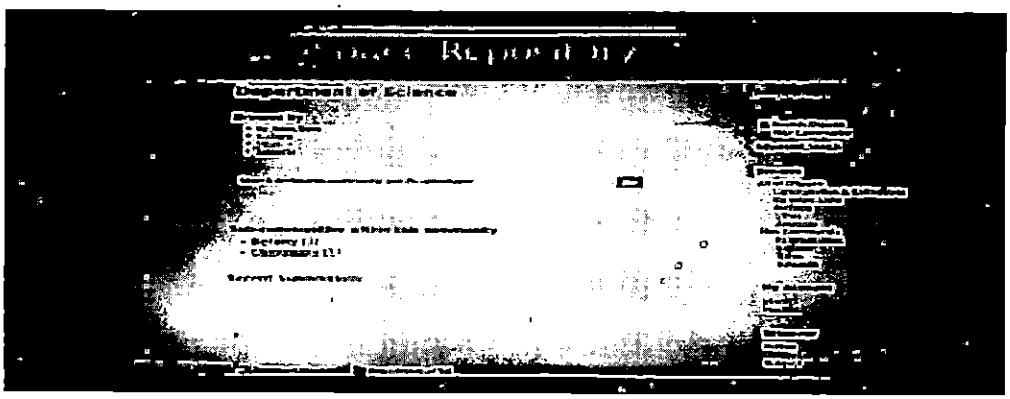
8.4 Installation:

Maitreyi College Library DSpace Home Page:

Administrator Interface:



User Interface:



9. Conclusion:

DSpace fulfils all expected positive results of an institutional Repository. Presently Maitreyi college library providing its repository on intranet, besides the following documents are in process of digitization (scanning) and uploading.

S.NO	Type of Document	From	To	No. of Documents
1.	Annual Reports	1972	2014	42
2.	College Magazines	1972	2012	36
3.	Old Syllabus	1970	2001	303

References:

1. ("Maitreyi College," n.d.) http://maitreyi.ac.in/default.aspx

Authors Profile



Dr. Pardeep Rai is working as Librarian at Maitreyi College (University of Delhi), New Delhi. He holds M.L.I.Sc. and M.Phil. Degrees from University of Delhi. He has many publications to his credit and edited three books. He has participated and involved in many national and International conferences. E-mail: raipardeep@gmail.com



Ms. Rajni Bhanot is working as Semi- Professional Assistant at Maitreyi College (University of Delhi), New Delhi. She hold M.A , M.LI.Sc degree, PGDLAN, PGDCA, PGDLIM, Diploma in French. She is having more than 07 years professional experience. She has attended many seminars and conferences.

E-mail: rbbhanot@gmail.com

Library collection quality measurement through p-index

Sandhya Dwivedi

Post Doctoral Fellow
Department of Library & Information Sciences
Banaras Hindu University, Varanasi
E-mail: sandhpandey79@gmail.com

Abstract: This study is the application of p-index on library circulation statistics to explain quality and quantity of library book usage by subject. Two dimensional map of quality vs quantity of transactions applied to explain the better understanding and evaluation of library usage. Study performed on Central Library, Banaras Hindu University. An analysis of, 121874 two year transaction of 30698 books listed in 29 main subject fields. The h and p index computed for different subject. The h and p indices and quality-quantity map used for monitoring library performance in addition to finding out high value areas in the library collection. One can find that maximum transaction in observed in chemistry, whereas minimum transaction is seen in spiritual field. Chemistry (h-33, p-46.5) and Literature (h-25, p-38.63) have p considerably greater than h. In only one instance is p considerably less than h – Economics (h-39, p-36.2). Chemistry ranks highest in p-index followed by Literature.

Keywords: Collections management, Libraries, Usage statistics, h- index, p- index

1. Introduction

Performance measurement should be an essential part of every organisation. Without assessing its performance an organisation cannot ensure that it is using its resources to the greatest effect. Neither can it be sure that it is continuing to meet needs within society. Performance measurement is a crucial criterion for evaluating the competence and achievement of an organization. It is an important part of the overall management information system of the library or library system and helpful for libraries to identify their library management objectives and their implementation, allocation of manpower, budgets and resources. However, it is difficult to implement library performance measurement due to complexity in practice. Performance measurement studies in university and public library have attracted the attention of many library and information science researchers all over the world. The three main ways described in the literature are quantitative, qualitative, and usage based. These three methods measure respectively whether a library has "enough" books, the "right" books, or books that are being used. Each method contains its own assumptions about the library's collection goals. Though

the present study is only usage-based,

The h-index[1] is one of the more-commonly used metrics to evaluate the publication performance of researchers. The h-index tries to encapsulate in a single number, the quality and quantity of a scientist's (or at higher levels of aggregation, that of journals, groups of scientists, institutions and even countries) output. Basically, it is a geometrical construction, but showed a good correlation to both quantity (productivity as measured by number of papers published) and quality (as represented by the number of citations received). It has been found to be very effective, especially in instances where h tends to be high.[2-3]. Prathap[4]explained an ideal performance indicator - a moch h-index, that can capture the multi-dimensionality of the problem (i.e. evaluating activity/quantity and excellence/ quality), is that it must be intuitive, and must increase when the quantity (total papers P or total citations C) increases and the quality increases (mean citation rate C/P).

Earlier, Prathap[5] has proposed a new p-index (which parallels what h does and has the same dimensions) which allows the ranking of entities (authors, groups, institutions or countries) taking into account productivity (number of papers P) and quality (impact defined as the ratio of citations to papers,). It can be applied to any source-item relationship, as was shown using a sports example taken from cricket[4]. The *p*-index strikes the best balance between activity (total citations *C*) and excellence (mean citation rate *C/P*). The *p*-index gives the best balance between quality (*C/P*) and quantity (*C*). This is not surprising because by definition, the performance index is based on the substitute or mock index, $p = h_m = (C^2/P))^{1/3}$ and has the significance of a "geometric mean" that is consistent with the dimensions of *h*, and therefore should give the best balance between *C* and *C/P* for any non-linear process governed by random multiplicative processes. The composite indicator (p-index) has the form $(CC/P)^{1/3}$ where C is the measure of the quantity of the item activity and C/P is a measure of the quality of the item activity as a ratio of the source size. Unlike h, p is a mathematically defined composite indicator of quality (C/P) and quantity (C). Therefore it is expected to correlate well with both quality and quantity. A two-dimensional map of these two quantities, namely h and p, gives a fascinating description of the activity. Although the h-index was introduced in a publication-citation context, the idea found applications in many source-item situations.[6-7] Liu and Rousseau[8] applied it to a library setting, showing that rankings of library classification categories using the h-, g- and R-index are statistically equivalent, and have similar discriminating power.

In this paper, author try to examine the practicability of using the h- and p-indices as well as the use of a quality-quantity two-dimensional map to extend the above ideas to the categorization of the loaning activity of Sayajirao Gayakwad library, Banaras Hindu University. This precise application is to the subject-wise assessment of loan patterns.

2. Literature Review

Library assessment is a process undertaken by libraries to learn about the needs of users (and non-users) and to evaluate how well they support these needs, in order to improve library facilities, services and resources. Researchers have studied time to time the performance measurement for quality improvement of library services, collection, evaluating teams and organizational effectiveness, etc. by using different library statistics. Shibanda[9] worked on principles relating to acquisitions policy and collection development as performance measurements for Mui University Library. Day and Revill[10] explained library performance exercise based on library circulation data gathered by Dynix Library System of Learning Services Library at Liverpool John Moores University. Collection evaluation enabled the library to identify high and low performing subject areas and examine budget allocations. Russell[11] used the performance measurement to evaluate teams and organizational effectiveness. Meera[12] examined the role of performance measures in quality improvement of library services. He attempted to identify and enumerate performance indicators and units of measurement for different library operations. Dee et al.[13] analysed periodical usage and concluded that these studies are useful for evaluating collection performance relative to library use. Vattulainen[14] made a study in two Finnish university libraries for identifying high performance inter loans libraries using costs, fill rate, time and user satisfaction criteria. Sondergaard[15] studied the performance measurement by examining the performance measures seen from the borrowing library's view point in terms of its in-house handling time of patron requests and the general inter loans delivery time. Henderson[16] used the ratio of interlibrary borrowing to collection size i.e. collection failure quotient (CFQ) for evaluating the performance of libraries. He concluded that if the measure of library service is that users obtain what they seek when they seek it, the CFQ is a true indicator of failure. Ochola[17] analyzed circulation statistics of central university libraries, Baylor University, Texas. The study concluded that although the libraries are meeting the needs of undergraduate and graduate programs, there is need for a closer scrutiny of some areas of the collection that attract less circulation and interlibrary loan requests.Lu[18] studied the performance measurement of library and public library in theory and practice,

the public library performance measure indicators, as well as the compilation and implementation of performance measurement and measure indicators in public libraries in Taiwan. Knievel et al.[19] analyzed the holdings, circulations, and interlibrary loan (ILL) borrowing requests of the English-language monograph collection at the University of Colorado at Boulder. The resulting data and subject distributions were analyzed by overall holdings, transactions per item, percentage of collection circulated, and a ratio of ILL holdings to requests. Sahu[20] measured the service quality of Jawahar Lal Nehru University (JNU) Library by measuring the perceptions of the JNU library users as they relate to quality service through SERVQUAL quality management instrument. Hyodynmaa[21] illustrated a technique to map, evaluate and describe subject based collections by applying this method on Tampere University Library. Prathap and Mittal[22] examined the NISCAIR library circulation data and computes h & p-index for comparing usage in different subjects. Kohn[23] used circulation statistics for four year and explain how the knowledge gained from this evaluation lits into the larger toolkit of librarian competencies for collection development.

The review of literature showed that the performance evaluation is not new for libraries and librarians. It seems that for evaluating library performance based on the collection, type of library services qualitative and quantitative methods are required. Meanwhile, the review showed few studies done based on library circulation data for collection evaluation. There is a need for such a study to be conducted in order to review collection development policy, to achieve goal of the library. Results of the study may help to understand the problems associated. Findings of the study would be useful for libraries to improve the quality of collections in future.

3. Evaluation of loaning activity of Central library, Banaras Hindu University

The Sayaji Rao Gaekwad Library, also known as the Central Library, is the main library of Banaras Hindu University (BHU) in Varanasi, Uttar Pradesh in India. Established in 1917, The Banaras Hindu University Library system was established from a collection donated by Prof. P.K. Telang in the memory of his father Justice Kashinath Trimbak Telang in 1917. Presently the Banaras Hindu University Library System consists of Central Library at apex and 3 Institute Libraries, 8 Faculty Libraries, 25 Departmental Libraries, with a total collection of over 13 lakh volumes to serve the students, faculty members, researchers,

technical staff of fourteen faculties consisting of 126 subject departments of the university. Beginning with a small but precious donated collection, its grew, to cater the need of their users and today besides cyber library, the library has over 976411 printed books, 133792 journals (bound volumes), 406 current journals, 7233 manuscript, 3632 goverment publications and rare books, 11272 online journals, 10 databases, 52560 e-books. Reference sources, journals, Ph.D theses, manuscript, rare books & gov. pub. are not available for loan.

4. Methodology

Data downloaded for this study from circulation desk, Central Library, BHU. Data downloaded, keeping focus on various parameters of study for calculating p and h-index and then unfolded for calculation of these indexes. Author followed same methodology for this study with some modifications that proposed by Liu and Rousseau[8], as the purpose here is to demonstrate the use of the h- and p-indices simultaneously and the power of the two-dimensional mapping using the quality of transactions and quantity of transactions.

An analysis of, 121874 two year transaction of 30698 books listed in 29 main subject fields from 1-Jan-2015 to 31-12-2016. Books are categorized by following the subject classification that followed by circulation section for making entries on each loan. Table 1 shows the books arranged into subject categories for the purpose of the study. In each subject category, the number of books loaned is taken as the source term (P) and the books themselves are then ranked according to the number of loan transactions in decreasing order, giving a total of transactions (taken as the item term (C)). The h-index for the subject category is then obtained as the number h of books that have had h or more transactions. Taking the source term as P and the item term as C, the p-index is calculated. A two-dimensional map of these two quantities gives a vivid description of the activity.

5. Data Analysis and Discussion

Table 1 list the loaned amount of book according to subject categories in decreasing order of no of transaction of books of particular subject. Both p and indices are shown. Table 1 shows maximum transaction in Subject- Literature, transaction 19738 times of 6756 books, followed by History, transaction 11255 times of 3059 books and Economics, transaction 11252 times of 2670 books. Figure 1 shows the average no. of transaction per item by subject. From figure it is clearly observed that maximum transaction in observed in chemistry, whereas minimum

transaction is seen in spiritual field.

Table 1: Loan Activity according to subject classification

Subject	Books loaned	Total transactions	h-index	p-index
Literature	6756	19738	25	38.63
History	3059	11255	30	34.6
Economics	2670	11252	39	36.2
Sociology	2344	9481	29	33.72
Psychology	1739	7341	27	31.41
Mathematics	1293	7315	32	34.59
Chemistry	527	7283	33	46.52
Biology	683	4971	31	33.07
Political Science	1059	4658	25	27.36
Philosophy	1150	4133	21	24.58
Geography	718	3756	26	26.98
Religion	1337	3445	16	20.71
Physics	515	3410	25	28.26
Fine Arts	966	3125	16	21.62
Education	825	2899	19	21.68
Linguistics	974	2686	15	19.49
Botony	335	2261	23	24.80
Engineering	483	2217	21	21.67
Medicine	417	1375	13	16.55
Geology	228	1323	18	19.73
Zoology	251	1233	16	18.23
Agriculture	271	841	12	13.77
Spiritual Experience& Mysticism	370	824	9	12.24
Law	280	782	10	12.97
Library Science	300	735	9	12.17
Useful Arts	282	733	11	12.4
Journalism	186	464	8	10.5

Research Methodology	51	447	11	15.76
Technology	119	364	8	10.36
Other Subject	510	1527	13	16.6

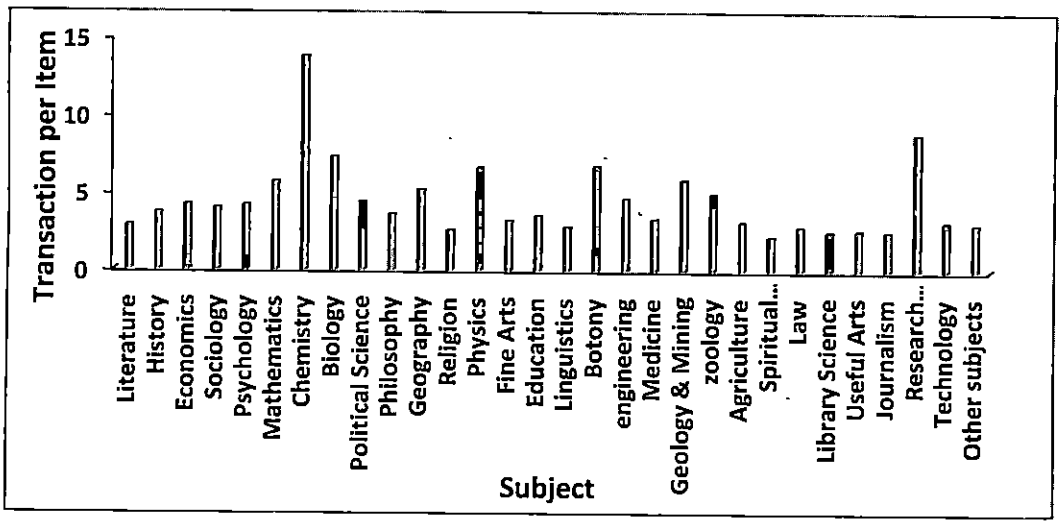


Figure 1: Subject wise average no. of transaction per item

Figure 2 shows the two-dimensional scatter plot of h- and p-indices for the various subject categories. A good correlation (0.87) is found. It is noticed that these two quantities, namely h and p, are independently derived. The former is based on a geometrical construction while the latter is a mathematically defined composite indicator. Together, they give a vivid description of the activity. In general, we find p>h. The figure 2 shows that most of the points fall on this trend line but three points stand out as outliers. Chemistry (h-33, p-46.5) and Literature (h-25, p-38.63) have p considerably greater than h. In only one instance is p considerably less than h – Economics (h-39, p-36.2). It may be due to prevalence of old editions or non-relevance of books on the subject.

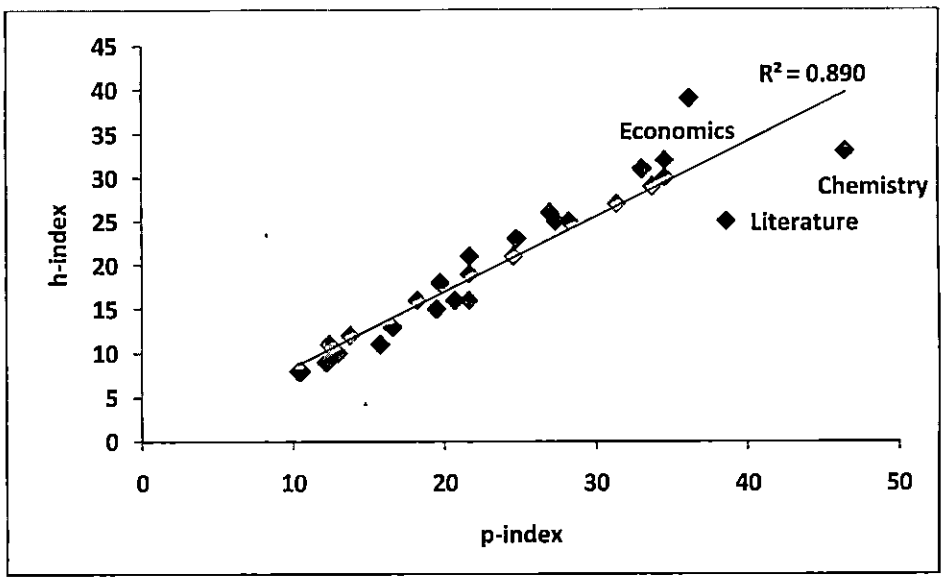


Figure 2. Scatter plot of h- and p-indices for the loaning activity subject-wise

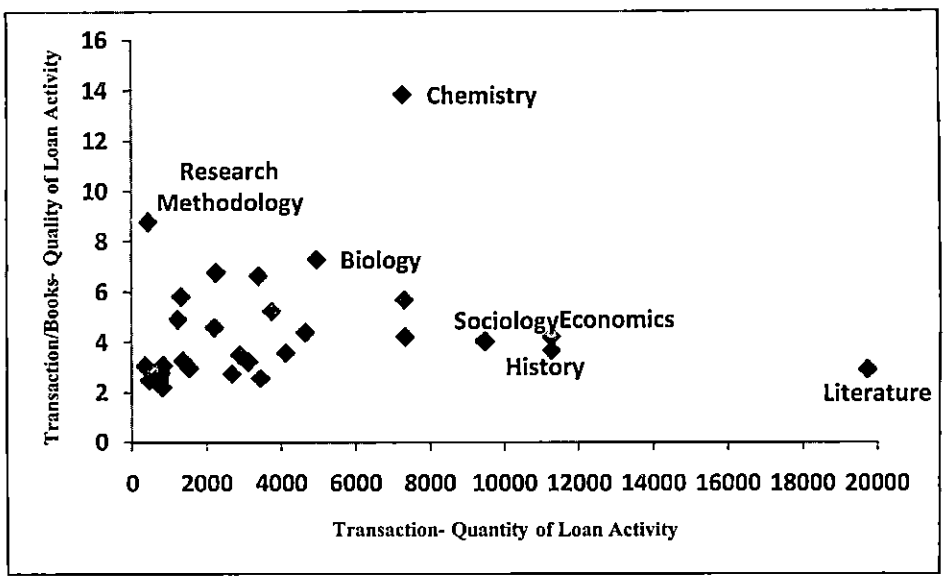


Figure 3. Map of quality vs quantity of loan transactions

Figure 3 is a very interesting map of quality vs quantity of loan activity. The number of transactions is taken as a proxy for quantity of loan activity and the ratio of transactions to books becomes the proxy for quality of loan activity. Chemistry

and Research Methodology inviting high intensity activity and Literature is seen to have higher volumes of activity. Chemistry ranks highest in p-index followed by Literature. This could be attributed to high user population, addition of latest books, etc. in these areas in comparison to other subject areas.

6. Conclusions

The performance index (p-index), which can effectively combine size of an item (C) and quality of the source-item relationship (C/P), along with the h-index, was used to produce a two dimensional map that can give visually meaningful pictures of subject-wise library usage. Maximum transactions are observed in subject-Literature, transaction 19738 times of 6756 books, followed by History, transaction 11255 times of 3059 books and Economics, transaction 11252 times of 2670 books. It is also observed that maximum transaction in observed in chemistry, whereas minimum transaction is seen in spiritual field. Chemistry (h-33, p-46.5) and Literature (h-25, p-38.63) have p considerably greater than h. In only one instance is p considerably less than h – Economics (h-39, p-36.2). Chemistry ranks highest in p-index followed by Literature. This could be attributed to high user population, addition of latest books, etc. in these areas in comparison to other subject areas.

7. Acknowledgement

Thanks to Central Library, Banaras Hindu University for providing the necessary data and assistance for study. University Grant Commission (UGC), New Delhi is thankfully acknowledged for financial assistance.

References

1. Hirsch, J.E. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the USA*. 102 *(46)*, 16569-72.
2. Bornmann, L. and Daniel H. D. (2005). Does the h-index for ranking of scientists really work? *Scientometrics*. 65 (3), 391-2.
3. Hirsch, J. E. (2007). Does the h index have predictive power? *Proceedings of the National Academy of Sciences of the USA*. 104(49), 19193-8.

4. Prathap, G. (2010). Is there a place for a mock h-index? *Scientometrics.* 84(1), 153-65.
5. Prathap, G. (2010). The 100 most prolific economist using the p-index. *Scientometrics.* 84, 167-172. doi 10.1007/s11192-009-0068-0
6. Egghe, L. and Rousseau, R. (2006). An informetric model for the Hirsch index. *Scientometrics.* 69(1), 121-9.
7. Braun, T., Glanzel W. and Schubert A. (2005). Hirsch-type index for journals. *The Scientist.* 19 (22), 8.
8. Liu, Y. and Rousseau, R. (2009) Properties of Hirsch-type indices: the case of library classification categories. *Scientometrics.* 79 (2), 235-48.
9. Shibanda, G. (1994). Collection development as performance measurement. *Library Review.* 43 (8), 44-8.
10. Day, M and Revill, D. (1995). Towards the active collection: the use of circulation analyses in collection evaluation. *Journal of Librarianship and Information Science.* 27 (3), 149-57.
11. Russel, C. (1998). Using performance measurement to evaluate teams and organizational effectiveness. *Library Administration and Management.* 12(3), 159-65.
12. Meera, B.M. (1998). Performance measurement: a criteria for quality improvement in library and information services. *Library Science with a Slant to Documentation and Information Studies.* 35(3), 149-56.
13. Dee, C. R., Rankin, J.A. and Burns, C. A. (1998). Using scientific evidence to improve hospital library services: southern chapter/medical library association journal usage study. *Bulletin of the Medical Library Association.* 86 (3), 301-6.
14. Vatulainen, P. (2000). Interlending performance measurement in the Nordic countries: a project plan. *DF Revy.* 23 (10), 307-8.
15. Sondergaard, P. (2000). ILL performance measurement. *DF Revy.* 23(10), 320-322.
16. Henderson, A. (2000). The library collection failure quotient: the ratio of

interlibrary borrowing to collection size. *Journal of Academic Librarianship.* 26 (3), 159-70.

17. Ochola, J. N. (2002). Use of circulation statistics and interlibrary loan data in collection management. *Collection Managemen*t. 27(1), 1-13.
18. Lu, S. (2005). Performance measurement and measure indicators for public libraries. *Bulletin of Library and Information Science.* 53, May, 23-42.
19. Knievel, J. (2006). Use of circulation statistics and interlibrary loan data in collection management. University Libraries Faculty & staff contribution. 47. http://scholar.colorado.edu/libr_facpapers/47?utm_source=scholar.colorado.edu%2Flibr_facpapers%2F47&utm_medium=PDF&utm_campaign=PDFCoverPages
20. Sahu, A. K. (2007). Measuring service quality in an academic library: an Indian case study. *Library Review.* 56 (3), 234-243.
21. Hyodymnaa, M. Ahlholm-Kannisto, A. and Nurminen H.(2010). How to evaluate library collections: a case study of collection mapping. *Collection Building.* Volume 29, (2), 43 – 49. DOI 10.1108/01604951011040125.
22. Prathap, G. and Mittal, R. (2010). A performance index approach to library collection. *Performance Managemnt and Metrics* 11(3), 259-265.
23. Kohn, K. C. (2013). Usage-based collection evaluation with a curricular focus. *College & Research Libraries.* 74 (1). Retrieved from http://crl.acrl.org/content/74/1/85.full.pdf+html

Library Consortium: Resource Sharing in Digital Age

Subhash Chandra

subhashbbau@gmail.com
Ph.D (Research Scholar)
DLISc., BBAU

Bhoopendra Singh

bsmauryadlis@gmail.com
Ph.D (Research Scholar)
DLISc., BBAU
&

Dr. M.P. Singh

mpsinghdlis@gmail.com
Head & Associate Prof.
DLISc., BBAU
Lucknow-226025

1. Introduction:

In digital environment information is originating in massive amount and being widespread, due to the electronic publishing and open access, there is information explosion on internet. In this digital era libraries are unable to satisfy to users information need in all aspects. However library contains huge amount of literature matching with users need and related to various field, but it is still remains to satisfy completely to its users. Libraries are transforming itself tradition to digital by enriching with electronic and digital collection and libraries are digitizing its traditional and print literature into electronic format. It is happening due to the revolution of information communication technology in order to achieve the objective of library. Libraries are adopting the concept of resource sharing to share resource, services, expertise and also manage space. Information communication technology had mode ease to create subject database, Institution Repositories. Storage of information and remote access, that also helps to libraries to serve better to its user. These advanced technology resulted the concept of library consortium.

Emergence to open access and online access drastically changes to the functioning and performance of performance of libraries. Now these days libraries are facing change arrangement. Digitization has eliminated the boundaries of

library and the resource available within the library co-operation, resource sharing its playing vital role to service libraries and to serve users better. In libraries, to manage the intervention the information is not just possible with human resource, it also requires various tools. ICT has introduce avoid variety of components, gadget that helps to libraries in the creation of collection and then in management too. Internet habited users to access quick also libraries should have to quick to cope with the users query and to answer them immediately; in this activity resource sharing. Library co-operation and library consortium are best suited to library.

2. Background Studies:

Study conducted by Amitabha Chatterjee on resource sharing among libraries in digital era: role of consortia study discussed on various libraries consortium, their functions, services and wide spread networks such as CALIBNET, MALIBNET, DELNET, and INFLIBNET initiated by NISSAT. Study concludes that only DELNET and INFLIBNET have better records but still they should improve its organisation. Now some consortium established newly and serving qualitative resource. Study suggested three approaches to boost resource sharing activities in the country. These approaches are: strengthening and enriching with qualitative resources to consortia. To establishing new consortia for resource sharing as per institutions need. Linking to consortium with their networks that are working on some direction; it all will take sometimes to run constantly and successfully. Another study conducted by Hazel Woodward (2009) on digital collections and services: the future role of academic libraries and library consortia. Study discussed about e-journals in Digital Libraries importance of e-books, relevancy of open access system in libraries to make effective use. Study describes other digital collections such as e- publications, multimedia resources, e-thesis and dissertation. Study focused on the role of library consortia that role of libraries consortium to share burden on libraries such as budget, collection, services and system. Study also highlighted the developing services for the digital libraries like online search service, internet browsing. This study pointed that some institution in the UK has banned to students from using Google. This report highlights that students and researchers have difficulty in evaluation of quality of information so in this situation they may be misguided from internet available resources. Study made final comment about the role of the libraries in future, librarians need fundamental, shift to trained and adopt with current technologies and how they perceived their role. Another study conducted by T. Bala Theresa and Ratna kumara (2014) on library networking and consortia digital resources sharing. Study described

resource sharing as a concept which contains group of activities between library and information centers. Advancement of the technology made easy to cooperation among the library and reduces the physical activities. Document sharing is the basic of inter library cooperation and helps to develop collection. Resource sharing and library consortium aimed to use and share information resources effectively and to manage resources such as collection, staff and services efficiently and effectively. Another study conducted by Anwarul Islam and Muhammad Mezbah on concept, issue and importance of library consortium: Problem and prospects of university library consortium in Bangladesh. These study summaries in this information explosion era no library is able to satisfy its user information need to its clientele but library consortium can lead libraries to achieve this purpose. Library consortium is well known to resource sharing. Study also pointed some issue related to consortium such as subscription cost of consortium, identifying and negotiating with potential publisher to provide required resources under consortium, legal issue like copyright, digital millennium act, digital management rights and establishing infrastructure that required access to electronic resources. Study raise some issues related to back-up and archival of electronic resources and databases and training to staff. Libraries should manage these issues with follow proper rule and regulation by creating complete and competitive environment.

3. Methodology:

Available literature on the topic has been studied and reviewed to explore library consortium concept; Functioning, Objectives, Issues, some relevant studies are mentioned above on background studies. This study is based on literature review and related studies.

4. Resource Sharing:

Resource sharing in libraries is not just only to share resources among the libraries it is broader than that, resource sharing in libraries is mean to share material that may be library collection or information resources available in the libraries, any of the two or all. So, it is very clear that resource sharing in the libraries we mean sharing material or function or services between two or more libraries. Sharing resources in libraries are below:

- Experience and expertise of library personnel,
- Library collection or other materials other material may include.

5. Library Consortium:

Consortium literally mean group of organisations or union it also means temporary co-operation of several assets for common purpose among the organisations. A consortium is an association of two or more individuals, organisations with the aim of participating activities and their resources for mutual goal. Library consortium is a large group of libraries that agree to pool their resources, services and personals between two or more libraries to achieve the mutual goals of the organisation.

6. Types of Library Consortium:

Library consortium can be categorized as various levels as Local level consortia, National level consortia and International level consortia. There are some models in India depending upon organisational affiliation and funding sources.

- OPEN CONSORTIA: Open consortium can be consider as very flexible consortia because in open consortia member organisation are free to join and leave wish out any library hindrance. INDEST consortium was the exam of open consortia but now it has been merged in e-shodh sindhu.
- CLOSED GROUP CONSORTIA: It is within defined group either by recognition and collaboration, like CSIR, ICSSR, IIM consortia.
- CENTRALLY FUNDED MODEL: In this model consortium will funded by their parent body or organisation like E-shodh sindhu by UGC/MHRD, ICMR, and CSIR by DSIR.
- SHARED BUDGET MODEL: In this model, participation organisation or libraries take lead on budget and form consortium. FORSA is the model of this model.
- PUBLISHER INITIATIVES: In this model publishers create databases on various subjects and after to participating libraries on deep discount price.
- NATIONAL CONSORTIUM: National consortium are National Level licensing of products and centrally best its activities like UGC INFIBNET, E-shodh sindhu.
- INTERNATIONAL CONSORTIUM: International consortium provide co-op-

eration to various countries like OCLC. OCLC facilities to all libraries of the world. It is a global library co-operative provides shared technology services.

7. Why Library Consortium:

FINANCIAL CRUNCH:

Libraries are functioning short budget phase funding goes down and price go up hence budget cuts and price increase brought libraries in new door stop and for consortium serial prices are increasing day by day but budget is decreasing to libraries goes through to consortium.

Information explosion and diversity of users needs:

In this internet age information is originated rapidly and users needs in increasing in various field of subject and it not affordable to libraries deal with all information sources for their uses. This phase also open doors of library consortium.

IMPOSIBILITY OF SELF SUFFICIENCY: Libraries are unable to hold all types of reading material and services within four boundaries in aspect of budget and space. this impossibility of libraries forced itself to participating in consortium.

8. Function of Library Consortium:

- Library consortium performs following functions:-
- Acquisition or co-operating collection development
- Processing
- Cataloguing card service
- Cataloguing in publication
- Co-operative storage/ space management
- Inter library loan
- Sharing of equipments
- Sharing of service
- Creation of virtual libraries etc.

9. Benefits:

- Cost benefits for libraries and publishers
- Availability of wide variety resources for users
- Access to greater number of Journals and other Serials
- Maximum utilization of fund
- Facility to build up digital virtual library
- Cost sharing for expert and technical support
- Eliminates geographic border of using ICT, etc.

10. Library Consortium in India:

There are many library consortium has been established in India listed below:

Sr. No.	Library Consortium	Year
1	Forum for resource sharing in Astronomy (FORSA)	1982
2	TIFR Libraries Consortium	1999
3	ISI Library Consortia Deals	1999
4	STI Network for resource sharing amongst S&T libraries	1999
5	DAE Consortium	2001
6	IIM Libraries Consortia	2001
7	JCCC & VIC	2002
8	CSIR E-Journal Consortium	2002
9	RGUHS-Health Science Library and Information Network (HELINET)	2003
10	MCIT Library Consortium	2005
11	BJ medical Consortium	2006
12	Consortium for e-Resources in Agriculture	2007
13	Electronic Resources in Medicine (ERMED)	2008
14	CSIR E-Journal consortium now The National Knowledge Resource Consortium (NKRC)	2009
15	DRDO Consortium	2009
16	DeLCON Consortium	2009
17	E-Shodhsindhu	2016

11. Conclusion:

Consortium with its collaborative and collective characteristic, providing great assistance and cooperation to various organizations and libraries so libraries should walk together by subscribing library consortium as per their need. Now consortium has become a tool rather to an organization which helps libraries to enriching itself with collection and services efficiently. In India resource sharing has not yet developed in big way but INFLIBNET, CSIR, DELNET and other major networks are performing good to fulfill the gap between libraries and library consortium.

References:

1. Bedi, S., & Sharma, K. (n.d.). Library Consortia : A Step forward the Information Society.
2. Chatterjee, A. (n.d.). RESOURCE SHARING AMONG LIBRARIES IN DIGITAL ERA :Role of Consortia
3. Mezbah-ul-Islam, M. A. I. and D. M. (n.d.). Concept, issues and importance of library consortium:
4. Theresa, T. B. (2014). Library Networking and Consortia Digital Resource Sharing Abstract :, *3*(12), 285–288.
5. Woodward, H. (n.d.). Digital Collections and Services : The Future Role of Academic Libraries and Library Consortia.
6. Yernagula, R., & Kelkar, P. K. (n.d.). Library Consortia : benefits and models of E-journals Consortia.
7. Kumar,P.S.G. (2002). A Stident's Manual of Library and Information Science, B.R> Publishing Corporation New Delhi, VOL-02 ISBN 9789350500125

Authors Profile



Dr. Subhash Chandra is working as Asst. Librarian in MJP Rohilkhand University, Bareilly (U.P.)-243006. He is Member Board of Studies (for LIS) in MJP Rohilkhand University. Also Life member of ILA and other bodies. His area of interest is Academic Libraries and Public Libraries.

E-mail: s73chandra@rediffmail.com

Preservation and Conservation Practices of Manuscripts in Libraries at Varanasi: A Study

Sujata Gupta

Semi Professional Assistant
Vasanta College for Women, Rajghat Fort, Varanasi-221001
sujataprime@gmail.com

Shyambali Kumar

Library Assistant
Vasanta College for Women, Rajghat Fort, Varanasi-221001
shyam.bali044@gmail.com

Abstract: A survey using structured questionnaire was administered to study preservation and conservation of manuscripts and rare documents in different libraries at Varanasi. This study has made a careful endeavour to investigate the status of manuscripts and the technique using to preserve the valuable manuscript and cultural heritage of India. The study identified the nature of decay and their effects on these precious resources. Future plans and recommendations to enrich the conditions of manuscripts have also been discussed.

Keyword: Manuscript, Preservation and Conservation, Digital preservation techniques, Libraries at Varanasi

1. Introduction

A variety of writing materials such as stones, copperplates, birch bark, palm leaves, parchments and paper had been in use to preserve the intellectual heritage. These treasures of wisdom containing the ancient knowledge systems have come down to us in the form of manuscripts. These invaluable and unique pools of knowledge are under threat and manuscripts are disappearing at an alarming rate. The slow decomposition of library materials is a universal problem. To ensure that library materials remain available for present and future generations of library users, libraries engage in a variety of preservation efforts. These efforts include the conservation of original materials and the transfer of information from original materials to more durable formats. Therefore preservation and conservation are now becoming an indispensable task to render the security of cultural heritage resources and rare documents in modern librarianship under the aegis of various National institutions i.e. Indira Gandhi National Centre for the Arts (IGNCA), National Mission for Manuscripts (NMM) etc.

2. Manuscript

- Oxford English Dictionary defines manuscripts as 'a very old book or document that was written by hand before printing facility was invented'. Etymologically, the word manuscript has been derived from the Latin word 'Manus' that means hand and 'Scribe' to write i.e. written by hand. Hand written documents are called manuscripts.

3. Preservation and Conservation

ALA Glossary of Library and Information Science defines preservation as "the activities associated with maintaining library and archival materials for use either in their original form or in some other" and conservation as "the use of chemical and physical procedures in treatment or storage to ensure the preservation of books, manuscripts, records and other documents."[1]

4. Varanasi: A Cultural Place of India

Varanasi also known as Kashi is one of the oldest living cities in the world. Varanasi's Prominence in Hindu mythology is virtually unrevealed. Varanasi has been standing the tests of time for over 5,000 years is said to be one of the oldest inhabited cities in the world. In Mark Twain's words, "Benares is older than history, older than tradition, older even than legend, and looks twice as old as all of them put together. Varanasi is the tract of holy land lying between the rivers Varuna and Assi. Which flow into the Ganga. Varanasi is also known as Kashi, the city of light, since one of the twelve "Jyotirlinga" is installed here. Varanasi has been a great cultural center, especially in the field of music, learning and the craft of silk weaving. Some of most renowned exponents of music have drawn their inspiration from Varanasi. Many religious texts and theosophical treatises have been written here. Varanasi is a Museum architectural design. It presents changing patterns and movements in course of history. It has a rich and original variety of paintings and sculptor styles and equally rich treasures of folk art.[2]

5. Literature Review

Sarika Sawant (2014) conducted a survey on "Preservation and Conservation Practices of Academic Libraries in Mumbai". The study revealed that print materials have been deteriorated primarily due to books becoming torn and broken of spine

of library books and it was also found that dust and particulate matters were the main causes of deterioration of print materials. This study considerably focused on the written policy of preservation and conservation and it was observed that there was no policy for preserving the print materials in approximately all academic libraries in Mumbai.[3]

Mokayaemimah Kemuma (2013) in his study "Preservation of Information Materials in Academic Libraries: A Case Study of Kisii University Main Library" recommended some significant ways to preserve the valuable collections of libraries i.e. libraries should have a strategic plan/policy of long term preservation and should be implemented emphatically.[4]

Ramesh C. Gaur and Mrinmoy Chakraborty (2009) in their paper "Preservation and Access to Indian Manuscripts: A Knowledge Base of Indian Cultural Heritage Resources for Academic Libraries" discussed about the National Manuscript Mission that preserves the large manuscript of India. They mentioned that, with increasing popularity of printed books the interest for collecting and preserving of manuscripts gained ground in India.[5]

Wole Michael Olatokun (2008) carried out asurvey on "Preservation and Conservation Practices and Techniques in Nigerian University Libraries" which showed that though some of the libraries adopt and use some digital preservation techniques but still they are not usedcompetently.[6]

S. Kumar & Leena Shah (2004) in their article "Digital Preservation of Manuscripts: A Case Study" have discussed in detail about Scindia Oriental Research Institute (SORI), a pioneer manuscript repository which has the distinction securing 11th rank among the manuscript repositories as per the survey conducted by INTACH. Some 4190 manuscripts of importance have been microfilmed by IGNCA at SORI and it has been recognized as one of the MRCs for accessioning, cataloguing and launching of awareness program in Madhya Pradesh.[7]

The above review of literature is more concerned to the current study and provides a strong theoretical framework for the study. The reviewed literature unveils some new and significant phenomenon related to preservation and conservation of manuscripts.

6. Objectives of the Study

The core purpose of the study is to unearth the status of libraries having manuscripts at Varanasi, a district of Uttar Pradesh.

Other objectives are:

a. To ascertain the type of manuscripts and rare documents available in libraries.

b. To find out causes of degradation of resources faced in libraries.

c. To find out the strategies used in the preservation and conservation of manuscripts and rare documents in selected libraries.

d. To investigate whether libraries have a written policy for preserving the manuscript

e. To find out the problems being faced by different libraries in preserving the precious records.

f. To offer some suggestions to improve the current status of libraries at Varanasi.

7. Scope of the study

For the accomplishment of the above objectives, the study concentrated in gathering data of different libraries having manuscripts and rare documents of Varanasi during the month of January. The list of libraries covered under this study is enlisted below:

Table: 1

Sl.No.	Name of Libraries
	Sayajirao Gaekwad Library, BHU
	Bharat Kala Bhavan, BHU
	Shantarakshita Library,Central University of Tibetan Studies(CUTS), Sarnath
	Saraswati Bhawan Library, Sampurnanand Sanskrit University
	IGNCA, Varanasi Regional Centre

8. Methodology

In this study, purposive sampling was used. A structured questionnaire was developed for the purpose of data collection and distributed personally and it covered several aspects of preservation and conservation practices of manuscripts. This questionnaire was circulated amongst 5 selective libraries of Varanasi.

9. Data analysis and interpretation

The responses of the staff of the libraries collected through the questionnaire have been analysed and presented along with a discussion of the relevant issues under different facets about preservation and conservation of manuscripts.

Table: 2 Types and Numbers of Manuscripts and other rare documents

Sl. No.	Types of Manuscripts	Number of Manuscripts procured by Libraries				
		Sayajirao Gaekwad Library, BHU	Bharat Kala Bhavan, BHU	Saraswati Bhawan Library ,SSU	IGNCA, Varanasi	Shantarakshita Library, CUTS
1.	Palm leaves	19				
2.	Birch bark	14				
3.	Handmade paper	7194	5000	1,40,000	1000	
4.	Hansi-pata					
5.	Machine-made paper	300				
6.	Other Manuscript in preserved format					Xylographs 2000 and 9742 Microfiches and Films
Year/Century of availability of manuscripts in the library		1375 AD-18th century	14th century-18th century	1971	15th century-18th century	1967

All selected libraries have a rich collection of various types of manuscript. Among them Sayajirao Gaekwad Library, BHU acquires several types of manuscript in its treasure including 19 manuscripts on Palm Leaves,14 Birch Bark, 7184 Handmade paper and 300machine made paper.Bharat Kala Bhavan, BHU has 5000 handmade paper which represents the precious cultural heritage of India. Sampurnanand Sanskrit Vishvavidyalaya is a centre for Sanskrit learning and culture and it is considered a focal point for Sanskrit studies in India. The University library i.e. Saraswati Bhawan Library has acquired a valuable collection of 1, 40,000 manuscripts covering all the subjects in *Devanagari, Bengali* and *Sarada* scripts.

The University has published valuable catalogues of manuscripts. Among these, the older catalogue comprises the manuscripts acquired in 1791-1950 and the new one covers those obtained in 1951-1981. Both contain a large number of extremely valuable manuscripts. Sampurnanand Sanskrit Vishvavidyalaya signed MOU with the National Mission for Manuscripts in May 2005. The MRC has so far documented 39,056 manuscripts. IGNCA, Varanasi regional centre is mainly engaged in the publication of Kalatattvakosa Series by a group of active employees and researchers. It has 1000 handmade paper in its rich collection. Shantarakshita Library, CUTS has special collection of Buddhist canonical works in Tibetan language translated from Sanskrit and other Indian languages. Contents of Buddhist manuscripts in Sanskrit and Tibetan languages are preserved in different form and formats such as printed, xylographs, digital and micro form etc in this library. The library has separate sections for such forms of collection. The library collection in the fields of Buddhism, Tibetan and Himalayan studies and allied subjects is point of attraction for scholars at home and abroad. At present the library holds xylographs 2000 bound volumes of journals and 9742 titles of microfiches and films. A detail of manuscript collection in Microform of Shantarakshita Library is enlisted below:

Table: 3 bKángjurand bStan-'gyur

S.N.	Title	Volume
	Lhasa bKángjur	101
	NarthangbKángjur	105
	LithangbKángjur	108
	TawangbKángjur (Gold) (CUTS)	105
	TawangbKángjur(CUTS)	107
	Cone bStan-'gyur	215

Table: 4 Buddhist Sanskrit Manuscripts

S.N.	Collection	Title
	Collection of Nepal German Archives	1200
	Collection of Cambridge University, London	750
	Collection of Advance Institute of World Religious Studies, New York, USA	509
	Descriptive Catalogue of Sanskrit Manuscript preserved in the various Libraries and Institutions	30
	Other Institute like, Tokyo University, Japan and Bibliotheque National, France	50

Table: 5 Tibetan Religious Works

S.N.	Title	Title
	Tibetan Works in Library of Congress (Set I-IX)	25624
	C.C. Garma Chang Collection	130
	Beijing Collection	10
	Tun-Huang Manuscripts	599

Table: 6 Causes of Deterioration of Manuscripts

S.N.	Causes of Deterioration	No.	%
1.	High acidity levels	2	40%
2.	Tear due to excessive photocopying	1	20%
3.	Air pollution	3	60%
4.	High temperature levels	2	40%
5.	Relative humidity	3	60%
6.	Excessive light	2	40%
7.	Dust	5	100%
8.	Biological agents (e.g. termite, cockroaches, spiders etc.)	4	80%
9.	Bad Shelving	-	-

Table 6 presents the causes of decay of manuscript faced by the surveyed libraries. It is observed that dust (80%) is the major cause to deteriorate the manuscript. Dust is highly dangerous for the library and archival collection, composed of soil, tar, metallic substances, fungus spores and moisture among other things. It is the main source of both physical and chemical deterioration of library materials. This is followed by biological agent (80%), air pollution (60%) and relative humidity (60%). Only one library responded against tear due to excessive photocopying as a cause of degradation of manuscripts because of least permission of photocopying of manuscripts.

Table: 7 Use of Preservation and Conservation Techniques

S.N.	Preservation and Conservation Techniques	Score	Mean
	Lamination	9	1.8
	Fumigation	10	2
	Deacidification	9	1.8
	Binding	9	1.8
	Encapsulation	11	2.2

	Cleaning and dusting of manuscripts	15	3
	Photocopying	12	2.4
	Installing air-conditioners in your library	11	2.2
	Provision of adequate security systems to prevent theft, mutilation and defacing of paper-based materials	11	2.2
	Use of insecticide and insect repellent for manuscripts' preservation	9	1.8
	By using preservatives such as		
	1. Neem leaves	7	1.4
	2. Naphthalene balls	13	2.6
	3. Thymol crystals	13	2.6
	4. Para-dicholorobenzene	13	2.6

To prevent the deterioration, control of environmental factors such as temperature, relative humidity, light/illumination and pollution control has to be ensured besides preservation in display or storage angles or safety of art works can be planned during their transportation from one place to another to avoid future damages.

A question was asked to know about the practices of preservation and conservation techniques adopted by the libraries. The results with mean score are tabulated in the Table 7. It shows that cleaning and dusting of manuscripts is the most regular technique implemented by the libraries which scores highest mean value3.Thetable also shows that most of libraries use indigenous materials like Naphthalene balls, Thymol crystalsand Para-dicholorobenzeneas preservation techniques for manuscripts and its mean score 2.6 also reveal that libraries apply these traditional methods positively because these are ecofriendly, no side effects may occur by these materials and the same time these are not so costly.

Table: 8 Practice of Fire Detection Equipment

0.5	Fire Detection Equipment	Response count	Response %
	Smoke Detector	3	60%
	Fire Detector	3	60%
	Fire Extinguisher	4	80%
	Wet pipe sprinkle system	1	20%
	Dry pipe sprinkle system	2	40%

Dinca (2009) reports that some important Transylvanian libraries of the 14th, 15th and 16th centuries were affected by disasters, e.g. the medieval manuscripts collection at the Lutheran College was destroyed due to fire in 1689.[8]Fire is known as the enemy of library. There is no recovery possible if a book is burnt so it is accepted that a better solution is to put out the fire with water and then dry out the books. Advanced technologies have reduced the possibility of a library collection being destroyed by fire.

It is evident from Table 8that the most of the libraries have fire extinguisher (80%), smoke (60%) and fire detector (60%). Only IGNCA library does not acquire any fire detection equipments.

Table: 9 Digital Preservation Techniques

S.N.	Digital Preservation Techniques	Very often	Occasionally	Never
	Refreshing (Periodic copying from one physical medium to another)	2 (40%)	1(20%)	2(40%)
	Technology preservation (Replicating any old configuration of hardware and software)	2(40%)	1(20%)	2(40%)
	Scanning	3(60%)	-	2(40%)
	Emulation (Preserving the original application program)	2 (40%)	-	3(60%)
	Microfilming	-	3(60%)	2(40%)

India is moving towards digitization process, which has large amount of traditional and cultural resource. In India, some of the libraries and information centres have started digitizing and preserving the information through the implication of Information Technology. The reason for preserving manuscripts and rare information is fragile nature of old documents, durability of storage media.[3]Modern technology is playing a major role in preservation and promotion of rich documents. Table 9 demonstrates that 60% libraries preserve their rare documents through scanning very often while 3 libraries use microfilming occasionally. It is found that 60% libraries never apply emulation technique as well as 40% libraries never use other techniques excluding emulation. In the current study it is also observed that 2 libraries out of 5 libraries do not follow any of the digital preservation techniques.

Table: 10 Guidelines recommended under Preservation Policy

S.N.	Guidelines	Response count	Response %
	Security of Manuscripts	5	100%
	Disaster recovery procedure	3	60%
	Use of Manuscripts	4	80%
	Handling of Manuscripts	4	80%
	Training of staff on preservation of Manuscripts	4	80%
	Restoration of decayed Manuscripts	5	100%

The respondents were asked to indicate whether there is any preservation policy in the library. It is found that all libraries have written policy statement on preservation.Table10represents that all libraries follow the guidelines to secure the manuscript. Preservation policy helps to enhance the restoration of damaged manuscripts available in their collection while 4 libraries accept that the policy is very beneficial for the maintenance and management of their collection.80% percent of the libraries have also been taking the benefit of policy in mitigating the lacuna of providing training to staff on preservation of manuscripts materials while 60% informed that the policy has helped in disaster recovery procedure.

Table: 11 Obstacles effect Preservation and Conservation of Manuscripts

S.N.	Obstacles effect Preservation and Conservation of Manuscripts	Response count	Response %
	Inadequate funding of the library	4	80%
	Lack of competent manpower in preservation and conservation	2	40%
	Lack of preservation and conservation policy	-	-
	Inadequate infrastructure	4	80%
	Unpleasant environmental conditions	3	60%
	Outdated hardware and software	2	40%

The data tabulated in Table 11 display that inadequate funding and infrastructure of the library (80%) are found to be the main obstacles to effect the preservation and conservation of manuscripts. It also analyses that no library face the problem of improper policy statement for preserving its rich resources.

10. Suggestions

1. The staff should have specific education and training in order to meet the

requirements of conservation & preservation of manuscripts.

2. Library and information centers must allocate adequate funds in their annual budget for the preservation and conservation of valuable materials in their collections.
3. It is suggested that new tools and techniques related to ICT should be implemented for improving library infrastructure.
4. Installation of air conditioner can resolve the problem of deterioration due to air pollution, dust and relative humidity and high temperature levels.
5. In order to minimize the possibility of damage from fire, or other causes, and decrease the time needed for recovery after a destructive event, it is recommended that all libraries should have a disaster management and recovery plan.
6. The appropriate application of technical standards by those involved in digitization activities is essential if the digitized collections are to be maintainable in a cost-effective way over time.

11. Conclusion

From the above discussion it is clear that these libraries are doing a good job for the conservation and preservation of manuscripts. However, some more measures ought to be taken for the usage of advanced methods for the protection and conservation of original copies. The study uncovers that all libraries have a standard policy to secure and manage their rare manuscript. The current study finds that policy is proved to be true to enhance the condition of the marvelous and rare collection of selected libraries of Varanasi. Many of the libraries have been preserving and conserving manuscript by utilizing advance digital techniques. Without new and effective efforts for their preservation most will not be usable in their present form in the next century. So it is necessary to all libraries and archives to preserve the manuscripts for current and future use by adopting and implementing of ICT framework. It is additionally found that budget allocation or funding is the fundamental obstacle of compelling preservation of manuscript. Digitization is a widely suggested solution to the problem of handmade papers and other manuscripts preservation in libraries and archives. To apply this solution a large amount of budget is required to spend so all library authority must take initiative and approach the funding agencies or government bodies to increase special funds to secure their rich collection for long duration.

References

1. Young, H. & Belanger, T. (1983). *ALA Glossary of Library and Information Science* Chicago: American Library Association.
2. http://varanasi.nic.in. Retrieved January 25, 2017.
3. Sawant, S. (2014). Preservation and Conservation Practices of Academic Libraries in Mumbai, *Annals of Library and Information Studies*, 61(2), 154-159. Retrieved January 25, 2017 http://op.niscair.res.in/index.php/ALIS/article/viewFile/4114/105.
4. Kemuma, M. J. (2013). Preservation of Information Materials in Academic Libraries: A Case Study of Kisii University Main Library, Research Project, Kisii University, Kenya.
5. Gaur, Ramesh C. and Chakraborty, M. (2017). *Preservation and Access to Indian Manuscripts* [Online]. Retrieved January 25, 2017 http://crl.du.ac.in/ical09/papers/index_files/ical-14_227_489_2_RV.pdf.
6. Olatokun, W. M. (2008). A Survey of Preservation and Conservation Practices and Techniques in Nigerian University Libraries, *Libres*, 18 (2), 2-9. Retrieved January 25, 2017https://blogs.ntu.edu.sg/libres/files/2014/06/Vol18_I2_Olatokun_FINAL.pdf.
7. Kumar, S. and Shah, L. (2004, November 4-5). *Digital Preservation of Manuscripts: A Case Study*. Paper presented at the 2nd National Convention PLANNER, Manipur University, Imphal. Retrieved January 26, 2017 http://ir.inflibnet.ac.in:8080/ir/ViewerJS/#../bitstream/1944/419/1/04Planner_5.pdf.

Author's Profile



Sujata Gupta is working as Semi Professional Assistant at Vasanta College for Women (Admitted to the Privileges of Banaras Hindu University) Rajghat Fort, Varanasi. She holds M.Lib.I.Sc. Degree from Banaras Hindu University. She got Gold Medal for securing highest score in M.Lib.I.Sc. She has presented various papers in National and International conferences and chapters in edited volumes.

sujataprime@gmail.com

Usage Of E-Shodhsindhu Consortium Among The Users Of Social Sciences: A Study Of Kurukshetra University, Kurukshetra

Dr. Dharmesh Kumar

Asstt. Librarian, Hindu College, Sonepat
singhmardharmesh@yahoo.in

Abstract: The present study investigated the usage of E-Shodhsindhu Consortium among the users of four departments of Social Sciences of Kurukshetra University, Kurukshetra. It was found that maximum of the Sociology respondents with 16.88% weekly and 15.63% monthly use the E-Shodhsindhu Consortium. The majority of the respondents i.e. 38.13% Sociology and 19.38% Political Science know how to use E-Shodhsindhu consortium. It was found that 20.63% of Sociology respondents using the E-Shodhsindhu consortium for the purpose of updating knowledge and for the research work. The majority of respondents with 20.63% and 12.5% of Sociology and Political Science faced problem of low speed of Internet.

Keywords: E-Shodhsindhu, Social Sciences, Sociology, Political Science, Economics, History and KUK.

1. INTRODUCTION

Information communication technology (ICT) is playing a very important role in every area and change in conventional library to electronic library. This has result to emerging the electronic resources and services. Electronic resources are defined as resources which require computer access or any electronic product and this may be delivered on CD –ROM or via internet and so on. The many types of electronic resources (E-journals, E-books, CD-ROMs/Online Databases, E-thesis, OPAC, Archives, Internet & Web-based resources etc.) are available in the library. E–resources are essential to research library for research requirements to the library users. These types of resources are easily accessible and research scientists prefer to use the electronic resources, because, they require information very quickly and readily format.

It is not possible for one library or centers to hold the full stock of information resources or to procure all information, which may be in demand by its clientele. Even not a single library or information center can meet the thrust of knowledge of all the readers from is holdings, to solve this problem, library cooperation started a long ago, such as inter-library loan, document delivery library network etc. at present, the more accepted system of resource sharing is called library consortia. Consortia approach is one of the many ways of maintaining cooperation and

coordination among the libraries and in fact, it has emerged as the "state of the art" in library cooperation in recent years. The aim of the consortia is to achieve what the member of the group cannot achieve individually **(Thanuskodi, 2012).**

2. WHAT IS CONSORTIUM?

A consortium is an association two or more individuals, companies, organizations or government with the objective of participating in among activity or pooling their resources for achieving a common goal **(Kumar, 2013).**

A consortium can be defined as a strategic alliance of institutes having common interests. The main aim of a consortium is to achieve what members of the group can achieve individually at a relatively low cost **(Rangandham et al, 2013).**

3. ORIGIN OF CONSORTIA

According to Kopp (1998) Melvin Dewey wrote about library cooperation\ in an issue of the library journal in 1886 and 1887 E. A. Mac presented his views on cooperation vs. competition in the same journal in 1888. ALA has formed a cooperation committee whose report was published in ALA Bulletin in 1880s. During a symposium organized by ALA on the tropic "the library of tomorrow" in 1939, R. D. Downs presented a futuristic view of library cooperation in his paper "one for all"; a historical sketch of library cooperation 1930-1970. During 1970 the US office of Education commissioned the System Development Corporation (SDC) to carry out a nationwide study of the academic library consortia to develop a fund of descriptive and prospective information about the activities of academic library consortia and provide guidance of libraries that were forming or planning to form consortia **(Kopp, 1998).**

4. LIBRARY CONSORTIA

According to **Hirshon, (1999)** "library consortia 'a generic term to indicate any group of libraries that are working together towards a common goal, whether to expand cooperation on traditional library services (such as collection development) or electronic information services. It is now used perhaps too broadly, and encompasses everything from formal legal entitles to information groups that come together solely to achieve better pricing for purchasing electronic information'.

Co-operation, Inter library Loan and Resources Sharing among libraries play significant role in providing effective services by reducing costs. All types of libraries are not capable of acquiring every publication and providing it to the users on demand. Recent developments in ICT have led to change in way of library cooperation. Now it is called library consortium. A lot of efforts have been taken in past few years to overcome the financial problems through consortia." Library consortium is a group of two or more libraries which have agreed to co-operate with one another in order to fulfill certain similar needs, usually resource sharing. It usually, refers to co-operation, co-ordination and collaboration between, and amongst, libraries for the purpose of sharing information" **(Bajpai, et.al, 2009)**.

5. NEED AND BENEFITS OF LIBRARY CONSORTIA

Technological developments, electronic publishing of scholarly journals, prizing models of publishers for consortia gives new opportunities for libraries to provide instant access to information. A consortium facilitates the member libraries to get the benefit of wider access to electronic resources at affordable cost and at the best terms of licenses. A consortium, with the collective strength of resources of various institutions available to it, is in a better position to address and resolve the problems of managing, organizing and archiving the electronic resources. It is difficult for any library to be fully sufficient to cater to the information needs of its user community. This approach has helped to get attractive discounted rates and most of publishers responded positively to the call of consortia and are enthusiastic to give the best possible offers. The technology has changed expectations of researchers, their patience, and their willingness to accept services that are available on demand. Academic and Research users can now hope to have access to their learned journals articles in electronic form as the electronic access is comparatively cheaper. The changing role of librarian as a conservator to a navigator/disseminator of information has enhanced the value of library consortia.

6. TYPES OF LIBRARY CONSORTIUM

Many consortia are set up in India i.e. UGC- INFONET Digital Library Consortium, Indian National Digital Library in Engineering Sciences and Technology (INDEST) Consortium, N-LIST, Council of Scientific and Industrial Research (CSIR e- journal consortium), Health Sciences Library and Information Network (HELINET), FORSA CeRA, etc.

UGC-INFONET: This Digital Library Consortium was formally launched in December, 2003 by Honourable Dr. A.P.J Abdul Kalam, the then President of India, soon after providing the Internet connectivity to the universities in 2003. It is an innovative project launched by UGC to facilitate scholarly e-journals to Indian academics through a joint partnership of UGC, INFLIBNET and ERNET (www.inflibnet.ac.in/econ/).

Based on the recommendation of an Expert Committee, the MHRD has formed e-ShodhSindhu merging three consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The e-ShodhSindhu will continue to provide current as well as archival access to more than 15,000 core and peer-reviewed journals and a number of bibliographic, citation and factual databases in different disciplines from a large number of publishers and aggregators to its member institutions including centrally-funded technical institutions, universities and colleges that are covered under 12(B) and 2(f) Sections of the UGC Act.

INDEST-Consortium: The Ministry of Human Resource Development (MHRD) set up the "Indian National Digital Library in Engineering Science and Technology (INDEST) Consortium" in 2003. The Ministry provides funds for access to electronic resources subscribed for the consortium to the 37 core members through the consortia headquarters setup at the IIT, Delhi. The members includes 8 IITs and IISc, 20 NITs , ISM, SLIET and NERIST, 2 IIIT and IIITM, 7 IIMs and NITIE. AICTE provides funds for access to e-resources to (60) Government engineering colleges or technical institutions. 230 engineering colleges and institutions have already joined the consortium on their own. Recently, 461 engineering colleges and institutions joined under self support- new scheme with financial support from the AICTE. It subscribes to over 4000 e-journals from a number of publishers paniit.iitd.ac.in/indest/.

CSIR Consortia: National Institute of Science Communication and Information Resources (NISCAIR), New Delhi along with other laboratories of CSIR formed a consortium called "Consortium for CSIR Laboratories for Accessing E-journals". The consortium started working in June 2002 after an agreement with the Elsevier Science for a period of four years for 1200 journals. CSIR has taken the major initiative in 10th five-year plan to form E-journal Consortium nkrc.niscair.res.in/.

FORSA Libraries Consortia: Forum for Resource sharing in Astronomy and Astrophysics (FORSA) was established in 1981. Members of FORSA include Indian Institute of Astrophysics, Inter University Centre for Astronomy and Astrophysics, National Center for Radio Astrophysics, Physical Research Laboratory (PRL),

Raman Research Institute, etc. It was formed for sharing of resources in areas common to R&D activities. It is to subscribing 25 electronic journals to Indian Astrophysics Consortium (Kluwer journals 2002+) and Nature Online (Nature Publishing 2002+) www.rri.res. in/htmls/library/forsa.html.

HELINET: Health Sciences Library and Information Science Network Consortium was founded in 2001. The library of Rajiv Gandhi University of Health Sciences realized that the resources like journals and books are expensive and building a comprehensive collection in every medical college is unaffordable. Thus, the birth of HELINET took place with the motto to network all the libraries under RGUHS for minimizing the cost of acquisition and maintenance of learning resources and maximizing their utilization among the faculty, students and researchers in the colleges and institutions affiliated to the university. About 600 scholarly international biomedical journals from 24 leading publishers, at about one-third price of their print subscription, have been procured online and are provided to all medical colleges in Karnataka www.rguhs.ac.in/digitallibrary/Helinet%20about%20us.html.

Consortium for e-Resources in Agriculture (CeRA): The National Agricultural Innovation Programme (NAIP) has established the Consortium for e-Resources in Agriculture (CeRA) with the support of Indian council of Agriculture Research (ICAR) at the Indian Agricultural Research Institute (IARI), New Delhi. The establishment of CeRA under NAIP is a part of the ongoing activities of the unit of simulation and informatics (USI) set up in November 2003 by merging the unit of Applications System Simulation (UASS), the Bioinformatics Centre and Internet Facilities. Currently CeRA-Consortium has 123 members. CeRA-Consortium provides access to 2000+ journals (electronic and Print) i.e. 200+ print journals from designated document delivery libraries; 1800+ e-journals from the following participating publishers. It covers six major subject fields including Agricultural & Biological Science; Arts & Humanities; Basic Sciences; Biomedical Sciences; Engineering & Technology (JET); Social & Management Sciences. cera.iari.res.in/

But, in this study E-Shodhsindhu Consortium has been adopted. The study explored that how the E-Shodhsindhu Consortium used and how many problems have been faced to use this consortium by the library users Social Sciences of Kurukshetra University, Kurukshetra.

7. AIMS & OBJECTIVES OF E-SHODHSINDHU CONSORTIUM

The following objectives are:

- Setting-up e-ShodhSindu: Consortia for Higher Education E-Resources by augmenting and strengthening activities and services offered by three MHRD-funded Consortia;
- Develop a formidable collection of e-journals, e-journal archives and e-books on perpetual access basis;
- Monitor and promote usage of e-resources in member universities, colleges and technical institutions in India through awareness and training programmes;
- Provide access to subscription-based scholarly information (e-books and e-journals) to all educational institutions;
- Provide access to scholarly content available in open access through subject portals and subject gateways;
- Bridge digital divide and move towards an information-rich society;
- Provide access to selected e-resources to additional institutions including open universities and MHRD-funded institutions that are not covered under existing consortia;
- Take-up additional activities and services that require collaborative platform and are not being performed by existing Consortia; and
- Moving towards developing a National Electronic Library with electronic journals and electronic books as its major building blocks.

8. REVIEW OF RELATED LITERATURE

Many literatures and studies which attempts to identity, discover and synthesize material concerning to the various aspects of usage of UGC- INFONET Digital Library Consortium has reviewed. Usage of UGC- INFONET Digital Library Consortium studies are an area of active interest among library/ information professional worldwide. In the presentation the review of literature followed are: -

Lingaiah, V. (2016) explored a study on Use of E-ShodhSindhu Resources by the Scholars and Faculty Members in Jawaharlal Nehru Technological University, Hyderabad. He found that More than half of the respondents agree and strongly agree that UGC Infonet Consortium is a boon for teachers and scholar of the university. The majority of respondents for improving research quality and Developing Technical. The

majority of the users facing Problems i.e. to accessing information server low Internet speed some times.

Haneefa et al (2016) conducted a study on measuring the quality of UGC-INFONET digital library consortium services of Calicut university library" analysis show that the overall mean score of the students perception is 4.932 the gap being 0.360. The UGC-INFONET center should have modern equipment and support latest technology 4.285. The UGC-INFONET center should provide facilities to download and copy e-resources 4.263. **Uvaraj and Kumar (2015)** conducted on use of UGC-INFONET digital library consortium resources by the Thiruvalluvar University library users. Most of the respondents use consortium for their research purpose followed by for writing research articles. 79.2% respondents require more journals in UGC INFONET in addition to the present journals. It was found that 94(75.2%) respondents have shown intense interest in print journals in addition to e-journals. The study also shows that the majority of the respondents (59.2%) evaluate UGC INFONET consortium as good. **Veenapaniet et al (2008)** studied the use of e-resources and UGC-INFONET consortium by the teacher and research scholars in Manipur University. Out of the respondent a few were half done. He found that 55% of the respondents have got awareness about the UGC-INFONET programme. Majority of the respondent 88.67% felt they are in need of regular training progrmme to make effective use of UGC-INFONET programme. Mostly 91.67% of the respondents are journals in addition to e-journal. All the respondents 100% were aware of UGC-INFONET consortium. **Bhatt (2009)** evaluated a study on the use of UGC-INFONET digital library consortium resources by research scholars and faculty members of the University of the Delhi in history and political science. The study reveals that library professionals introduced to the UGC-INFONET digital library consortium to maximum users. In case of research scholars, the main purpose is for their research/ project work. As well as for keeping themselves up to date and find relevant information in their subject area. **Maharana et al (2013)** explored about the evaluating the awareness and usage of UGC-INFONET digital library consortium by the faculty members of Odisha state university. Majority of faculty members are moderately satisfied (39.22%) the UGC-INFONET digital library consortium services followed by 46 (24.08%) 34(17.8) dissatisfied, 28 (14.66%) highly satisfied and 10(5.24%) highly dissatisfied respectively . internet bandwidth is the stumbling block in using the UGC-INFONET resources followed by poor infrastructure at library (86.59%) poor infrastructure at department (80.49%) frequent power failure (67.08).

9. ABOUT KURUKSHETRA UNIVERSITY KURUKSHETRA

Kurukshetra University is located in Kurukshetra and a premier institute of higher learning in India. It is spread over 700 acres of land on the south bank of the holy Brahmsarovar. Its foundation stone was laid on 11 January 1956 by Bharatrutna Dr. Rajender Prasad, the first president of the Indian Republic. Since, then it has aimed at pursuing excellence in teaching and research in science, technology, humanities, social science performing Arts & sports.

Today, Kurukshetra University is offering world class education to students throughout India and other countries by providing a learning experience designed to develop intellectual facilities, as well as social and values. The university has more than 445 teaching faculty members and has more than 457 affiliated collages.

10. UNIVERSITY LIBRARY

The University Library was started in Kalsia House with Sanskrit books and later on continues to be housed at two places i.e the main library in the College of Education and Indic Studies Section in the top floor of the Administrative Block.

The foundation stone of the present building was laid down on 17th July, 1967 by the then Chief Minister Rao Virender Singh and ultimately library was shifted in its new building in July 18, 1972 having plinth area 33000 Sq ft in three storeys' Later on during 1984-85 due to shortage of space the building was extended and presently has plinth area 49230 sq. ft.

In order to provide adequate reading space 57500 sq ft. area was added in the golden jubilee year of the university. This reading area now known as Golden Jubilee Reading Hall. After adding this library has area of 1,06,730 sq ft. Library reading capacity has increased from 470 users to 1270 users. Library has 1270 reading seat capacity.

11. SCOPE OF THE STUDY

Kurukshetra University, Kurukshetra offers UG and PG level courses in various disciplines in Social Sciences. But, the present study has been covered four departments of Social Sciences i.e. Sociology, Political Science, Economics and History.

12. OBJECTIVE OF THE STUDY

To identify the awareness regarding E-Shodhsindhu consortium;

- To measure the frequency of use E-Shodhsindhu consortium;
- To find out the purposes of use consortium;
- To identify the place of accessing the consortium and
- To identify the problems faced by the library users of KUK.

13. RESEARCH METHODOLOGY

In the present study survey method has been used and the data has been collected through the structured questionnaire. Thus, a total of 200 questionnaires were randomly distributed among the library users Kurukshetra University, Kurukshetra. Out of 200 questionnaires, 160 questionnaires were received back. The collected data has been presented with the help of the tables.

14. ANALYSIS OF DATA

Response of the study is analyzed with reference to these categories. Table No.1 shows the response of different departments.

Table 4.1: Response of Different Subjects

Departments	Percentages
Sociology	55%
Political Science	25.62%
Economics	6.88%
History	12.5%

Table no 4.1 shows the department wise response of the users. The highest response of 55% was received from the department of Sociology followed by 25.62% of Political Science. Only 12.5% of History and 6.88% of Economics department were received from the respondents respectively.

Table 4.2: Gender-wise Response

Departments	Percentages
Male	55%
Female	45%

Table no 4.2 shows that out of 160, 88(55%) male and 72(45%) female students were responded their response respectively.

Table 4.3: Frequency of Library Visit

Frequency	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
Daily	80(50%)	21(13.13%)	9(5.63%)	12(7.55%)
Weekly	13(8.13%)	13(8.13%)	2(1.25%)	3(1.87%)
Monthly	2(1.25%)	7(4.37%)	_	5(3.13)
Never	1(0.63)	_	_	_

Table no 4.3 deals the frequency of library visit by the respondents of KUK. The majority of the respondents of Sociology 50% and 13.13% of Political Science visit the library daily. Both of the respondents of Sociology and Political Science visit the library weekly with 8.13% respectively.

Table 4.4: Frequency of Using E-Shodhsindhu

Frequency of Using E-Shodhsindhu	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
Everyday	10 (6.25%)	5 (3.12%)	1 (0.63%)	3 (1.88%)
Weekly	27 (16.88%)	8 (5%)	4 (2.5%)	5 (3.12%)
Monthly	25 (15.63%)	12 (7.5%)	6 (3.75%)	6 (3.75%)
Never	21 (13.13%)	14 (8.75%)	0	2 (1.25%)

Table 4.4 shows the frequency of use the E-Shodhsindhu consortium by the respondents of KUK. Maximum of the Sociology respondents with 16.88% weekly and 15.63% monthly use the E-Shodhsindhu consortium. Least of the respondents of all the Departments were everyday use the E-Shodhsindhu consortium.

Table 4.5: Place of Accessing E-Shodhsindhu

Place of Accessing E-Shodhsindhu	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
University library	64(40%)	34(21.25%)	10(6.25%)	14(8.75%)
Internet café	1(0.63%)	3(1.88%)	1(0.63%)	1(0.63%)
Home	1(0.63%)	1(0.63%)	1(0.63%)	1(0.63%)
Hostel	8(5%)	3(1.88%)	1(0.63%)	1(0.63%)

Table 4.5 deals with the place of accessing the E-Shodhsindhu consortium by the respondents. The highest number of the respondents i.e. 40% of Sociology and 21.25% of the Political Science were accessing the E-Shodhsindhu at university library. Only 0.63% of the respondents of all the Departments were accessing the E-Shodhsindhu consortium at home.

Table 4.6: Awareness about E-Shodhsindhu

Awareness about E-Shodhsindhu	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
Yes	61(38.13%)	31(19.38%)	10(6.25%)	16(10%)
No	17(10.63%)	6(3.75%)	1(0.63%)	4(2.5%)
Can't say	10(6.25%)	4(2.5%)	0	0

Table no. 4.6 reveals about the awareness about the E-Shodhsindhu consortium used by the respondents of KUK. The majority of the respondents i.e. 38.13% Sociology and 19.38% Political Science know how to use E-Shodhsindhu consortium, Only 2.5% History and 0.63% respondents of Economics do not know how to use the use E-Shodhsindhu consortium.

Table 4.7: Purpose of Using E-Shodhsindhu

Purposes	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
For updating knowledge	42(26.25%)	24(15%)	3(1.88%)	8(5%)
For writing paper and presenting paper	33(20.63%)	11(6.88%)	4(2.5%)	10(6.25%)

For doing research work	42(26.25%)	20(12.5%)	5(3.12%)	11(6.88%)
For writing assignment	25(15.63%)	8(5%)	3(1.88%)	5(3.13%)

Table 4.7 shows the purpose of using the E-Shodhsindhu consortium by the respondents of all the departments. It was found that 20.63% of Sociology respondents using the E-Shodhsindhu consortium for the purpose of updating knowledge and for the research work. Only 1.88% of Economics respondents were using the E-Shodhsindhu consortium for the purpose of updating knowledge and for writing assignment.

Table 4.8: Satisfaction Level to Using E-Shodhsindhu

Satisfaction Level	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
Highly satisfied	10(6.25%)	9(5.63%)	3(1.88%)	5(3.13%)
Satisfied	59(36.88%)	21(13.13%)	6(3.75%)	12(7.5%)
Sometime satisfied	12(7.5%)	7(4.38%)	3(1.88%)	2(1.25%)
Never satisfied	3(1.88%)	3(1.88%)	0	0

Table 4.8 reveals the respondent's satisfaction level about to using the E-Shodhsindhu consortium to getting their information. About 36.88% and 13.13% respondents of Sociology and Political Science were satisfied. But, the respondents of Economics and History were never satisfied to using the E-Shodhsindhu consortium to getting their information.

Table 4.9: Problem Faced in Accessing of E-Shodhsindhu

Problem Faced	Departments			
	Sociology N%	Political Science N%	Economics N%	History N%
Useful essential resources not available	20(12.5%)	7(4.38%)	2(1.25%)	5(3.13)
Library staff is unwilling for services	7(4.38%)	5(3.13%)	2(1.25%)	1(0.63%)

Low speed of internet	33 (20.63%)	20 (12.5%)	2 (1.25%)	6 (3.75%)
Lack of time	30 (18.75%)	23 (14.38%)	1 (0.63%)	5 (3.13%)
Abstracting and statistics not available	8 (5%)	5 (3.13%)	3 (1.88%)	0
Lack of knowledge in using the E-Shodhsindhu	18 (11.25%)	15 (9.38%)	5 (3.13%)	8 (5%)
Slow response of requested article	19 (11.88%)	12 (7.5%)	2 (1.25%)	7 (4.38%)
Difficulty in finding relevant information	32 (20%)	14 (8.75%)	4 (2.5%)	5 (3.13%)
Lack of computers	31 (19.38%)	15 (9.38%)	5 (3.13%)	8 (5%)

Table 4.9 deals with the difficulties faced by respondents in using the e-Shodhsindhu consortium. The majority of respondents with 20.63% and 12.5% of Sociology and Political Science faced problem of low speed of Internet. Only 14.38% of respondents of Political Science faced problem as lack of time.

15. CONCLUSION

In this new age we are currently witnessing a paradigm shift from modernity to cybernetic. Many consortia are set up in India. But, in this study e-Shodhsindhu Consortium has been adopted. The MHRD has formed e-ShodhSindhu merging three consortia initiatives, namely UGC-INFONET Digital Library Consortium, NLIST and INDEST-AICTE Consortium. The e-ShodhSindhu will continue to provide current as well as archival access to many journals and books online.

REFERENCES

1. Bajpai, R.P., K.L. Bidyut, Geetanjali Bajpai.2009. "Use of e-resources Through Consortia: A Boon to Users of Indian University Libraries". In Delhi University Library System, University of Delhi, Delhi: International Conference on Academic Libraries 2009. Accessed September 11, 2017. http://www.crl.du.ac .in/ical09/papers/index.htm.
2. Bhatt, J. and Joshi, N. (2009). "Impact of UGC-Infonet Digital Library Con-

sortium to academic community: a case study of the Maharaja Sayajirao University of Baroda" in *CALIBER 2008proceedings of the international conference in From Automation to Transformation, INFLIBNET Centre, Ahmedabad:* 565-571. cera.iari.res.in/

3. Hanseef K and Mohamed et. al (2016). Measuring the quality of UGC-INFONET digital library consortium services of Calicut university library. *Kelpro Bulletin.*20 (1): 75-86.
4. Hirshon, Arnold. (1999). Libraries, consortia and management. Academic librarianship, 25(2): 124-126.
5. Kopp, J. Library consortia and information technology: the past, the present and the promise.*Information Technology and Libraries,* 17 (1): 7-12.
6. Kumar, B. 2013. Library Consortia: Advantages and Disadvantages. *International Journal of Information Technology and Library Science* 2(1): 1-5.
7. Lingaiah, V. (2016). A Study on Use of E-ShodhSindhu Resources by the Scholars and Faculty Members in Jawaharlal Nehru Technological University, Hyderabad. *Journal of Advances in Library and Information Science,* 5(3):268-272.
8. Maharana, Rabindra K, Das Ashok kumar and pati subrat.(2013). Evaluting the Awareness and usage of UGC-INFONET digital library consortium by faculty members of ODISHA state university. *Journal of library & information science.* 3(2): 287-298.
9. nkrc.niscair.res.in/
10. paniit.iitd.ac.in/indest/.
11. Rangandham et al, 2013. Use of e-journals through CeRA (consortium for e-resources in agriculture) by the students in Acharyangranga Agricultural University S.V. Agricultural College, Regional Library, Tirupati: A study. *International Journal of Contemporary Issues (IJCI)* 1(2): 35-51.
12. Thanuskodi, S. (2012). Awareness and Usage of UGC-Infonet Digital Library Consortium among Faculty Members of State Universities in Tamil Nadu: A Survey. International Journal of Information Science 2(3): 13-18.

13. Uvaraj ,G and L Mohan (2015). Use of UGC-INFONET digital library consortium resources by Thirvalluar university library users: A case study. *Journal of Library & Information Science.*5 (2): 1-8.
14. Veenapani et.al. (2008). Use of e-resources and UGC-INFONET consortium by the teachers and Research scholars in Manipur University. International CALIBER.26-29 march : 563-568.
15. www.inflibnet.ac.in/econ/
16. www.rguhs.ac.in/digitallibrary/Helinet%20about%20us.html.
17. www.rri.res. in/htmls/library/forsa.html.

VuFind Open Source Software for Cross Collection Resources Discovery Service in Libraries.

Surendra Kumar Pal

Assistant Librarian, Central Library, Tripura University,
Suryamaninagar-799022, Tripura Email: skpdlis@gmail.com

Abstract: It is widely accepted that particularly in case of University Libraries, collection of resources are ever growing from beginning to present days. As the collections is growing day by day, in the same time Librarians have to really improve our search and retrieval strategy in the libraries. So that users can get their required documents in minimum time which is also a basic philosophy of Ranganathan five Law of Library Science. Library resource discovery service is the ultimate option to enhance the search & retrieval system of these documents in a single window search rather to make simple search on various databases of library. This paper provides an overview of the library resource discovery environment and explains how these technologies, methodologies, and products might be able to adapt to changes in the evolving information landscape in scholarly communications. This paper will also attempt to explore about VuFind-an open source discovery layer design by library for the libraries.

Keywords: VuFind Discovery Service, Cross Collection Discovery Service, Discovery Software, Search & Retrieval System.

1. Introduction:

In present days, almost all types of libraries in the world are having a great collection of both print and online resources either from purchasing, subscribing or generating its own research output. It is widely accepted that particularly in case of University Libraries, collection of resources are ever growing from beginning to present days. As the collections is growing day by day, in the same time we have to really improve our search and retrieval strategy in the libraries. So that users can get their required documents in minimum time which is also a basic philosophy of Ranganathan five Law of Library Science.

Librarian has to seriously think over the search & retrieval system of these documents in a single window search rather to make simple search on various databases of library. For example, A researcher required a document related to his or her research area in library, He or She first has to make a search on print book OPAC, then in Institutional Repository for university thesis, then in each publisher or aggregator E-Book search interface and the same has to repeat for online journals and archive too and so on.

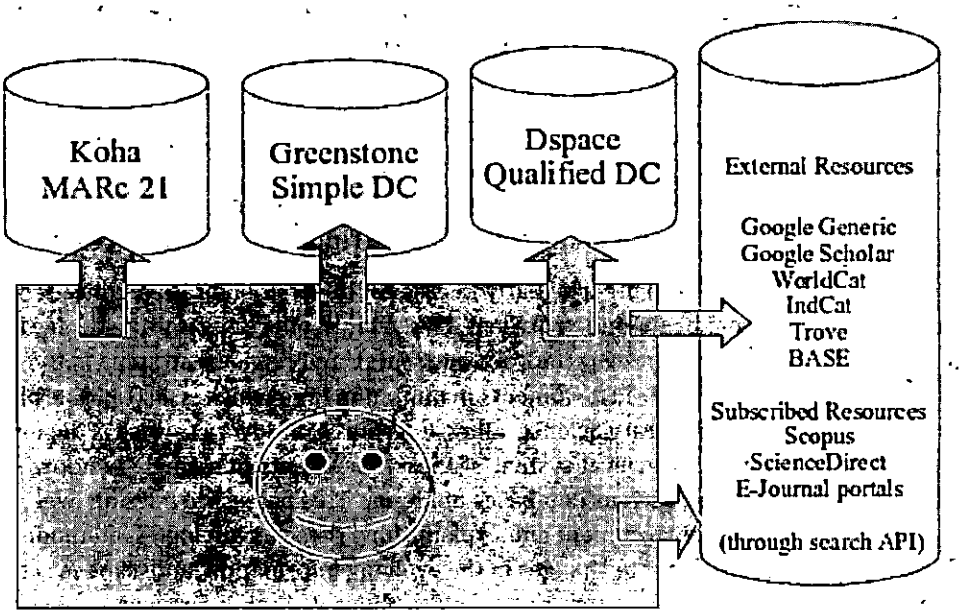


Figure 1: Search architecture in Libraries without Discovery Layer.

So ultimately users have to make so many searches in the same library. Here Librarians has to seriously adopt or generate such a search & retrieval system which will provide a single window search on whole collection of library. This will also save the time of user and help to deliver delivery right information in right time. To overcome of this challenge, Library resources discovery service will be the best option which librarians can adopt in their libraries.

Library Resources Discovery services is a new name for the traditional information retrieval system. A bit of market confusion is created by the new discovery product, vendors, projecting their products as a potential substitute for many search services that the libraries have been using for decades like card catalogue, OPAC, Web OPAC, Bibliographic database search etc. Two things are projected as key benefits of these new age discovery services. First they act as a single point search interface for all the contents (subscribed, in-house and open access) that the library wants to present to its user community for searching. It is mimicking Google, and second they operate on web scale. Most of libraries have different types of electronic resources and each e-resources database has their own search engine therefore users need to visit different search engines to get their required information for which it is required services a single point search interface for all the content has emerged, which is more effective and useful for the users.

2. What is discovery Service?

The collection of libraries is increasing day by day due to urgent demands of the library users in consent to their projects and research works. Librarians has to facilitate the demands of our users but at the same time they have to generate or implement such a system which can make retrieval of these resources is easier and user centric. Libraries are providing the simple search systems like OPAC search, IRs search, and library website linking of online resources. There must be a single window search like system, which can retrieve the information from all available resources of the libraries.

Web-scale discovery services—tools that search seamlessly across a wide range of local and remote content and provide relevance-ranked results—have the ambitious goal of providing a single point of entry into a library's collections (Breeding, Marshal, 2014).

Discovery Service or Web-scale discovery service, described as similar to Google but for accessing a library's academic content.

It provides a single window search box for finding all items in a library's print and online collection including print books, print journals, Newspaper articles, Thesis & Dissertations, e-books, e-journals and other academic databases, multimedia items and other holdings. It executes searches against a database of pre-harvested content, preferably by indexing the full text, and offers the ability to use facets to refine searches by restricting results to properties such as date range or content type.

The discovery service can be providing to library users through implementing the discovery tools in libraries. There are various commercial and open source software are available which we have to implement in our libraries.

In the past you used to search databases (or full text), then follow links to full text. But since it was impossible to find everything via one vendor's access, you could either visit each in turn or use federated search to search across groups of vendors' products in a single step (and then link). Discovery is different because it holds an index which represents the full text content which may be searched, and also offers a linking facility to open the full text content.

Discovery services can play a vital role in a library's strategic infrastructure. But it's not a one-size-fits-all arena. The needs of public and academic libraries, for example, differ enormously. Libraries can select from a variety of options to deliver the best user experience, but they must be well-equipped with data and perspective as they place their bets in this critical area.

3. Commercial and Open Source Library Resource Discovery Software

In present days many commercial and open source library discovery service software are available in the market. In connect to commercial EBSCO is leading the market while in open source VuFind is having more installation in the various types of libraries in India and worldwide. Some of Commercial and Open Source Software are listed below:

Table-1: List of Commercial and Open sources Discovery layer Software.

Sr. No.	Commercial Software	Open Source Software
	EBSCO Discovery Service (EDS)	VuFind
	ProQuest Summon	Blacklight
	Ex Libris-Primo Central	LibraryFind
	WorldCat Local	Franklin
	Ovid Discovery	SOPAC

4. Discovery Service: Concept and Architecture

Libraries are ever growing in their collection of both print and online database. In the same time, Users has to make several searches on every database in the library. While if Library will implement any Discovery Layer software for entire collection, so user need not to make several searches. It will provide to users just like single window search for whole collection of the library.

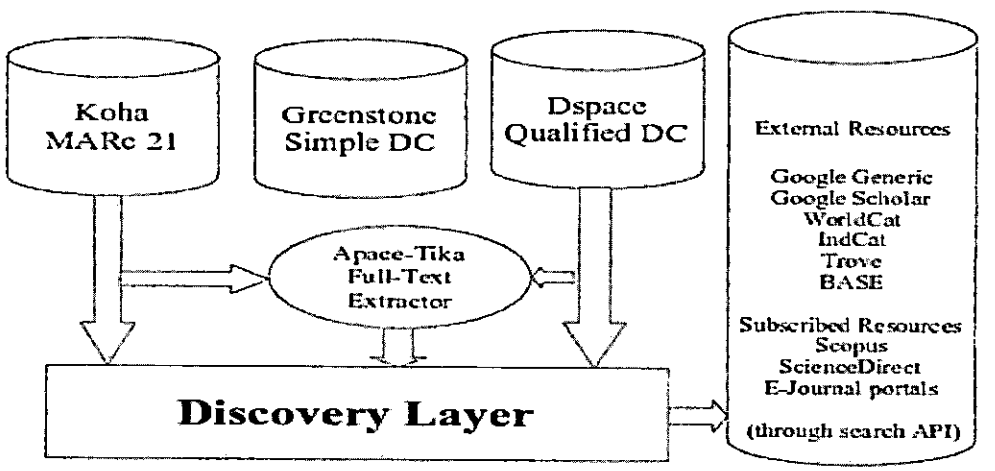


Figure 2: Search & Retrieval Architecture in Libraries with Discovery Layer.

VuFind: Open Sources Software for Cross Collection Discovery Service.

Search. Discover. Share.

About VuFind Discovery Service:

VuFind was developed by Villanova University's Falvey Memorial Library and was released in July 2010. It is open source software and not affiliated or coupled with any LMS. VuFind is however marketed and supported in the UK by PTFS Europe, primarily as the discovery interface for the Koha LMS. VuFind also uses a Solr index and can index locally sourced metadata from disparate sources, including but not limited to the library catalogue. It presents a simple, Google-like interface with keyword searching. It can also be deployed as an interface layer via APIs to search ProQuest- Summon, EBESCO-EDS or Primo. VuFind can be installed in Linux and window environment and it's required Apachi HTTP Server, PHP, Java and MySQL database

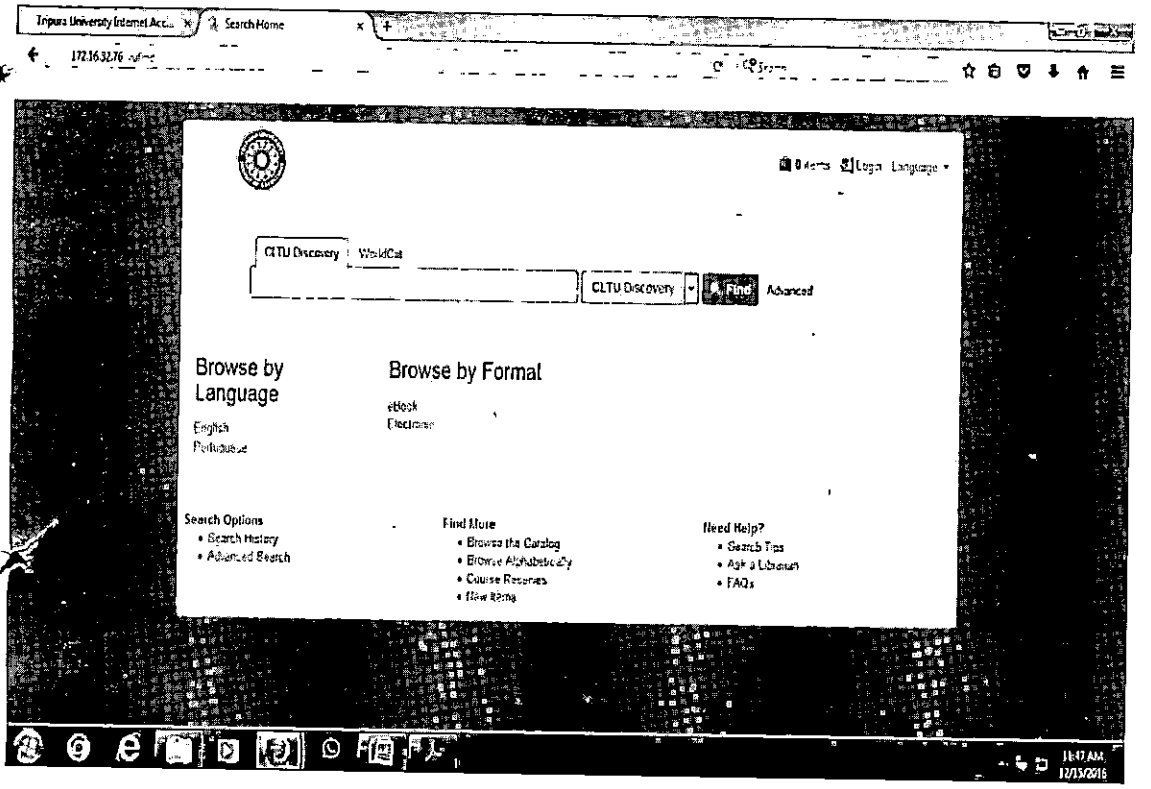


Figure 3: VuFind Discovery Layer Interface of Tripura University Library

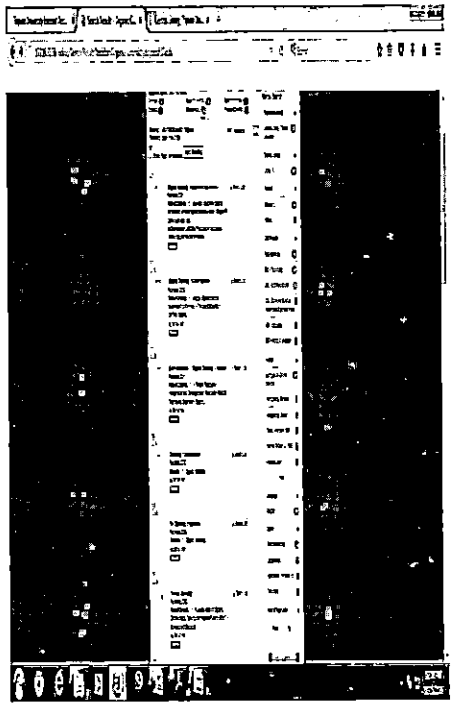


Figure 4: VuFind Discovery Layer Search result from Tripura University Library.

VuFind is modular so it is up to the user how many features and functions to implement. Its open source nature allows technically minded users to modify modules or add new functionality. Over 100 institutions are using or evaluating VuFind. Institutions running live instances include the London School of Economics, the National Library of Ireland, Yale University, Birkbeck College. University of Kent and in India, Central University of Kerala, Tripura University. VuFind offers limiting by facets including format, call number, language, author, and genre. Other features include suggested resources and searches, browsing, creating lists, texting, e-mailing, tagging, and commenting features, persistent URLs, and multi-language capability. However, as with Blacklight, VuFind cannot index 3rd party data or provide access to databases, full-text articles etc.

VuFind is a library resource portal designed and developed for libraries by libraries. The goal of VuFind is to enable your users to search and browse through all of your library's resources by replacing the traditional OPAC to include:

- ILMS-Catalog Records
- Digital Library Items
- Institutional Repository

- Institutional Bibliography
- E-Books/Online Journals Catalog Records
- Institutions Faculty Publications
- Other Library Collections and Resources

VuFind is completely modular so you can implement just the basic system, or all of the components. And since it's open source, you can modify the modules to best fit your need or you can add new modules to extend your resource offerings.

VuFind runs on Solr Energy. Apache Solr, an open source search engine, offers amazing performance and scalability to allow for VuFind to respond to search queries in milliseconds time. It has the ability to be distributed if you need to spread the load of the catalog over many servers or in a server farm environment.

5. Features of VuFind

VuFind offers a number of features that enhance usability:

- The search system allows for the user to search from a basic search box and then to be able to narrow down the results by clicking on the various facets of the results by format, call number, language, author, genre, era, region, and more
- The search results page is able to display the live status of a record through the use of AJAX by querying the catalog at that exact moment. And since it is done through AJAX after the results have loaded, the page will not slow down for any reason.
- Suggested resources and searches
- Browsing capability
- Personal organization and annotation of resources through favorites lists, texting, e-mailing, tagging, and commenting features
- Persistent URLs
- APA or MLA citations
- Author biographies
- Multi-language capability with translations available in Brazilian Portuguese, Chinese, Czech, Dutch, English, French, German, Japanese, Spanish,

Bengali (India) and more

Benefits to Library Users: Discovery service is most useful to the library users particular faculties and research scholar of the university. Some of the benefits of Discovery service are listed below:

- Discovery tools provide access to a large amount of material, of many different types.
- Discovery tools are fast since searching is in local or centralized indexes (even though these are large).
- Provide the multiple search navigation and filter facility.
- They focus primarily on electronic full text database.
- They are easy to use.
- It is proving the single window search for all resources available in libraries.

6. Conclusion:

Library is having various kind of database for their each category of resources. In these aspects users are not getting the required information or documents in a single search. Users are getting the every kind of information from a single window search, just suppose if Google will come in the subject specific form with different products name whether Google will be the first place for users to make search of all kind of information. The same scenario is in the libraries also having the separate database of each type of resources. But if Library will implement the Discovery service and providing the single window search to its users, so users will be more like make search in the library and the same time Librarians or other information professionals can analyze discovery service usage logs to identify periodicals or even databases that were most heavily used in the previous quarter or year.

Discovery Service or Web-scale discovery service, described as similar to Google but for accessing a library's academic content. It provides a single window search box for finding all items in a library's print and online collection including print books, print journals, Newspaper articles, Thesis & Dissertations, e-books, e-journals and other academic databases, multimedia items and other holdings. VuFind is an open source software which provides the libraries a single window search of all its resources.

References:

1. An Evaluation of Serials Solutions Summon As a Discovery Service for the Dartmouth College Library, November 10, 2009. Retrieved September 12, 2017, from http://www.dartmouth.edu/~library/admin/docs/Summon_Report.pdf?mswitch-redir=classic.
2. Breeding, Marshall. (2014). Library Resource Discovery Products: Context, Library Perspectives, and Vendor Positions. *Library Technology Reports,* 50 (1). Retrieved September 15, 2017, from: http://dx.doi.org/10.5860/ltr.50n1
3. Breeding, Marshall. (2008). Progress on the DLF ILS Discovery Interface API: The Berkeley Accord. *Information Standards Quarterly,* 20 (3): 18-19. Available at: http://www.niso.org/apps/group_public/download.php/5637/ISQv20no3.pdf
4. Burke, Jane. (2010). Discovery versus Disintermediation: the new reality driven by today's end-user. Retrieved September 20, 2017, from http://www.vala.org.au/vala2010/papers2010/VALA2010_57_Burke_Final.pdf
5. Chambers, Sally, ed. *Catalog 2.0: The Future of the Library Catalog.* Chicago: ALA Neal-Schuman, pp. 37-64. ISBN: 978-1-55570-943-3.
6. Luther, J., & Kelly, M. C. (2011). The next generation of discovery: The stage is set for a simpler search for users, but choosing a product is much more complex.(LJ SERIES: THE BIG TOOLS). Library Journal, 136(5), 66.
7. Pal, S. K. (2017). Library Resource Discovery Service: Future of the Libraries. In P. Rai (Ed.), *Gearing up the future: Library Initiative for Digital India. 1*, pp. 906-915. New Delhi: Indian Library Association.
8. Pal, S. K., GS, V., & Kumar, V. (2015). Knowledge Management in Academic Libraries in the ICT Era . In H. Tripathi (Ed.), *Towards Knowledge Management in e-Libraries.* New Delhi: DPS Publishing house.
9. Pal, S. K., & Bhattacharjee, N. (2015). Information Sources and Services offering to Tripura University Researcher, Students and Faculties: A case Study of Central Library, Tripura University. *International Research Journal*

of Library & Information Science ,5 (4).

10. Trapido, Irina. (2016) Library Discovery Products: Discovering User Expectations Through Failure Analysis. doi:10.6017/ital.v35i2.9190.
11. Way, Doug. (2010). The Impact of Web-scale Discovery on the Use of a Library Collection. Retrieved September 20, 2017, from http://scholarworks.gvsu.edu/library_sp/9.
12. *Features.* (2017.). Retrieved September 20, 2017, from VuFind: https://vufind.org/vufind/
13. VuFind. (2017). Retreived September 15, 2017 from Wikipedia: https://en.wikipedia.org/wiki/VuFind

Authors Profile



Surendra Kumar Pal is presently working as Assistant Librarian at Central Library, Tripura University (A Central University), Agartala, Tripura. He did his Bachelor in Chemistry and Botany from University of Lucknow and Master Degree in Library & Information Science form Babasaheb Bhimrao Ambedkar Central University, Lucknow. Beside this he has acquired Post Graduate Diploma in Computer Application form Annamalai University in 2012. Prior to this he was working with NKRC-Consortium, National Science Library, NISCAIR-New Delhi. Earlier to this, he has also worked with Indian Institute of Science Education & Research (IISER), Trivandrum, Kerala. He has published 26 numbers of articles/research papers in national & international journals and conference proceedings and chapters in edited books. He has also edited one Book. His areas of interest are Librarianship, Academic Library System, ICT Application in Libraries, Knowledge Management, Library Automation and Networking, Digital Library, e-learning, Cloud Computing, Web Discovery System, Bibliometrics etc. His ORCID Researcher Id is 0000-0002-9318-443X. He is life member of ILA, IATLIS, IASLIC, MANLIBNET, SALIS, SIS, SAL-New Delhi etc. He has been associated with few journals as a Member of Editorial Board. He served as reviewer for few Indian journals..

A Study on Usage and Awareness of Library Resources by the UG Students of Dau Kalyan Singh College of Agriculture and Research Station, Bhatapara, Chhattisgarh

Uaday Kumar Watt

Research scholar
Deptt. of Library & Information Science,
Guru Ghasidas Vihswavidyalaya, Bilaspur , C.G.
Email: ukwatti2007@rediffmail.com
and

Dr. Brajesh Tiwari

Associate Professor
Deptt. of Library & Information Science,
Guru Ghasidas Vihswavidyalaya, Bilaspur , C.G.
Email: brajeshtiwari65@gmail.com

Abstract: A study was conducted in DKS College of agriculture & research station, Bhatapara. A questionnaire based survey was used for data collection. The questionnaires were distributed among 216 students who visit the library. It was found that the undergraduates are overall satisfied with available library resources, services and facilities. But it further found that library resources and services are not being fully utilized by undergraduates. Based on these findings, it was recommended that a orientation program should be conducted to promote awareness and use of library resources. It was also suggest by the users of library, should be increase the acquisition of Books and online information sources while continuing to acquire general and reference materials to fulfill the academic needs of the users.

Keyword: Users; Library resources; Internet; online resources

1. Introduction:

A library is a place where books were stored and preserved for study, reading or reference. Most of the students are not aware about library resources which are purchase and subscribed by the library. Lack of Knowledge about Library resources students are not able to access all the resources and complaining the Library staffs. In this sense Librarian are conducted many awareness program, Exhibition, orientation program etc. based on these activities students are aware and maximum utilize as per requirements. Library is an umbrella which provides reach of all information resources to users.

2. Objective:

1. To study the usage of library services, resources and facilities,
2. To study the search skills of internet,
3. To study the requirement of Orientation programme,
4. To survey the knowledge of Copy right laws,
5. To study the satisfactoriness with the available resources and services,
6. To obtain feedbacks to improve the library services more effectively.

3. Methodology

The research was conducted among the students who use the library. In order to meet the objectives of the study, survey methodology was used. The main research instrument was self administered questionnaire which consisted of structured questions. The population of the study consisted of 216 undergraduate students.

4. Analysis of Data:

1. Frequency Distribution of Sex of Respondents

S.	Gender	Frequency	%
1	Male	132	61
2	Female	84	39
		216	100

Table 1 show that the male respondents were more than their female counterparts. It appears that there is a higher male enrolment than females in this agriculture college. The percentage of the male respondent is 61 while female is 39 .

2. Frequency Distribution of Age of Respondents

SN	Age	Frequency	%
1	17-19	83	39
2	20-22	117	54
3	23 and above	16	7
		216	100

Table 2 indicates the respondents into three age groups i.e., 17-19 years, 20-22 years and 23 years and above. Among the total study, 117 (54%) respondents were from the age group of 20-22, 83(39) respondents were from the age group of 17-19 and 16(7%) respondents were in the age group of 23 and above. Therefore, it concludes that the majority respondents are in the age group of 20-22 years.

3. Frequency distribution of library visited

SN	Variables	Frequency	%
1	Daily	39	18
2	Alternate day	91	42
3	Once in a week	49	23
4	When necessary	37	17
		216	100

It is clear from the Table 3 that, all the respondents of the study the Students of college are in the habit of using the library. Among them, about 18% of respondents visit the library everyday, 42% of respondents visit the library every alternate day, 23% of respondents visit once in a week, 17% of respondents visit the library occasionally. It means all students have a need of library for fulfill their academic purpose and other related information.

4. Email

SN	Variables	Frequency	%
1	Yes	171	79
2	No	45	21
		216	100

Table – 4 shows that 79 percent (171) of the respondent have an e-mail account where as 21 percent (45) don't have their e-mail account. Hence it is clear that maximum numbers of the respondents are aware of the latest technology.

5. Frequency of use internet

SN	Variables	Frequency	%
1	Every day	62	29
2	Few times a week	106	49
3	Once a month	35	16
4	Never	13	6
		100	100

Table-5 shows the frequency of use of internet. it is found that number of respondents assessing internet few times a week are more nearly about 49%(106) followed by assessing regularly nearly about 29%(62).The respondents who rarely use the internet are 16%(35) and 6% of the respondents never use the internet. Therefore, it concludes that almost all the respondents are aware of use of internet.

.6. Skills in the use of Internet

SN	Variables	Frequency	%
1	Very good	51	24
2	Medium	84	39
3	A little	68	31
4	No	13	6
		216	100

Table-6 shows that 24% of the respondents are very good, 39% of the respondents are medium and 31% of the respondents have the little knowledge of accessing the internet. Therefore it is observed that almost all the respondents have the knowledge of accessing the internet.

7. Use of Information sources

SN	Information sources	YES	%	NO	%
1	Books	206	95	10	5
2	Online Books	95	44	121	56
3	Krishikosh database	83	38	133	62
4	National digital library	40	19	176	81
5	Egyankosh database	78	36	138	64
6	Newspaper	134	62	82	38
7	Reference collection	90	42	126	58
8	Internet	186	86	30	14

The present survey has also attempted to find out of sources with which the students are mostly acquainted with and resources that are used with ease. Most of the students (95%) are found to be using books frequently followed by reference books (42%). and newspapers (nearly 62%).Among other sources frequently used, Internet was used by 86 percent and Krishikisha database by 38%. Online Books,Krishikisha database,National digital library and Egyankosh database are rarely used by the respondents.

8. Information search strategies

S.	Particulars	Mostly	Rarely	Never
1	Use references at the back of consulted books	48 (22%)	64 (30%)	104 (48%)
2	Consult colleagues to obtain needed information	109(50%)	78 (37%)	29 (13%)
3	Consult Teachers	118(55%)	73(34%)	25(11%)
4	Consult Librarian	94 (44%)	80 (37%)	42 (19%)
5	Reference materials to obtain information	149 (69%)	49 (23%)	18 (8%)
6	Through internet	135(63%)	63 (29%)	18 (8%)

Table-8 shows the search strategies used by the students in the process of their searching for information, the findings revealed that 63 percent of the students agreed that they use internet to obtain needed information. It also revealed that 55 percent of the students agreed that they consult teacher to obtain needed information. The study also revealed that 50 percent of the students agreed that they consult colleagues to obtain needed information. Moreover, the findings revealed that 69 percent of the students agreed that they use the use reference materials to obtain information. This shows that the undergraduate students in college do use search strategies such as internet, reference material, teachers and colleagues to obtain information.

9. Orientation programme

SN	Variables	Frequency	%
1	Yes	204	94
2	No	12	6

Table-9 shows that almost all the respondents require orientation programme to avail the library services effectively.

10. Copy right law

SN	Variables	Frequency	%
1	Yes	78	36
2	No	138	64

Table-10 shows that about 64% of the respondent do not know about copy right and copy right infringement.

11.User satisfaction

SN	Library facility	Completely	Partially	Not satisfied
1	Reading material	78 (36%)	96 (44%)	42 (20%)

2	Computers	73 (34%)	90 (42%)	53 (24%)
3	Seating capacity	62 (29%)	78 (36%)	76 (35%)
4	Cleanliness	163 (75%)	49 (23%)	4 (2%)
5	Staff	148 (69%)	46 (21%)	22 (10%)
6	Lightning	151 (70%)	40 (18%)	25 (12%)
7	Security	128 (59%)	48 (22%)	40 (19%)
8	Online resources	85 (39%)	102(47%)	29 (14%)
9	Internet	125 (58%)	70 (32%)	21 (10)

Table 11 shows that on an average all the respondents are satisfied with the library services available in the college.

5. Suggestions

Following Suggestion are given for the library improvement:

i. Internet speed should be increase
ii. Purchase more competitive books
iii. Purchase more reading material
iv. Increase seating arrangement of users
v. Issue more books in one time
vi. Practical Manual all subject should be available
vii. More hindi books required
viii. JRF books
ix. No late fee
x. more online books required
xi. Printer should be available
xii. Purchase Motivated books
xiii. Air-condition

6. Conclusion:

Library resources are very useful for the students; students are mainly dependant on library resources for academic purpose. Library is also providing e-resources facilities. Students are expecting from library as suggestion mentioned. Most of the students of aware library resources but they are not fully utilize and satisfied the library services in available resources.

Reference:

1. Baro, E. Emmanuel & Fyneman, Biokuromoye (2009).Information literacy among undergraduate students in Niger Delta University. *The Electronic Library*, 27 (4),659-675.
2. Keshalu, P. & Srinivasulu,V.(2016).Awareness of information literacy among undergraduate students of paritala sriramulu government degree college: Penukonda. *International Journal of Research in Library Science*, 2(2),109-115.
3. Munshi,Shamim Aktar & Nagar, Priyanka (2016).Information literacy skills among the postgraduate students at Aligarh Muslim University, India. *Library Philosophy and Practice (e-journal)*.Retrieved October 10,2017, from http://digitalcommons.unl.edu/libphilprac/1419.
4. Padme, Satish L. & Dhande, Shankar (2011).Assessment of Computer and Information Literacy among Students. *Journal of Advances in Library and Information Science*, 3(1),61-66.
5. Ramamurthy, P., Siridevi, E. & Ramu, M. (2015).Information Literacy Search Skills of Students in Five Selected Engineering Colleges in Chittoor District, Andhra Pradesh: A Perspective. *International Research: Journal of Library & Information Science*, 5(1), 107-121.
6. Sasikala, C. & Dhanraju, V. (2010).Assessment of Information Literacy skills among the Science students of Andhra University: A survey. *Library Philosophy and Practice (e-journal)*.518. Retrieved October 10,2017, from http://digitalcommons.unl.edu/libphilprac/518.

Author Profile



Uaday Kumar Watti is research scholar of DLIS, GGV, Bilaspur (C.G.) and working in as Asstt. Librarian, DKS College of Agriculture & Research station , Bhatapara (C.G.)

Email: ukwatti2007@rediffmail.com



Dr. Brajesh Tiwari is presently working as Associate Professor at DLIS, GGV, Bilaspur (C.G.)

Email: brajeshtiwari65@gmail.com

Assessing Information Literacy skills among Social Science PG student in Central University of Karnataka, Kalaburagi: A study

Dr. P.S. Kattimani

Deputy Librarian
Central University of Karnataka,
Kalaburagi, Karnataka(India)
Parashu.kattimani@gmail.com

Abstract: The paper describes the assessing information literacy skills among Social Science PG(Post Graduate) student of Central University of Karnataka, Kalaburagi. The objectives deals with the study of awareness and skills approached towards information sources provided to the students regarding print and online. The detailed questionnaire was distributed among 120 students, and Out which 95 filled in the questionnaire were received in response with 79.16%.

Keywords: Information Literacy skills, Central Library, CUK, Competency and Academic libraries.

1. Introduction

Information Literacy is considered as a powerful weapon for lifelong learning. It is common to all disciplines, to all learning environments and to all levels of education. Now a day the concept of Information Literacy has gained considerable attention in the higher education, and many libraries and information centres introduce use education and information literacy programmes to educate the users on information resources. Search techniques, search strategies, scholarly communications and other aspects. But, implementing and managing information Literacy programmes in higher educational institutions has many challenges. In this context, the higher educational institute libraries need to be dynamic, and the libraries are to take a leading role in assessing the information literacy competency of the students and plan for conducting such programmes to improve the situations.

Interest in information literacy (IL) assessment in academic libraries has grown rapidly in recent years, as librarians have realized the importance of demonstrating their value to the teaching and learning missions of their higher education institutions. Assessing IL instruction at class, course, and program levels enable librarians not only to understand student learning and improve instruction but also to generate evidence that showcases librarians' roles in student learning

time to time.

The term "Information Literacy" which is also known as "Information Competency" is generally defined as the ability to access, evaluate, organise and use information from a variety of sources. The American Library Association defined information Literacy as an understanding and set of abilities, enabling individuals to recognize when information is needed and can locate, evaluate and use effectively the needed information.

2. Objectives

1. To identify the level of information Literacy among Social science PG student of CUK
2. To identify areas of strengths and weakness in information literacy skills among Social science PG students.
3. To know the search techniques used by Social science PG students.
4. To know the kind of information literacy programmes provided by the library.
5. To know the type of ILP is required for social science PG students.

3. Methodology

The survey method was implemented for the present study, to collect the data through structured questionnaire was designed on ACRL standards basis, and 120 Questionnaire were distributed among Social Science PG Students of the Central University of Karnataka. Out which 95 filled in the questionnaire were received in response with 79.16%.

4. Analysis

The retrieved data was analysed and presented in the form of tables and graphs.

Table-1 Gender wise distribution of Respondents

Sl.No	Gender wise	Respondents	Total %
1	Male	59	62.1
2	Female	36	37.8

- Table-1 Reveals that the gender wise distribution of respondents out 120 respondents of students is about 59 (62.1) are Male, and 36 (37.8) are Female.

Table-2 Purpose of visiting to Central Library

Purpose of Visit	Total	Percentage
Reading textbook	82	86.03
Borrowing and lending	65	68.04
Consulting reference materials	60	63.15
Using internet	52	54.73
Photocopying relevant materials	50	52.63
Recreational reading	41	43.15
Other	15	15.78

Table-2 Show that purpose of library visit by Social science PG students of the Central University of Karnataka. The students opined that they visit the library more to read textbook 86.03% and visit very less to recreational reading 43.15%.

Table-3 Use of Information resources

Types of Information Resources	Total	Percentage
Books	90	94.73
Reference Books	82	86.31
Newspapers	65	68.42
Internet	58	61.05
Periodicals	38	40.00
E-Journals	45	47.36
E-Books	55	57.89
Web OPAC	60	63.15
Online database	58	61.05
Library OPAC	55	57.89
Other	5	5.26

Table-3 Shows that the frequency of sources of information used by Social Science PG students. The frequently used information resources are Books with 94.73% and least frequently used resources periodicals 40.00%.

Table-4 Purpose of use of Internet

Purpose	Total	Percentage
Searching (subject database)	75	78.94
E – mail	70	73.68
Chatting	35	36.84
Academic work	66	69.47
Further studies	50	52.63
Job opportunities	35	36.84
Other	02	2.10

Table-4 shows that the purpose of use of the Internet by Social Science PG students. The major purpose of using internet 78.94% is searching subject databases pertain to social science subject, followed by accessing e-mail 73.68% and last on the list with the least used purpose for browsing net are Job opportunities 36.84%.

Table -5 Evaluation of information available on web by students

Evaluation of information available on web	Total	Percentage
The most reliable information on the web is from the websites of museums, recognised research organisations, scientific societies and government.	65	68.42
Most of the information available on the internet has undergone a rigorous peer review process and so can be used as a reference for writing research papers.	42	44.21
Most of the information on the internet has not been checked for accuracy of content and so should not be used without careful screening and evaluation.	30	31.57
One should only use information on the web that is offered by a recognized authority on the subject, or that can be verified using other sources.	35	36.84
I don't know	5	5.26

Table-5 Depicts that the awareness and usage of evaluation of information on web accessed by PG social science students for web resources pertain to their study. The most depended criteria for assessing web information is the known sites of scientific and government with 68.42%, and 5.26% said that they really don't know any criteria's for evaluating the information resources on the web

Table- 6 Types of Search techniques used

Search techniques and strategies	Total	Percentage
Simple keywords	88	92.63
Boolean operators (AND, OR, NOT)	61	64.21
Truncation	10	10.52
Field search Title URL etc.	35	36.84

Table-6 Shows that the application of various search techniques and strategies by social science PG students used in searching web information. The majority of students use simple keyword search 92.63%, and least number of students use Truncation techniques in searching web 10.52%.

Table-7 Familiarity with copyrights

Sl.No.	Copyrights	Respondents	%
1	Familiar	65	68.42
2	Not familiar	30	31.57

Table-7 shows that the familiarity with copyright by respondents. Out of 95 respondents, social science PG students responded 68.42% are familiar with copyrights, and 31.57% are not familiar of copyrights.

Table- 8 Awareness of fair use and plagiarism

Response	Total	Percentage
Copying or rewording the content written by others and using it without citing the source is plagiarism	60	63.15
Reproducing the work for criticism and comment, given credit to the author is fair use	55	57.89
Using the content for teaching, scholarship and research, and citing the source is fair use	35	36.84
Using Audio/Video or pictures from the Net without giving credits to the Creator is plagiarism	21	22.10
Presenting the work of others as your own is plagiarism	20	21.05
Not aware	38	40.00

Table-8 Shows that the knowledge about the fair use and plagiarism by Social science PG students. 63.15% of PG social science students are aware of the fair use and plagiarism, and 40.00% students have not respondent to this question due to lack of awareness regarding fair use policy.

Table- 9 Preference of Information Literacy Programme

Preferred mode of imparting ILP	Total	Percentage
Printed information literacy instructions	68	71.57
Integrated into to course curriculum	45	47.36
Online IL instructional modules via college website	59	62.10
Online IL instructional modules via Library website	36	37.89
Workshops	61	64.21

Table-9 shows that the preferred mode of Information Literacy Programme by PG social science students. 71.57% of Students have preferred Online IL instructional modules, followed by 64.21% learnt through workshops, and less preferred mode result received online IL instructional modules via library website 37.89%.

Table-10 Need of Information Literacy Programme

Suggested areas on ILP are required	Total	Percentage
Internet	80	84.21
Email	75	78.94
Computers	72	75.78
Online databases	63	66.31
OPAC	56	58.94
Use of printed sources (Library classification and catalogues)	55	57.89
Institutional repositories	41	43.15
Use of electronic sources	40	42.10
In-house databases	35	36.84

Table-10 shows that the suggested areas for IL programmes are required students of University. In-house databases 36.84% which one of the areas should improve and followed by Use of electronic sources 42.10%.

5. Findings and suggestions

Based on the present study following findings are drawn.

- Majority of students visit the library to read textbook 86.03% and visit very less to recreational reading 43.15%.
- The frequently used information resources are Books with 94.73% and

least frequently used resources periodicals 40.00%.

- The major purpose of using internet 78.94% is searching subject databases pertain to social science subject, followed by accessing e-mail 73.68% and last on the list with the least used purpose for browsing net are Job opportunities 36.84%.
- The most depended criteria for assessing web information is the known sites of scientific and government with 68.42%, and 5.26% said that they don't know any criteria's for evaluating the information resources on the web.
- The majority of students use simple keyword search 92.63%, and least number of students use Truncation techniques in searching web 10.52%.
- The most of the responded 68.42% are familiar with copyrights, and 31.57% are not familiar of copyrights.
- 63.15% of PG social science students are aware of the fair use and plagiarism, and 40.00% students have not respondent to this question due to lack of awareness regarding fair use policy.
- 71.57% of Students have preferred Online IL instructional modules, followed by 64.21% learnt through workshops, and less preferred mode result received online IL instructional modules via library website 37.89%.
- In-house databases 36.84% which one of the areas should improve and followed by Use of electronic sources 42.10%.

6. Conclusion

To have successful functioning of an information literacy program in an institution, librarian's role is very important. Moreover, information literacy programs are best embedded in the curriculum to train the students, especially for first semester students. In most instances, cooperative, problem-based programs may be the most effective. The need of proper Information literacy education is required for students also, due to this lack of Information Literacy education research depends on more electronic resources. Social science students lack to evaluate and assess the authorities' information.

References

1. Jackie Belanger and Rebecca Bliquez. Developing a collaborative faculty-librarian information literacy assessment project. Library Review. Vol. 61

No. 2, 2012. pp. 68-91. (Emerald Group Publishing Limited accessed on 15.10.2017).

2. Kumbar Mallinath, Tejashwini B and Mahadeva S. An Assessment of Information Literacy Skills Among Science PG students of Bangalore University. Integrated ICT in Academic Libraries: Making a Difference in Knowledge Age, Published in National Conference volume organised by Central Library, Central University of Karnataka, Kalburagi. Pp-572-579.
3. Gadagin B R. Information Literacy programmes in Higher Educational Institutions of Hyderabad Karnataka Region: A Survey. Integrated ICT in Academic Libraries: Making a Difference in Knowledge Age, Published in National Conference volume organised by Central Library, Central University of Karnataka, Kalburagi. P-580.
4. Adkins, D. and Hussey, L. (2006), "The library in the lives of Latino college students", *Library Quarterly*, 76 (4), 456-80.
5. Asher, C., Case, E. and Zhong, Y. (2009), "Serving Generation 1.5: academic library use and students from non-English-speaking households", College & Research Libraries, Vol. 70 No. 3, pp. 258-72.
6. Day, J.C., Janus, A. and Davis, J. (2005), Computer and Internet Use in the United States, 2003, US Census Bureau, Washington, DC, available at:www.census.gov/prod/2005pubs/p23-208.pdf
7. Delgado, G.P. and Lue´vano, S.C. (2007), "Semillas de Cambio: the teaching of information competency in Chicano and Latino studies", in Jacobson, T.E. and Mackey, T.P. (Eds), Information Literacy Collaborations that Work, Neal-Schuman Publishers, New York, NY, 95-108.
8. Hinojosa, S. (2000), "Libraries in the new millennium – and what about the students?", in Gu¨eren˜ a, S. (Ed.), Library Services to Latinos, McFarland, Jefferson, NC, pp. 121-30.
9. Whitmire, E. (2003), "Cultural diversity and undergraduates' academic library use", Journal of Academic Librarianship, Vol. 29 No. 3, pp. 148-61.
10. Zhong, Y. and Alexander, J. (2007), "Academic success: how library services make a difference", in Thompson, H.A. (Ed.), Sailing into the Future: Charting Our Destiny.
11. Proceedings of the Thirteenth National Conference of the Association of College and Research Libraries, March 29-April 1, Baltimore, MD, ACRL, Chicago, IL, pp. 141-57.
12. Solis, J. and Dabbour, K.S. (2006), "Latino students and libraries: a US federal grant project report", New Library World, Vol. 107 Nos 1/2, pp. 48-56.
13. Association of college and Research Libraries(USA).2004. Information Lit-

eracy Competency Standards for Higher Education. ACRL-2003. http://www.ala/acrl/acrlstandards/standards.guidelines.htm accessed on 5.10.2017.

About Author



Dr. P.S.Kattimani is presently working as Deputy Librarian at the Central University of Karnataka, Kalaburagi, Karnataka. He holds M.L.I.Sc., PGDLAN., M.Phil and Ph.D in Library and Information Science. He has over 18 years of professional experience. Prior to his current position with the Central University of Karnataka, he worked with the British Library, Bangalore; Wipro Technologies, Hyderabad; and Gulbarga University, Gulbarga. He had visited Orlando, USA to attend and present a paper at the 11th World Multiconference on Systemic Cybernetics and Informatics 2007. Besides securing two best paper awards at the national and international levels, he has presented a number of papers in National and International conferences and has contributed a range of research papers in the LIS Journals. He has delivered a number of special lectures on topics such as Institutional Repositories, Developing Digital Library, Digital Library Software, Library Automation, and Information and Communication Technology in Libraries, Resource Sharing, Knowledge Management; Portals and Web OPAC; Digitization; User Education, Information Literacy; and E-Learning. He is also a member of many professional bodies in India and abroad.

Awareness and Use of Social Networking Tools by the Students of National Institute of Technology Kurukshetra : A case study

Anil Sharma

Abstract: *The present study focuses on the awareness and use of social networking sites among students in National Institute of Technology Kurukshetra. Data for the study was collected via a well-structured questionnaire that was administered to 200 users of Institute. Out of 200, a total of 173 questionnaires duly completed were received back, showing an overall response rate of 86.5 present. The results revealed that the most of the respondents use the social networking tools. The findings of this research reveal that majority of students adopt one or more social networking tools. The results of the survey reveal that all of the respondents were aware of the Social Networking Sites. Majority of 71.09% respondents used social networking tools for communicate with family and friends purpose. The data so collected were analysed and interpreted with the help of MS Excel. The study findings reveal that 76.87% respondents use the social networking tools many times in a day. The results revealed that most of the respondents used Whatsapp, facebook and Youtube.*

Keywords: Social Media, Social Networking Tools, Facebook, Youtube, Whatapp, Web 2.0, NIT Kurukshetra.

1. Introduction

Advances in the World Wide Web (WWW) have greatly changed the way people access information and communicate with each other. Social Networking Sites are basically those websites which provide social community for people interested in a particular subject or interest together (Raghunadh, M.V. 2016). Oxford dictionary defines social networking sites as "the use of dedicated websites and applications to interact with others users or to find people with similar interest to one's own". Social networking sites (SNSs), such as Facebook, Youtube, Twitter etc., have become ubiquitous and well-established online social platforms in people's daily life (Lin and Lu, 2011). Nearly every moment, a large number of people use SNSs to contact with others, express them, read current news, display beautiful pictures or just share their daily lives. We are living in digital world, using I-Phone, smart phone, computers, and tablets are connected through social media like Facebook, YouTube, and Twitter, etc. The SNSs have specialized resources and services like chatting, blogging, sharing photos, videos & audios etc that fulfil the needs of the diversified user. SNSs are recognized as being one of the most famous emerging technologies and should be used as a teaching and learning tool to help students and teachers to achieve higher levels of success in and out of the

classroom (Mansour, 2015). The evolution of the Web has led to the development of a collection of technologies known as Web 2.0. The term Web 2.0 was coined by O'Reilly Media in 2004 and refers to web applications, which provide for online collaboration, participation, social networking, interaction and user-generated content sharing. Social networking sites are profile based websites that allow users to maintain social relationships by viewing, visiting, and sharing their lists of social connections with other members (Ahn, 2011). It should be noted that social networking sites can be used as an interactive platform for academic communication and can be sources of information, knowledge and help. Hence an effort is made in this paper to know how students in a metro environment are using these tools.

2. Different forms of Social Networking Sites.

Forms of social media applications

Social Networking Tools	Instant Messaging	Websites	Multimedia applications
LinkdIn	Google Chat/Talk	Blogs	YouTub
Google+	WhatsApp	Wikis	Flickr
Facebook	WeChat		Picasa
Twitter	Blackberry		

3. National Institute of Technology (NIT), Kurukshetra

National Institute of Technology Kurukshetra, Haryana is a premier Technical Institute of the region. The institute started working as Regional Engineering College, Kurukshetra in 1963. Like other Regional Engineering Colleges of India this institution too, had been a joint enterprise of the State and Central Governments. This Institute was conferred upon status of Deemed University on June 26, 2002. Since then it has been renamed as National Institute of Technology, Kurukshetra.

4. Objectives

This study has been conducted keeping in view the following objectives:

1. To find out the awareness and use of social networking tools by the students of National Institute of Technology, Kurukshetra
2. To find out the social networking sites frequently used by the students.

3. To find out the purpose of use of the SNSs by the NIT students.
4. To find out the most useful functions of SNSs used by the NIT students.
5. To find out assess the frequency of using SNSs
6. To find out the problems faced by students while using SNSs.

5. Review of the Literature

Raghu Nadh (2016) conducted a study on Use of Social Networking Tool by the Students of MNR Medical College, Sagareddy, Telangana State and has found out Social media is necessary for every person in today's world of technology. People use it not only for information and interaction but also for entertainment. Majority of (83.21%) used for their academic purpose and (11.79%) students were aware of facebook followed by (11.33%) YouTube, WhatsApp, (9.97%) Twitter.

Kenchakkanavar and others (2016) conducted a study on Use of Facebook by Research Scholars of Karnatak University, Dharwad and found that (98.62%) research scholars were aware of facebook and (45.33%) spend a hour on facebook followed by (18.22%) research scholars who spend less than an hour. The study revealed that majority (80.84%) of research scholars find conference/seminars related photos, files, audio followed by (73.36%) research scholars found useful information related to their research work. The study indicated the majority of (72.89%) respondents tell that access denied by the University is the major hindrance while using facebook. Most of research scholars (62.14%) respondents attribute that poor internet connectivity is a challenging giving task.

Gang WAN (2014) conducted a study on How Academic Libraries Reach Users on Facebook and found that the number of libraries that had established facebook page when the data was collected and the majority libraries 90.4% studied have at least one facebook page. The number of fans might affected by various factors such as a pages launch time, frequency of posting, topics and their pages very often. 42% of them created between 1 and 5 posting and 19.5% did not post anything in the month studied.

Hamade (2012) conducted a study on Perception and use of social networking sites among university students and find out that Twitter as the most popular site among students with 89% Facebook was second with 62%. The majority of respondents (70%) allow everybody to view their accounts while only 89 respondents (30%) adjusted their privacy settings to allow only friends to access their information. Only (34%) posted their real photo on their page in the social networking site. The study revealed that majority of respondents (71%) said that

social networks helped them maintain better relations with family, relatives, and friends.

6. Methodology

A questionnaire was used to collect the data from the respondents. The questionnaire was distributed among students of National Institute of Technology Kurukshetra. A total of 200 students were considered for the present study. The questionnaires were distributed to all 200 students, out of which 173 duly filled in questionnaires were received back with a response rate of 86.5%. The data then collected were gathered. The collected data was entered in excel sheet and analyzed by using simple statistical technique.

7. Analysis of Data

The data from the users were checked and numerically coded and entered on to a spreadsheet such as Microsoft Excel to obtain frequencies, percentage etc. the results were created and presented in tables and graphs form. The major results of the study presents as follows.

Table- 1 Gender wise Distribution of Respondents

Gender	Respondents	Percentage
Male	103	59.53
Female	70	40.46
Total	173	100

Source: Table compiled from the data collected from the questionnaire.

Table-1 shows that 59.53% respondents were male and 40.46% respondents were female.

Table-2 Frequency of use of Social Networking Tools

Frequency	Respondents	Percentage
Once in a day	109	63
Many times in a day	133	76.87
Once in a Week	27	15
Twice in a Week	45	26.01
Once in a Month	11	6.35

Source: Table compiled from the data collected from the questionnaire.

Table-2 shows the frequency of use of SNTs. The table shows that 76.87% of the respondents use the SNTs many time in a day and 63% of the respondents use the SNTs once in a day whereas 26.01% respondents use the SNTs twice in a week.

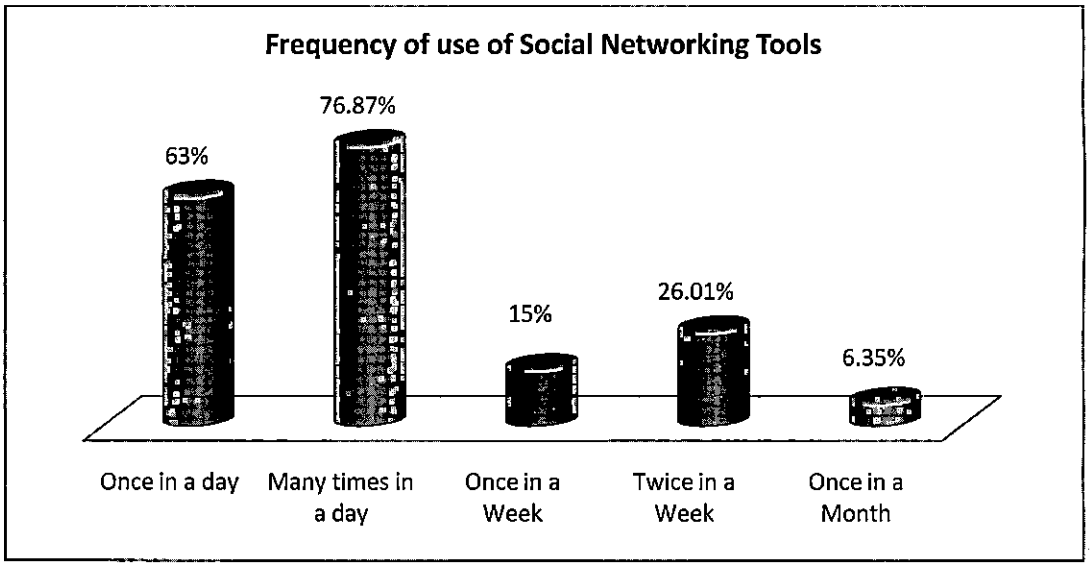


Table 3: Awareness of using SNTs

Awareness	Respondents	Percentage
Yes	173	100
No	0	0
Total	100	100

Source: Table compiled from the data collected from the questionnaire.

Table-3 shows that the awareness among the respondents about SNSs and it was resolved that all the respondents are well aware about SNSs and 173(100%) all the respondents.

Table 4: Use of Social Networking Tools

Social Networking Tools	Frequently	Sometime	Never
Facebook	93 (53.75%)	59 (34.10%)	21 (12.13%)
Twitter	67 (38.72%)	37 (21.38%)	69 (39.88%)
LinkedIn	78 (45.08%)	43 (24.85%)	52 (30.05%)

Google+	49 (28.32%)	34 (19.65%)	83 (47.97%)
Google Chat	37 (21.38%)	51 (29.47%)	85 (49.13%)
Whatsapp	141 (81.50%)	21 (12.13%)	11 (6.35%)
Blogs	35 (20.23%)	13 (7.51%)	125 (72.25%)
Wiki	27 (15.60%)	17 (9.82%)	129 (74.56%)
YouTube	107 (61.84%)	34 (19.65%)	32 (18.49%)
Flicker	33 (19.07%)	54 (31.21%)	86 (49.71%)
Picasa	44 (25.43%)	56 (32.36%)	73 (42.19%)
Instagram	83 (47.97%)	45 (26.01%)	45 (26.01%)
MySpac	20 (11.56%)	13 (7.51%)	140 (80.92%)
Delicious	34 (19.65%)	17 (9.82%)	122 (70.52%)
Orkut	67 (38.72%)	45 (26.01%)	61 (35.26%)

Source: Table compiled from the data collected from the questionnaire.

The use of Social Networking Sites by the respondents is shown in the **Table 4.** It may be seen from the table that the respondents are engaged in using of various kinds of the SNSs for full fill diverse interests. The 'Whatsapp', 'Facebook' and 'Youtube' are frequently preferred SNSs by the highest number of respondents representing mean value 81.50%, 53.75% and 61.84% respectively. The next most used SNSs are Instagram (47.97%), 'Twitter' (38.72%). It may be clearly shown in the table that the respondents used mostly the old as well as newly introduced SNSs.

Table-5 Purpose of using Social Networking Tools

Purpose	Respondents	Percentage
For academic purposes	88	50.86
Acquiring information	77	44.50
Communicate with family and friends	123	71.09
Collaborating with others	41	23.69
For entertainment	78	45.08
Personal information	102	58.95
Updating current information	53	30.63
Find useful information	57	32.94
Playing games	87	50.28
Keep up-to-date knowledge	67	38.72
Sharing experience	45	26.01

Source: Table compiled from the data collected from the questionnaire.

One of the significant research questions was to explore the purpose for which they are using SNTs. **Table 5** shows that 71.09% respondents mostly access the SNTs for communicate with family and friends followed by 58.95% of the respondents use the SNTs for personal information. 50.86% respondents use the SNTs for academic purpose whereas 38.72% of the respondents use the SNTs for keep-up-to knowledge.

Table 6 Time Spent on Use of SNTs

Time spent	Frequency	Percentage
Less than 1 hour	41	23.69
1-3 hours	78	45.08
3-5 hours	28	16.18
5-7 hours	11	6.35
Not regularly	15	8.67

Source: Table compiled from the data collected from the questionnaire.

Table-6 shows that 45.08% respondents use the SNTs for 1-3 hours. 23.69% respondents spend the time using SNTs for less than 1 hour whereas 16.18% respondents 3-5 hours. 8.67% of the respondents not regularly spend for using SNSs.

Table 7 Access Point to SNTs

Access Point	Respondents	Percentage
Library	65	37.57
Home	34	19.65
Computer centre	25	14.45
Hostel	121	69.94
Department	78	45.08

Source: Table compiled from the data collected from the questionnaire.

Table 7 shows that the access point to use Social Networking Sites by the respondents. It may be seen from the table that the majority of respondents 121(69.94%) access the SNSs at hostel. The second preferred access point is to use SNSs at department which represent 78(45.08%) followed by library 65(37.57%).

Table 8 Useful functions of SNTs

Functions	Respondents	Percentage
Friends searching	53	30.63
Chatting	93	53.75
Download applications	27	15.60
Photo / video sharing	131	75.72
Message post	57	32.94
Advertisement	32	18.49
Group searching / joining	21	12.13
Tagging	89	51.44

Source: Table compiled from the data collected from the questionnaire.

Table 8 shows that most useful functions preferred by the respondents in the Social Networking Sites (SNSs). It may be seen from the table that most of 75.72% respondents considered 'Photo/video sharing followed by 53.75% respondents 'Chatting' 57(32.94%), 'Message post' 53(30.63%), 'Friends searching'89(51%) are the most useful functions of SNSs. 'Tagging'.

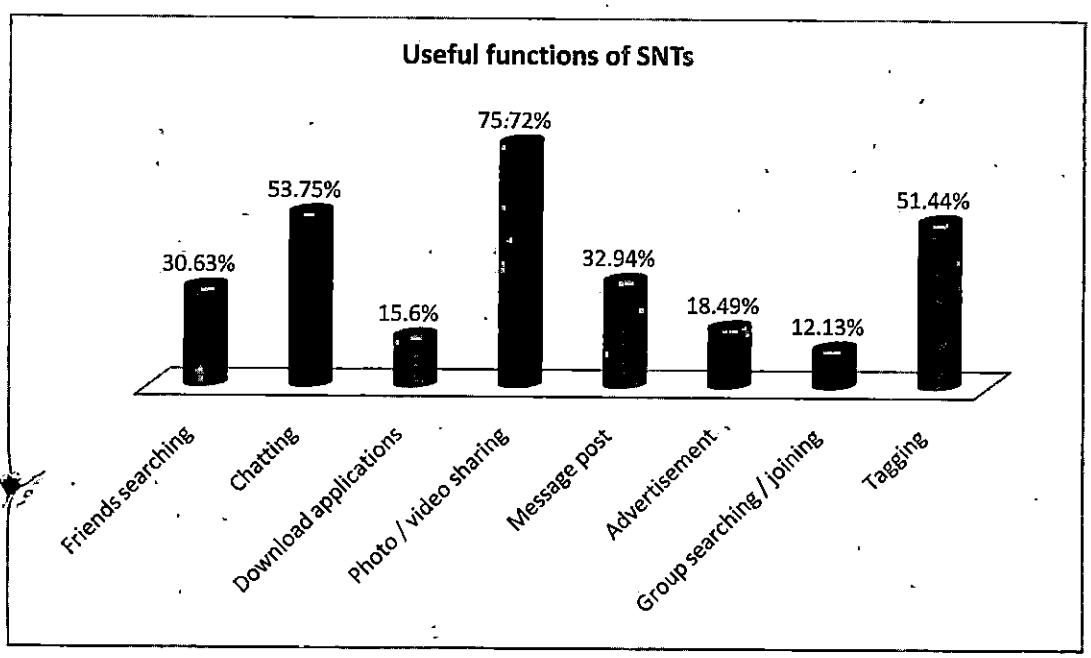


Table 9 Problems Faced While Accessing SNSs

Nature of Problems	Respondents	Percentage
Lack of Time	67	38.72
Lack of computer literacy	35	20.23
Inadequate Internet facility	21	12.13
Lack of security and privacy	43	24.85
Lack of academic/research information	51	29.47
Not very much useful for academic purpose	29	16.76

Source: Table compiled from the data collected from the questionnaire.

There may be many problems in using SNTs. It is clear from the table that, i.e. 67 (38.72%) users of department stated 'Lack of time' is the major problem to use SNTs. About 51 (29.47%) respondents t opine that 'lack of academic/research information' followed by, 43 (24.85%) respondents of reply 'Lack of security and privacy problems'. 35 (20.23%) of respondents opine 'Lack of computer literacy using SNTs, 29 (16.76%) of respondents mentioned 'Not very much useful for academic purpose use SNTs is another.

8. Major Findings

59.53% respondents were male and 40.46% respondents were female. 76.86% of the respondents use SNTs many times in a day followed by 63% once in a day. All of respondents 173 (100%) are aware of Social Networking Tools. 71.09% respondents are using the SNTs for communicate with family and friends purpose followed by 58.95% of the respondents for Personal information. 81.50% of the respondents use the Whatsapp frequently followed by 61.84% of the respondents use the Youtube. 53.75% of the respondents use Facebook frequently followed by 34.10% of the respondents sometime. 45.08% of respondents use the SNTs for 1-3 hours followed by 23.69% respondents spend the time using SNTs for less than 1 hour. 121(69.94%) of respondents access the SNSs at hostel and the second preferred access point is to use SNSs at department which represent 78(45.08%) followed by library 65(37.57%). The most common problem faced by the respondents 38.72% lack of time to use while accessing social networking tools followed by 29.47% of the respondents faced the problems lack of academic/ research information

9. Conclusion

Social media is essential for every individual in today's world of technology. People use it not only for information and interaction but also for entertainment. The uses of social networking tools are support their educational initiatives have received much attention. The present study is carried out to examine the awareness and use of Social Networking Sites (SNSs) by the students in the National Institute of Technology Kurukshetra. The findings of the study show that the majority of respondents are male. The results revealed that the most of the respondents use the social networking tools. The findings of this research reveal that majority of students adopt one or more social networking tools. The results of the survey reveal that all of the respondents were aware of the Social Networking Sites. Majority of 71.09% respondents used social networking tools for communicate with family and friends purpose. The 'Whatsapp', 'YouTube' and Facebook are most preferred SNSs by the highest number of respondents. Communicate with family and friends and personal information is the most useful function of the SNSs. The study revealed that most of the respondents used Whatsapp, facebook and Youtube.

References

1. Ahn, June. (2011). The Effect of Social Network Sites on Adolescents' Social and Academic Development: Current Theories and Controversies. *Journal of the American Society for Information Science and Technology,* 62(8), 1435–1445. Retrieved October, 3rd, 2017 from the Jstore Database
2. Hamade, S. (2012). Perception and Use of Social Networking Sites among University Students. *Research Gate , 6* (3), 54-67.
3. J., M., M., V., & G. M., G. (2016). Perception and Use of Social Networking Sites (SNSs) by the Postgraduate Students: A Study of University of Mysore. *International Journal of Library and Information Studies , 6* (2), 130-141.
4. Lalnunpuii, E., & Verma, M. K. (2016). Use of Social Networking Sites by Faculty Members and Students of NIT, Mizoram: A Case Study. *International Journal of Library and Information Studies , 6* (4), 225-236.
5. Lin, C.-N., & Wang, H.-Y. (2017). Understanding Users' Switching Intentions and Switching Behavior on Social Networking Sites. *Aslib Journal of Information Management , 69* (2), 201-214.
6. K.Y., L., & H.P., L. (2011). Why People Use Social Networking Sites: An Empirical Study Integrating network Externalities and Motivation Theory. *Computer in human behaviour , 2* (3), 1152-1161.

7. Mansour, E.A.H. (2015). The Use of Social Networking Sites (SNSs) by the Faculty Members of the School of Library & Information Science, PAAET, Kuwait. The Electronic Library, 33(3), 1-22.
8. Nadh, M. R. (2016). Use of Social Networking Tool by the Students of MNR Medical College, Sagareddy, Telangana State. *International Journal of Library and Information Studies*, *6* (3), 44-50.

Authors Profile



Mr. Anil Sharma has done his Masters and M.Phil in Library & Information Science from Kurukshetra University Kurukshetra. He has also done M.A. in Defence and Strategic Studies, Certificate Course in Urdu and Certificate Course in Computer science from Kurukshetra University Kurukshetra. He has qualified the UGC-NET exam in Library & Information Science. He has published articles in national and international conference proceedings. He has also participated and won many prizes in various cultural activities while studying in Kurukshetra University. He may be contacted at E-mail: anilkusmalu@gmail.com

Phone no. 9255878609

Embedded Librarianship: Is the Right Time to Have It!

Dr. Anil Kumar Dhiman

Information Scientist
Gurukul Kangri University
Haridwar -249 404 (Uttarakhand) India
Email: akvishvakarma@redfiffmail.com
and

Prof. Hemant Sharma

SOS in Library & Information Science
Jiwaji University, Gwalior (Madhya Pradesh) India
Email: shrhemant@yahoo.com

Abstract: The way of providing library services in traditional formats are changing because of the availability of the information round the clock through the use of information and communication technology. Today's librarians are required to come out of their rooms and library and are expected to provide services to the users at their desk. This has led to the concept of embedded librarianship. Embedded librarianship is also necessary because now a days, users are not coming in the libraries because most of the information is available online, thus, embedded librarianship may provide an opportunity to the librarians to survive in the library world.

This paper provides an insight into the concept of embedded librarianship along with its advantages and disadvantages and the use in current world of information technology.

keywords: Traditional Librarianship, Embedded Librarian, Information & Communication Technology and Embedded Librarianship.

1. Introduction

Earlier librarianship was to provide services based on in-house collection of the library but with the changing time, its facets were changed and services based on resource sharing, especially the inter-library loan were started to provide. Such services were the attempts to provide services to the users from the outside material of the library in which desired material for the users were arranged from other library though were provided by the parental library. But this can be said the starting of the embedded librarianship. However, real embedded librarianship started with the cheap and easy availability of the information and communication technology. Now, librarians have come out from the library and are providing

services to its users at their doorstep. They are now directly or indirectly involved with the faculty members and also with the students and are interacting in one or the other way to satisfy their needs.

Today, libraries are "expected to provide a space for social interaction, access to technology and a place where students and scholars are encouraged to come together, share ideas, and work collaboratively on projects" (Matava, Coffey and Kushkowski, 2010) through embedded librarianship. Thus, the key element of embedded librarianship is to move librarians out of the traditional library setting, whether physically or virtually, and into a new framework for providing library services. It shifts the emphasis from reactively answering research requests in a vacuum to developing a unique understanding of what customers need and delivering proactive results.

Thus, the concept of embedded librarianship is "founded on the premise of a purposeful interaction and partnership between academics and librarians who operate at the centre of the teaching and learning process, participating actively and holistically in the design and delivery of learning" (Martzoukou and Tramantza, 2014)..

2. What the Embedded Librarian / Librarianship Really Is?

The term "embedded librarianship" has been a prominent buzz word in the library profession within the past five [now twelve] years. It appears in journals and is interpreted at conferences, online discussions, and presentations (Drewes and Hoffman, 2010). However, the term "embedded librarianship" was coined by Dewey (2004) for the act of embedding oneself in the population being served, acting as to achieve a deeper level of integration within the group, which requires more direct and purposeful interaction than acting in parallel with them.

Kesselman and Watstein (2009) says "with the dramatic increase in electronic resources and technological capabilities, bringing the library and the librarian to the user, wherever they are—office, laboratory, home, or even on their mobile device—is at the forefront of what it means to be embedded. An embedded librarian allows the author to be an active presence in the course, interacting with faculty and communicating information with students.

Thus, placing a librarian who is integrated into an online course and who collaborates closely with faculty members to offer information literacy instruction to online students as well as reference and course research assistance, to support curriculum, course goals and the educational outcomes, within academic departments in embedded librarianship helps the librarian to "gain deeper insight

into what our customers are doing and how they will use the information we provide" (Shumaker, 2009). As such, the embedded roles of the librarians takes them out of the traditional library setting and places him/her in an "onsite" setting situation where the librarian coordinate and collaborate with researchers more closely (Carlson and Kneale, 2011).

While, embedded librarianship encompass "the work of librarians in a research institute or corporation whose offices are moved from a central library to their customer groups, so that they can work more closely with the members of those groups" (Shumaker and Talley, 2009).

Embedded librarianship paves the way to reveal the potentials of a librarian beyond traditional library functions to satisfy the increasing demand (Shumaker and Talley, 2010). Embedded librarianship is a distinctive innovation that moves the librarians out of libraries and creates a new model of library and information work. It emphasizes the importance of forming a strong working relationship between the librarian and a group or team of people who need the librarian's information expertise" (Shumaker, 2012). Co-management, co-funding, co-location and relationship can be said as the basic components that contribute to the definition of embedded librarianship. Figure 1 based on (Shumaker and Talley, 2010) shows them in relation to the embedded librarianship.

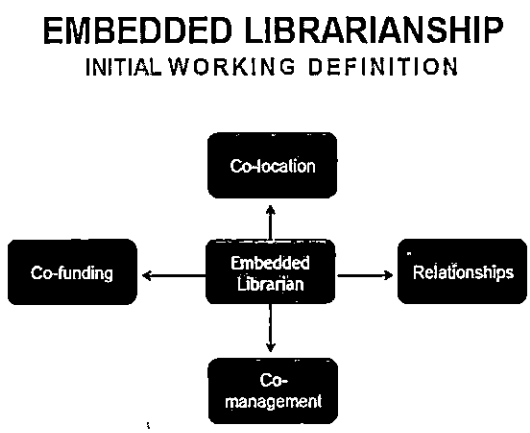


Figure 1: Embedded Librarianship

3. Factors of Embedded Librarianship

Shumaker and Tyler (2007) offer a redefinition of the variables that are associated with "embeddedness." The factors they associate with "embedded librarianship" include the following:

- Location: Where is your office? With other librarians, or with your customers?
- Funding: Who pays your salary and other costs? Do they come out of a general purpose library budget or from a budget that pays for other expenses of your customer group?
- Management and Supervision: Who writes your performance review? If you left the organization, who would interview and hire your replacement?
- Participation: Do you go to meetings of your customer group? Meetings of library staff?

However, two other factors – integration and collaboration being a part of a collaborative learning environment whether in a traditional or non-traditional setting, have been added for "embedded librarianship" by Kesselman and Watstein (2009). They mention that embedded librarians are, first and foremost, integrated into their settings, be they traditional or nontraditional. In academic settings, embedded librarians are in collaborative learning environments. They are on research teams. They are in academic departments. They are co-instructors in the classroom and in the online classroom. They play a major leadership role in pushing an academic co-creator model for scholarship and scholarly communication.

4. Attributes of Embedded Librarianship Services

Sharma, Kumar and Babbar (2014) have assigned following attributes to embedded librarianship.

4.1. User-oriented as an Alternative of Library-oriented

Embedded librarianship permits a more concentrated approach and negligible inhibition for librarians so as to engage themselves in a team/group or department work. Embedded librarians evolve highly focused, targeted, specialised information research results due to cogent and firm relationships. It leads to a more integrated and analytical approach as compared to what a library conventionally provides.

4.2. Physical Proximity

The prime element of embedded librarianship it is to move librarians out of the traditional library setting whether physically or virtually into a new framework for providing library services. It shifts the thrust from reactively responding to research queries to develop a unique comprehension of patrons' requirements and providing farsighted outcomes.

4.3. Miniature Group-centric

Embedded librarianship is more entertaining to deliver high level of service to a smaller group as compared to larger population. It means embedded librarianship provides a superficial standard of service to a larger group.

4.4. Experts rather than Generalist

Embedded librarians transform themselves as a chief source of information which makes them specialist and experts in this field. So they can use their specialization in definite forms that will have a direct and profound impinge on teaching, learning and research.

Librarians thus, are shifting from a supportive position to a collaborative role with their client by developing more cogent and solid relationship and tie up with those they deliver or serve.

4.5. Reliant on Universe of Knowledge and not only Library Skills

Library services in embedded librarianship are based on the whole universe of knowledge and not only on the knowledge about the library skills. So it may include the library skills as well as the tailor-made services to its users.

4.6. Aspiring for Further Study and Amalgamation rather than Delivery

Embedded library services are broader than the traditional library services which are based on the delivery of the content to its users.

4.7. Based on Trusted Guidance not Service Deliverance

Embedded librarians have to engage themselves to know the needs and interests of their customers. More often embedded librarian tend to learn while doing their job – having one to one interaction with the clients, participating in meeting and conferences and joining e-mail distribution lists.

Embedded librarians are to know – how they get embed themselves in a practice group because once they are well equipped with adequate knowledge or understanding of that are of law including practice specific resources and corresponding knowledge of usage of these resources to disseminate information on evolving issues and trends in that practice area afterwards embedded librarians can effectively open the dialogue with clients in order to determine their needs and eventually deliver results as per their needs.

5. Building Blocks of Embedded Librarianship

How the librarians may create a successful embedded librarianship initiative – for

that Riccio (2012) has listed following keys/blocks.

- Build strong relationships with the members of a specific information user group.
- Focus on understanding their work and information needs.
- Share their goals and actively contribute to the achievement of those goals.
- Become an integral and indispensable member of the group.

She adds that each step is important individually, but they are also interrelated and need to be addressed precisely in that order; skip one or leave it undeveloped, and embedded librarianship cannot flourish. However, the other step may be the "support from the organization's leadership" that is also a critical step as without support of organization, no one can survive and so is the case with embedded librarianship.

Therefore, embedding librarians should be seen as a strategy for strengthening and refocusing the library's presence within an organization and demonstrating librarians' added value.

6. Advantages of Embedded Librarianship

There are many advantages in using the embedded librarianship. Ralph (2012) has assigned following advantages to embedded librarianship:

- Accessibility is the most important among them, where the librarian had more contact with the students and provides more research information to them without requiring faculty members to give up more class time or the students to physically come to the library.
- The information can also be strategically placed to coincide with the times students are ready to receive that information: when they are actually working on their research. If students had questions, the message board may be available from within the course pages to seek help from the librarian.
- Effective use of knowledge management is another advantage.
- The hosting of discussions online is the advantages from students' side where they can be get benefited from the postings by and for other students.
- Librarian may be able to increase the visibility of library resources and services by making students aware of resources that the library had recently purchased such as LibGuides.
- Librarian may also be able to work with the students on specific re-

search-focused assignments thus ensuring customized resources for both students and the faculty. This service fostered collaboration between faulty and the librarian.

7. Challenges of Embedded Librarianship

While, embedded librarianship has various advantages but it has some drawback too. Ralph (2012) states that eestablishing clear expectations of the role of the embedded librarian is one of the major challenges. There were the times when students asked the librarian questions which were outside of his/her role. For example, the student may ask the librarian permission to change his/her topic, while another may send the draft of his/her literature review and asked if he/she was on the right track.

Besides, participation in the service is also very time-consuming. Because students conduct their research in the evenings and on the weekends, many questions came in at that time which may pose a significant hardship on the librarian.

8. Traditional versus Embedded Librarianship

Traditional librarianship is more than 100 years old now but embedded librarianship is in its starting phase. Embedded librarianship is about getting the librarian out from behind the desk, where they are passively waiting for a question, and having them actively go out into the community and ask, "What information do you need to accomplish your goals"? However, there exist some fundamental differences between traditional and embedded librarianship, which Shumakar (2012) have shown in figure 2.

- In traditional librarianship, queries are satisfied when they are asked, but in embedded librarianship, the services are provided in anticipation without waiting the queries rather keeping in view that the users may ask what queries, their answers are provided in advance. Librarians use their close working relationships to identify needs and find solutions.
- In traditional librarianship, patrons may get library help one by one at a time. But in case of embedded librarianship, librarians are much more effective because they work for the whole team.
- In traditional librarianship, a standardized and a bit bureaucratic service model is followed but embedded librarianship uses the strong working relationship formed through participation in a team to understand the team's

needs and address them in a customized way.

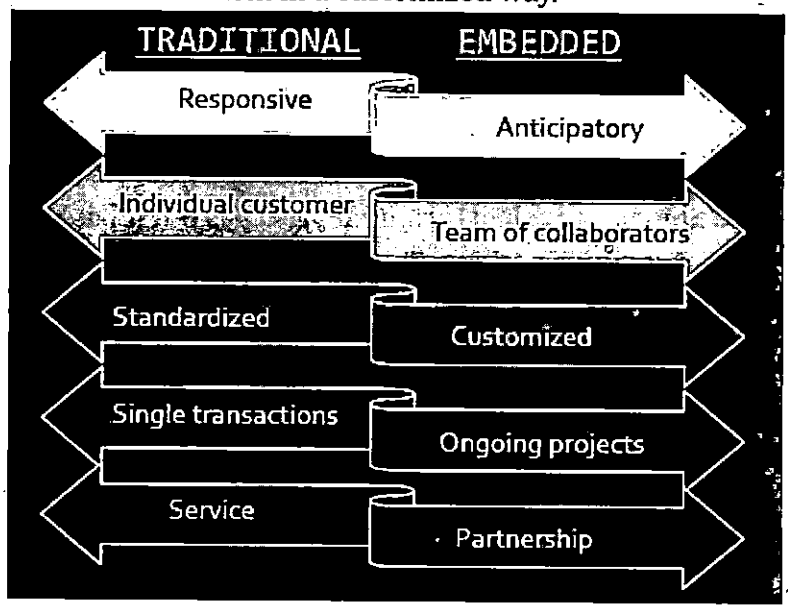


Figure 2: Differences between Traditional and Embedded Librarianship

- In traditional librarianship, transactions are the measure for reference work. However, embedded librarianship still uses transactions where documents are requested, instructional sessions are held, or documents are added to a shared virtual workspace but the emphasis shifts from the transaction to the project.
- In traditional librarianship, the service is given high value and librarianship may be having more service and provider of a service stands a bit apart where the librarian was supposed to only responsible for that service ethics but in embedded librarianship, librarians are responsible for more than that.

9. How can Embedded Librarianship be Implemented?

A variety of ways / models are available through which the embedded librarianship can be provided or implemented.

Markgraf (2004) describes the "lurking librarian" model, where the librarian scans discussion threads in the online classroom and provides assistance on the discussion board when an information need presents itself. This model does not require the student to actually ask a question of the librarian, but it does require the librarian to do a great deal of work in identifying points where intervention

would be beneficial.

Matthew and Schroeder (2006) describe other ways/models with that a librarian can provide assistance within the classroom. They state:

- Very common way is to create an "Ask a Librarian" discussion board. This virtual space gives the students a single space in which they can ask research-related questions. *Ask a Librarian* indicates to students that the instructor places value on the involvement of the librarian, which might make students more likely to ask questions but on the other hand, in a class where there is not a great deal of research every week, students may not have questions to ask.
- The librarian additionally can use the discussion board to provide instruction by addressing some of the issues students may encounter in their research. For example, in a history course where students are about to choose their research topics, the librarian may discuss the value of pre-research to determine if there is an appropriate amount of information available on their topics. This intervention may lead to questions from students about the appropriateness of their topics.
- Librarians can also provide instruction on the best resources to use for assignments, how to search specific databases, and much more. They can also avoid answering the same common questions from students over and over again, because everyone in the classroom will be able to view the answers. This practice is valuable for those students who may have the same questions, but do not feel comfortable asking the librarian.

But probably the biggest problem with any of the embedded librarian models is the amount of time required to provide the service. Librarians embedded in online classrooms may need to check each one at least once a day and answer questions (Farkas, 2008).

10. Conclusion

Thus, it is seen that embedded librarianship concerns with the new innovations of the librarians to satisfy their users' needs in present era of technology. Though, Sharma, Kumar and Babbar (2014) have considered embedded librarianship is not a new term rather a novel concept in the present era of librarianship, but there is seen an expanding trend in the recent past and the term "embedded librarianship"

is used to cover a range of initiatives and service concepts in the present world of librarianship. It is noted that earlier, the documents were available within the library premises but with the increasing availability of online access means that information resources are no longer confined within library walls. Thus, the librarians are required to rethink how their constituent's information needs are being met and embedded librarianship is one of them.

Embedded librarianship is very beneficial for the users because in the present environment the faculty members and the students start their search on the internet because they cannot access all the library resources as the resources may or may not be remotely accessed. But the faculty and students want their information at the right time, in the right form at the time of need, so with the help of embedded librarianship, the students and faculty members can increase their knowledge by using peer reviewed information and databases provided by the library (Becker, 2010). Thus, the future of embedded librarianship assures fresh prospects for the librarians to assimilate into the professional and academic lives of its users.

References

1. Becker, Bernd W. (2010). Embedded Librarianship: A Point-of-Need Service. Behavioral & Social Sciences Librarian, 29 (3): 237–40.
2. Carlson J. and Kneale R. (2011). Embedded Librarianship in the Research Context: Navigating New Waters. College & Research Libraries News, 72 (3): 167–170.
3. Drewes, K. and Hoffman, N. (2010). Academic Embedded Librarianship: An Introduction. Public Services Quarterly, 6: 75–82.
4. Dewey, Barbara I. (2004). The Embedded Librarian: Strategic Campus Collaborations. Resource Sharing & Information Networks, 17 (1): 5-17.
5. Farkas, Meredith G. (2008). Embedded Library, Embedded Librarian: Strategies for providing Reference Services in Online Courseware. In K. Sarah, M. Steiner and M. Leslie (Eds.): The Desk and Beyond: Next Generation Reference Services (pp.53-64). Association of College and Research Libraries, Chicago.
6. Kesselman, M. A. and Watstein, S. B. (2009). Creating Opportunities: Embedded Librarians. Journal of Library Administration, 49 (4): 383-400.
7. Markgraf, J. (2004). Librarian Participation in the Online Classroom. Internet Reference Services Quarterly, 9 (1-2): 5-19.

8. Martzoukou K. and Tramantza E. (2014) Virtual Embedded Librarianship for Information Literacy Teaching. In: S. Kurbanoğlu, S. Špiranec, E. Grassian, D. Mizrachi and R. Catts (Eds.): Information Literacy. Lifelong Learning and Digital Citizenship in the 21st Century - ECIL 2014. Communications in Computer and Information Science (pp.446-455). Springer, Cham.
9. Matava, T., Coffey, D. and Kushkowski, J.D. (2010). Beyond Library Walls: Embedded Librarians in Academic Departments. Public Services Quarterly, 6 (2–3): 165–173.
10. Matthew, V. and Schroeder, A. (2006). The Embedded Librarian Program. Educause Quarterly, 29 (4): 61-65.
11. Ralph, L. (2012). Using Education Informatics to improve Library Services to Doctoral Students: An Embedded Approach. International Journal of Doctoral Studies, 7 : 235-244.
12. Riccio, H.M. (2012) Embedded Librarianship: the Library as a Service, Not a Space. http://www.aallnet.org/mm/publications/products/aall-ilta-white-paper/embedded.pdf (accessed on 25.10.2017).
13. Sharma, P., Kumar, K. and Babbar, P. (2014). Embedded Librarianship: Librarian Faculty Collaboration. DESIDOC Journal of Library & Information Technology, 34 (6): 455-460.
14. Shumaker, D. (2009). Who let the Librarians Out? Embedded Librarianship and the Library Manager. Reference and User Services Quarterly, 48(3): 239-242, 257.
15. Shumaker, D. (2012). The Embedded Librarian: Innovative Strategies for Taking Knowledge Where It's Needed. Information Today, Medford (New Jersey).
16. Shumaker, D. and Talley, M. (2009). Models of Embedded Librarianship Final Report. Special Libraries Association Research Grant. www.hq.sla.org/pdfs/EmbeddedLibrarianshipFinalRptRev.pdf (accessed on 25.10.2017).
17. Shumaker, D. and Talley, M. (2010). Models of Embedded Librarianship: A Research Summary. Information Outlook. 14 (1): 26–35.
18. Shumaker, D. and Tyler, L. (2007). Embedded Library Services: An Initial Inquiry into Practices for their Development, Management, and Delivery. Special Libraries Association Annual Conference. Denver, CO. http://www.sla.org/pdfs/sla2007/ShumakerEmbeddedLibSvcs.pdf (accessed on 25.10.2017).

About the Authors



Dr. Anil Kumar Dhiman holds MA, MSc, MLIS, BEd, PGDCA, MBA (IT), MBA (HR) and PhD (Botany) & PhD (LIS). He is working as Information Scientist in Gurukul Kangri University, Haridwar. He has 205 papers/research papers (163 in Library Science and 42 in Botany) and 31 books (22 in LIS and 09 in Botany) to his credit. He has presented 60 papers in national and international seminars/conferences including Nepal during February–March 2011 and Pakistan in November 2015. He has also been the chairperson/ resource person in various seminars/conferences of national and international repute and member of organizing committees of various seminars/conferences. He is also associated with CSTT, MHRD, New Delhi as Library Science Expert. 22 M.Phil. and 04 candidates have been awarded PhD under his guidance and many others are working. He is life member of various associations in Botany as well as in Library & Information Science.



Dr. Hemant Sharma did M.Lib.I.Sc, Ph.D from Jiwaji University, Gwalior (M.P.). Presently he is working as Professor and Dean of Arts Faculty, E.C. Member & also Deputy Director (Distance Education), Jiwaji University Gwalior. 35 Candidates have completed their doctorate under his guidance. Currently a number of research students are working under his supervision. He has also participated in 39 national and international conferences. He has written 06 books and 74 articles in national and international conferences on various aspects of LIS to his credit. He is a life member of recognized professional associations including IATLIS and ILA.

ICT IMPACT ON JOB SATISFACTION AMONG FEMALE PROFESSIONALS WORKING IN CENTRAL UNIVERSITY LIBRARIES OF NORTH INDIA: A STUDY

Dr. Madhu Bala

Department of Library and Information Science
BBAU, (A Central University) Lucknow, (Uttar Pradesh) India
Email - madhubala.lib@gmail.com

Abstract: In 21st century, the rapid change in technology the role of library professionals has been changed due to technological changes in libraries. The present study has been designed with a view to investigate ICT impact on job satisfaction among female library professionals of Central University Libraries of North India. The main objective of this study to identify the Job Satisfaction towards their jobs, LIS profession, socio-personal relation and workplace conditions and also to explore the impact of Information Communication Technology on job satisfaction among female library professionals. In this study used a questionnaire as a tool to survey among 229 female library professionals, out of 229, 215 questionnaires were received and utilized for statical analysis. This study presents the status of Job Satisfaction among female Library & Information Science Professionals in north India.

Keywords: Job satisfaction, Information Communication Technology (ICT), LIS Profession.

1. INTRODUCTION:

Information Communication Technology is the fusion of some wonderful inventions during last 20th century. The term, "Information communication technology" (ICT) is defined as the use of computer-based technology and internet, to make information and communication services available to a wide range of users. In the ICT era, the role of library professionals has been transformed through a major transition and has evolved from a custodian to the present role of a knowledge manager meeting the ever evolving needs of the users. To fulfill the needs of the users, satisfaction with job is a necessity for every professional, because, job satisfaction is the most valuable asset for every employee. It is a framework to achieve one's goals with the development of an organization and personnel management. Job Satisfaction describes in term of expectations and attitudes towards their job. Job Satisfaction is associated with many important behaviors and outcomes for employees that have implications for organizations and personnel well being.

2. REVIEW OF LITERATURE:

Chamundeswari (2015) revealed that achievement was the most motivating factor and salary was least motivating aspect of job satisfaction. Dambawinna (2014) revealed that low level of job stress and high job performance leads to increase in job satisfaction level. Zijl (2012) suggested that the elasticity of working hours should be available for all in each organization. Schulze (2011) examined the inputs of job satisfaction that how they felt about administration, working atmosphere, reimbursement, promotion policy, job security, behavior of co-workers. Thornton (2010) examined that there is no significance relationship between job and promotion policy in academic libraries. This study suggested to create a healthy work environment which attract the library professionals for improve the social status of LIS professionals.

3. OBJECTIVES OF THE STUDY:

The objectives of the present study are:

- To study the status of female library professionals in the Central University Libraries of North India;
- To identify the Job Satisfaction level among female library professionals in the Central University Libraries of North India;
- To identify the problems faced by female library professionals in their career and the impact on their employment;
- To explore the impact of Information Communication Technology application on job satisfaction level of female library professionals;

4. RESEARCH METHODOLOGY:

In this study covered seven states of the North Zone of North India, i.e. Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttar Pradesh and Uttarakhand having 15 Central Universities Libraries of North India. In this study total 229 questionnaires were distributed to female library professionals, working as permanent employees. Out of which, 215 (93.88%) were received from the female library professionals. At some places interview method is also used. The responses received from University against questions in the questionnaire analyzed with the help of Statistical Package for Social Science (SPSS) software and presented in the form of tables and graphs by applied a simple percentage basis, mean and standard deviation and analyzed by using "T" test and "Karl Pearson Correlation Test".

5. ANALYSIS AND INTERPRETATION OF DATA:

In order to receive responses from female library professionals, 229 questionnaires were distributed to female library professionals, out of which 215 (93.88%) total respondents responded to the questionnaire.

Table: 1 University-wise Distribution and Responses of Questionnaires

S. No.	Name of Central Universities	Total no. of Female Library Professionals	Distribution of Questionnaires	Response (Percentage)
	Jamia Millia Islamia, New Delhi	27	27	24 (11.16%)
	University of Delhi, New Delhi	56	54	54 (25.11%)
	Jawaharlal Nehru University, New Delhi	30	30	28 (13.02%)
	Indira Gandhi National Open University, New Delhi	05	05	05 (2.32%)
	South Asian University, New Delhi	03	03	03 (1.39%)
	Central University of Haryana, Haryana	00	00	00 (0.00%)
	Central University of Himachal Pradesh, Himachal Pradesh	01	01	01 (0.46%)
	Central University of Jammu, Jammu & Kashmir	01	01	01 (0.46%)
	Central University of Kashmir, Jammu & Kashmir	00	00	00 (0.00%)
	Central University of Punjab, Punjab	01	01	01 (0.46%)
	Aligarh Muslim University, Aligarh, Uttar Pradesh	46	46	44 (20.46%)
	University of Allahabad, Allahabad, Uttar Pradesh	19	19	17 (7.96%)
	Banaras Hindu University, Varanasi, Uttar Pradesh	38	38	35 (16.27%)

	Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh	02	02	02 (0.93%)
	Hemvati Nandan Bahuguna Garhwal University, Uttarakhand	00	00	00 (0.00%)
Total		229	229	215 (93.88%)

The Table 1 indicates that the highest responses rate received 25.11% from University of Delhi and the lowest responses rate received 0.46% respondents of Central University of Himachal Pradesh, Central University of Jammu; Central University of Punjab respectively. On the basis of the Table 1, it is clear that there were no any female library professionals in Central University of Kashmir; Central University of Haryana and Hemwati Nandan Bahuguna University.

Table: 2 Demographic characteristics of respondents (N=215)

Demographic characteristics	Frequency	Percentage (%)
Age Group		
Below 30 Years	41	19.06%
31-36 Years	52	24.18%
36-40 Years	41	19.06%
41-45 Years	36	16.77%
> 46 Years	45	20.93%
Total	215	100 %
Marital status		
Married	187	87.00%
Unmarried	28	13.00%
Total	215	100 %
Job Title (Designation)		
Librarian	0	0.00%
Deputy Librarian	8	3.70%
Assistant Librarian	25	11.60%
Professional Assistant 44		20.50%
Semi Professional Assistant	82	38.20%
Total	215	100 %

Educational Qualification		
B.LISc.	17	8.00%
M.LISc.	133	62.0%
M.Phil	46	21.0%
Ph.D.	19	9.00%
Total	215	100 %
Working experience (in Years)		
1-3 Years	12	5.60%
4-7 Years	43	20.0%
8-10 Years	83	38.5%
11-15 Years	30	14.0%
> 15 Years	47	21.9%
1-3 Years	12	5.60%
Total	215	100 %

Thus, it is clear from the Table 2 that maximum 24.18% of the female professionals were in the age group of 31-36 years, followed by the a minimum 16.77% of the respondents in the age group of 41 to 45 years. On the basis of the analysis, results found that, most of Central University Libraries have numbers of library professionals who are below the age of 36 years. In order to identify the marital status of the female library professionals, results shows that, a majority of the respondents, 87% were married and a minimum 13% of the respondents were unmarried.

It is evident that most of the female library professionals i.e. 62.0% possess master's degree (M.LISc.) and a minimum 8.00% of the respondents have bachelor degree in Library and Information Science (B.LISc.). It is very important fact to note and mentioned here that only 9.00% of female library professionals have doctorate degree (Ph.D) in Library and Information Science. Thus, it is clear from the results, maximum 38.5% of the respondents have job experience of 8-10 years and a minimum 5.60% of the respondents have job experience less than 3 years. Thus, it can be said that a majority of female library professionals (38.20%) has the designation of Semi Professional Assistant; a minimum 3.70% of female library professionals have the designation of Deputy Librarian and 11.60% of the respondents have the designation of Assistant Librarian in their respective Central University Libraries of North India.

Table: 3 satisfactory levels of the respondents with their Job and LIS profession

Factors	Level of Satisfaction					Mean	Median	SD
	SA	A	DA	SD	NAND			
Are you satisfied with the present Job?	49 (22.80%)	121 (56.30%)	24 (11.20%)	11 (5.10%)	10 (4.70%)	1.79	1.00	1.122
Are you satisfied as LIS Professional?	44 (20.50%)	155 (72.10%)	8 (3.70%)	5 (2.30%)	3 (1.40%)	1.40	1.00	.791
Are you satisfied with present status of LIS Profession?	41 (19.10%)	104 (48.40%)	51 (23.70%)	13 (6.00%)	6 (2.80%)	1.96	2.00	1.104
Do you feel that LIS profession is a job oriented profession.	64 (29.80%)	115 (53.50%)	17 (7.90%)	0 (0.00%)	19 (8.80%)	1.81	1.00	1.174
If there is any other choice, than you will given preference Librarianship over other professions.	43 (20.00%)	137 (63.70%)	22 (10.20%)	2 (0.90%)	11 (5.20%)	1.64	1.00	1.054

The mean value of job satisfaction taken into five factors of job satisfaction is calculated. The factor, satisfaction with present job get highest rank, and preference this profession among other professions factor get the least rank. In such group Mean is 8.50 and Standard Deviation 2.62. On the basis of the above analysis, results found that a majority of the respondent were satisfied with their job as well as with LIS profession.

Table: 4 Relationship of Job Satisfaction with Various Factors of Job

S. No.	Variables	R	Significance
1.	Attitude towards LIS Profession	158*	.020
2.	Opportunities for Professional Development	.073	.289
3.	Interpersonal Relation	.189**	.005
4.	Promotion Policy	.143*	.037
5.	Working Environment	.198**	.004
6.	Socio-personal Relation	.278**	.000
7.	Workplace Conditions	.134*	.049

Overall Job Satisfaction		.472**	.000

*Correlation is significant at the 0.05 level (2-tailed) ** Correlation is significant at the 0.01 level (2-tailed)

The above Table 4 shows that there is no significance relationship between job satisfaction and opportunities for professional development because the 'r' value (.073) was found higher than the value 0.01 significance level. Similarly, others variables of job satisfaction i.e. 'r' value of interpersonal relationship is .189; r' value of working environment is .198; 'r' value of socio-personal relation is .278. All the above variables of job show a highly significant relationship with job satisfaction at 0.01 significance level. The difference between the various variables of the job and their overall job satisfaction calculated value P=.472 is highly significant at 0.01 significance level, which is greater than (P>0.01) tabulated value. On the basis of the calculate value, results indicate that the female library professionals working in Central Universities were satisfied with their job.

Table: 5 Impact of Information Communication Technology on Job Satisfaction

Factors	Yes		No		Total
	Respondents	Percentage	Respondents	Percentage	N=215
Do you have knowledge of Computer?	202	94.00%	13	06.00%	215
Do you have any professional degree in Computer Application?	68	31.60%	147	68.40%	215
Do you get training when new technology is introduced in your library and other places.	72	33.48%	143	66.52%	215

Have you done any training/ course in Library Automation?	83	38.61%	132	61.39%	215
Do you have knowledge about Library Software?	89	41.39%	126	58.61%	215
Do you have knowledge about Library Networking and Databases?	34	15.80%	181	84.20%	215
Do you use Digital Devices for study? 152		70.70%	63	29.30%	215
Do you have face any problem in operating Online Resources and Services?	44	20.50%	171	79.50%	215
Do you think that ICT affect the Job Satisfaction and Job Profile?	116	54.00%	99	46.00%	215
Are you satisfied with new Emerging Trend and Technology in Libraries?	135	62.80%	80	37.20%	215 (100%)

On the basis of the above results, it can be asserted that, the computer plays an important role in library services and management. But unfortunately 61.39% did not attended training in computer and accordingly most of the respondents have not any knowledge about Library Automation. Such persons cannot perform any task in the libraries and consequently will not have job satisfaction among employees. On the basis of the results it can be concluded that, in present era computer skills is must for every library professional to provide optimum level

services for users. With the help of computer and ICT tools, we can develop the awareness level among employees because it is essential to each and every employee.

Table: 6 Impact of ICT on Job Satisfaction in the present era of the Respondents

Factors	N	Mean	S.D	Std. Error Mean	't' Value	Df	Sig. (2-tailed) 'p'
Do you have knowledge of Computer?	215	1.06	.239	.016	65.087	214	.000
Do you have any professional degree in Computer Application?	215	1.68	.466	.22	52.967	214	.000
Do you get training when new technology is introduced in your library and other places.	215	1.19	.394	.027	44.334	214	.000
Have you done any training/course in Library Automation?	215	1.51	.501	.034	44.095	214	.000
Do you have knowledge about Library Software?	215	1.12	.327	.028	50.293	214	.000
Do you have knowledge about Library Networking and Databases?	215	1.16	.366	.025	46.433	214	.000
Do you use Digital Devices for study?	215	1.29	.456	.031	41.558	214	.000
Do you have face any problem in operating Online Resources and Services?	215	1.80	.404	.028	65.098	214	.000
Do you think that ICT affect the Job Satisfaction level?	215	1.46	.500	.034	42.864	214	.000
Are you satisfied with new Emerging Trend and Technology used by Libraries?	215	1.37	.484	.033	41.526	214	.000

The above Table 6 indicates that calculated value ($P<0.01$) is less than the

tabulated value. All the above variables of job show a highly significant relationship with the affect ICT on computer skills of the respondents at 0.01 significance level. Results also indicate that the computer skills and ICT affected the job satisfaction level of female library professionals.

6. VARIOUS PROBLEMS FACED BY FEMALE LIBRARY PROFESSIONALS:

On the basis of the analysis and findings, there are some issues and problems, which associated with female library professionals, are given below:

- Lack of female participation in seminars, workshop etc is the main cause of dissatisfaction. In some Universities, authorities are not being permitted to attend professional activities because only senior professionals get this chance, most of junior professional's shows dissatisfaction.
- Some of female library professionals unable to works with computers because some of them are not friendly with modern library.
- Lack of awareness about new emerging technologies and online library resources and services.
- Due to the dual responsibilities that is family and the job, they are suffered many psychological and sociological problem which is responsible for job dissatisfaction.

7. CONCLUSION:

ICT plays an important role in the development of the library services and management. To serve library services effectively, it is important that library staff should be trained in computer application. Therefore results shows that, 94% of the respondents have knowledge of computer as well as computerization of the library function and services. But regretfully more than half of the respondents have had not attended training/course in Library Automation. On the basis of the present study, results shows that job satisfaction of female library professionals is affected by the opportunities for professional development, interpersonal relationship and socio-personal relation. The findings of the study will enable library managers to know the areas of satisfaction and dissatisfaction among female library professionals. So through this study we can implement better strategy for the female employees which helpful for increasing productivity of the Central University libraries of North India.

REFERENCES:

1. Chamundeswari, S. (2015). Job Satisfaction and Performance of School Teachers. *International Jouranal of Academic Research in Busniess and Social Sciences*, 3 (5), 412-414. Retrieved 20 March 2014. fromhttp://www.hrmars.com/admin/pics/1859.pdf.
2. Dambawinna, K.P.K. (2014). Management Style and Job Satisfaction of Library Staff of University of Niigata. *Annual Research Journal of SLSAJ.* 12(4), 100-108. Retrieved 2, June 2014, fromhttp://slsaj.com/slsaj/Resjournal/Journal2012/Journal%202012-100-108.pdf.
3. Dixit, M. (2011). *Research Methodology.* Lucknow, New Royal Book Coporation.
4. Gokhale, N & Prasad, V. (2011). *Women in 21st Century.* New Delhi, Shri publisher & Distributer.
5. Howard, F. M. (2005). Influence Job Satisfaction of African American Librarians in Some Urban Public Library Systems in the United States, Emporia State University. Master Dissertation. Retrieved, 11 July 2014, from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.199.6017andrep=rep1andtype=pdf.
6. Schulze, S. (2011). The Job Satisfaction of Black Female Academics, Thesis. *University of South Africa,* Thesis. 754-769. Retrieved 11 July 2014, from https://www.infona.pl/resource/bwmeta1.element.elsevier
7. Thornton, J. K. (2010). African American Female Librarians: A Study of Job Satisfaction. *Journal of Library Administration,* 1(2), 141-164. Retrieved 2, June 2014, from http://dx.doi.org/10.1300/J111v33n01_10http://www.tandfonline.com/page.
8. Zijl., M. D. G. (2012). Job Satisfaction and Contingent Employment. *De Economist,* 160, 197–218. Retrieved 2,
9. June 2014, from http://download.springer.com/static/pdf/509/art%253A10.1007%252Fs10645-011-9180-7.pdf.

Impact of Social Media in College Libraries

Bibhash Kumar Mishra

Assistant librarian,
Kumaun University,
SSJ Campus, Almora Uttarakhand,
E-mail- bibhashkumarmishra@gmail.com

Dr. S. K. Pandey

University Librarian
Central University of Jharkhand
Ranchi
E-mail-skpanday1974@yahoo.co.in

Abstract: This paper aims to identify the different type of social media and their impact in college libraries for dissemination of information to the end users. The paper highlights the role of social media in college libraries with its advantage and disadvantage. It also describes the functions of various types of social media and how this media tools are helpful in disseminating the information among the user. "This paper provides a snapshot on the use of social networking in college libraries through a holistic review of available literature"(Singh & Mishra, 2013).

Keywords: Social media, Social networking, Social networking site, Web 2.0 application

1. Introduction

Today ICT and internet are considered most powerful communication media and educational tools which have made a great impact on academic library activities. "Advent of Internet technologies especially world wide web (WWW) facilitates to the people to use different social networking sites (SNS) for different purposes. These SNS tools and services enable users to connect, contribute, share and get feedbacks of their posts" (Kaushik, 2016). "In recent years, social networking system, which make use of web 2.0 technologies have received more attention in higher education as increasing number of younger people have made use of a public system such as Facebook and Myspace. Such systems coupled with other web 2.0 tools help individuals to readily create or find and then share knowledge" (Olatokun & Ilevbare, 2014). "Social networking sites are profile based websites that allow users to maintain social relationships by viewing, visiting, and sharing their lists of social connections with other members. Youngsters, especially students, are the avid users of these sites. Social networking sites enable students to get in touch with their friends, faculty members, and institutions and allow them

to connect with more friends. Students can use these sites to create and share their identities and profiles that may include personal information, pictures, blog entries, videos and music clips" (K & E, 2011). "Due to deeper impact and wide use of SNS by the users, the libraries are thinking seriously towards shifting their traditional services on SNS platform"(Kaushik, 2016). "The social networking sites are the new media for libraries to connect and interact with the new generation users. Now the users want information on their desk only. They are using social networking sites, especially Facebook. Libraries can use facebook as a useful tool to connect with its users. Librarian can use it to marketing its service and facilities" (Mishra, 2015).

2. Definition

"The term "social media" envisions a new type of media that is shared and participatory in nature, involving others in the information lifecycle of creation, organization, sharing, finding, and use. Internet-based social sites such as Facebook, Twitter, Tumblr, YouTube, Flickr, and Delicious provide a variety of digital spaces that house and support interactive and participatory information sharing, and offer new forms of collective and collaborative information creation" (Mon, 2015).

"A social networking service ***(also social networking sites***, **SNS** or **social media**) is an online platform which people use to build social networks or social relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections. The variety of stand-alone and built-in social networking services currently available online introduces challenges of definition; however, some common features exist" (Wikipedia, 2017).

"a website that is designed to help people communicate and share information, photographs, etc. with a group" (Cambridge Dictionary, 2017).

3. Objective of the study

The specific objectives of the present study are as following: (Jan, 2015)

- Enhancing the usage of library collections by promoting new and existing content.
- Establishing networking with other libraries to keep current content in the field.
- Advertising new events, services and information.

- Collecting user feedback regarding library services for evaluation purpose
- To provide possible implication of social media for marketing library and information products and services.
- Awareness about the use of social media.

4. Review of Literature

There have been a number of research studies on the use of social media.

Prerana Gautam (2012) in her study "Web 2.0 a new way of learning" found that web 2.0 provides an excellent platform for collaboration, which can be invaluable in solving problems and make better decisions. Olatokun & Ilevbare (2014) made a study on social networking websites and suggest that educators and institutions should promote the use of social networking websites by providing facilities that will encourage students to use the websites. Haneefa & Jasna (2014) in their study found that blogs, RSS, and social networking sites Facebook and twitter are the most prevalent web 2.0 applications in the newspapers. Gupta, Gautam, & Khare (2014) found that awareness and knowledge among library staff on social media applications is very poor. Rizwana (2015) in her study said that librarians are ready to introduce social media tools in their libraries for making communication faster and serving the queries of users' faster and easier way. Nigam & Singh (2016) in their study found that Facebook and whatsApp are most used Social Networking sites by the faculty members of Uttarakhand universities.

5. Methodology

In this paper author has adopted literature review method as main sources of data and personal observation about the different studies for finding and conclusion.

6. Types of Social Media

"Despite an ever-growing universe of social sites, there is as yet no firm consensus on how to classify or categorize all social media sites. Three categories of social media sites are generally agreed upon in common usage" (Mon, 2015).

Types and Examples of Social Media Sites

Social sites categories	Example
Social networking	Facebook, MySpace, Google+
Microblogging	Twitter, Tumblr
Social bookmarking/tagging	Delicious, Diigo
Blogging	Blogger, Wordpress

"Beyond these exist many other social media sites that don't fit exactly within these categories, such as Flickr and Instagram for sharing images, or YouTube and Vimeo for sharing videos" (Mon, 2015).

7. Features of Social Sites (Mon, 2015)

In selecting a social site, the library may first consider the particular features, or affordances, that the site offers which will shape the provision of services. Typical features and functionalities of social sites include:

- Profiles,
- Updates,
- Aggregation and feeds,
- Collection building,
- Finding and organizing,
- Joining and inviting,
- Sharing and accessing,
- Proximity,
- Direct interaction,
- Popularity,
- Incentives, and
- Crowdsourcing

Individual social sites may implement all or some of these typical features, and in selecting among social sites, a library may consider how the presence or absence of each of these features would affect the library's efforts to provide information and services to library users.

8. Social Media and Libraries

Social media is used by college libraries to provide library service and dissemination of research output. "Most of the library all around the globe is using some kind of social media in library for their user besides many library association are also on social media like Facebook, Twitter, Instagram, Snapchat, Pinterest, YouTube,Vimeo, Slideshare, Flickr... and so much more. Some of the libraries examples of Social Media Engagement are Americal Library Association, IFLA, few IIMs libraries, TERI, etc. Although in India trend is not so much as it should be but gradually libraries are adopting social media for better recognition and services to user" (Nishat, 2015).

9. Advantage of Using Social Media in libraries (Jan, 2015)

- Promotion of library services.
- Promotion of virtual library tour
- Enhancing user services by collecting user feedback.
- Increase library networking through data sharing and other connections.
- It increases engagement and interactions with library users.
- The promotion of library holdings via social media can help increase usage of content (Tanwar, 2015).
- Provide links to recommended internet resources.
- Social media helps user in locating library resources.
- It helps in promoting distance learning.

10. Barriers of Using Social Media Tools

- "Social media requires technological expertise on part of the library staff for customizing various library applications to provide access to various information resources" (Jan, 2015).
- Poor Power supply
- "Internet connectivity – Most institutions have limited bandwidth to support this practice. Poor connectivity can frustrate effective online participation" (Chauhan, 2013).
- Technological infrastructure and government restriction on the use of social media.
- Copyright Issue
- Lack of awareness
- "Privacy of personal information is becoming a major issue among user of social networking sites. It is easier to theft data of an individual from social

networking sites because users profile are in public domain and any one can see their profiles either on internet or on same network and misuse it" (Rizwana, 2015).

11. Impact of Social Media on College Libraries

Social media is seen as an important supporting tool for libraries for disseminating library information to the concern users. "Social media is mostly used by two groups of people-one is young people and other is students. As a result it attracted the attention of various librarians to accept social media as modern tool in libraries to reach students and faculties. Librarians are using this new media to outreach the students through various programmes and encouraging the students for usage of libraries (Holley, 2010)" (Rizwana, 2015).

"In graduate and post graduate level it could enhance students' communication globally. India is the third largest higher education system in the world. In several institutions, the faculty members utilise social media to contact their students regarding any project or assignment. This helps in enhancing their teaching-learning capabilities with minimal effort" (Nigam & Singh, 2016).

"Social media helps librarians to share information with patrons and students in the easiest way for digital library environment. They can create fan clubs, advertise special programmes and events, or highlight parts of the collection such as new items for a specific group" (Tanwar, 2015).

12. Conclusion:

"A new technology offering promising new outreach option for academic librarians is called social networking websites. A new platform is provided by them for reaching students beyond the conservative library building and websites by consenting students to access librarians" (Singh & Mishra, 2013). The main purpose of librarians is to make library resources available to their users. Through social media tools librarian will achieve the goal. "For centuries, social and technological changes have been affecting every profession. During last two decades rapid technological development has affected library services as well. Specifically, for the last five years, Web 2.0 technologies have significant impact on the higher education sector as well on the libraries all over world (12-13)" (Tyagi, 2012).

References:

1. Cambridge Dictionary. (2017). social networking site. Retrieved October 20, 2017, from http://dictionary.cambridge.org/dictionary/english/social-networking-site
2. Chauhan, M. (2013). Use of Social Media in Libraries. In *Redefining Libraries to Create Next Generation Libraries*. Gandhinagar. Retrieved from http://www.alibnet.org/public/bookofpaper/ppts/85.pdf
3. Gupta, R. K., Gautam, J. N., & Khare, V. P. (2014). Awareness and use of social media applications among library staff of power sector organizations. *Annals of Library and Information Studies, 61*(4), 320–331. Retrieved from http://nopr.niscair.res.in/handle/123456789/30339
4. Haneefa, M. K., & Jasna, K. (2014). Web 2.0 applications in online newspapers: A content analysis. *Annals of Library and Information Studies, 61*(4), 307–319. Retrieved from http://nopr.niscair.res.in/handle/123456789/30338
5. Holley, A. D. R. P. (2010). Social Networking and Academic Libraries: the possibilities and the Concerns. *New Library World, 111*(11–12), 468–479.
6. Jan, S. (2015). Role of Social Media in Library Services. In P. K. Bhattacharya, A. M. Khan, S. shuib Ahmad, & A. A. Jha (Eds.), *Application of Social Media in Innovative Knowledge Service* (pp. 96–103). New Delhi: Society for Information Research & Studies (SIRs).
7. K, M. H., & E, S. (2011). Perception and Use of Social Networking Sites by the Students of Calicut University. *DESIDOC Journal of Library & Information Technology, 31*(4), 295–301. Retrieved from http://publications.drdo.gov.in/ojs/index.php/djlit/article/view/1109/441
8. Kaushik, A. (2016). Use of Social Networking Sites Tools and Services by LIS Professionals for Libraries: A Survey. *DESIDOC Journal of Library & Information Technology, 36*(5), 284–290. http://doi.org/10.14429/djlit.36.5.10283
9. Mishra, B. K. (2015). Reaching Students with Facebook. In P. K. Bhattacharya, M. A. Khan, S. S. Ahmad, & A. A. Jha (Eds.), *Application of Social Media in Innovative Knowledge Service* (pp. 18–23). New Delhi.
10. Mon, L. (2015). *Social Media and Library Services*. MORGAN&CLAYPOOL PUBLISHERS . http://doi.org/10.2200/S00634ED1V01Y201503ICR040
11. Nigam, K., & Singh, M. P. (2016). Impact of Social Networking Sites in Scholarly Communication by State Universities of Uttrakhand. *DESIDOC Journal of Library & Information Technology, 36*(5), 291–301. http://doi.

org/10.14429/djlit.36.5.10085

12. Nishat. (2015). Libraries and Social Media Analytics. In P. K. Bhattacharya, M. A. Khan, S. S. Ahmad, & A. A. Jha (Eds.), *Application of Social Media in Innovative Knowledge Service* (pp. 75–80). New Delhi: Society for Information Research & Studies (SIRs).
13. Olatokun, W., & Ilevbare, G. (2014). Probing university students' adoption and utilization of social networking websites in Nigeria. *Annals of Library and Information Studies, 61*(1), 15–23. Retrieved from http://nopr.niscair.res.in/handle/123456789/27750
14. Rizwana. (2015). Social Networking Sites and its Impact on Libraries. In P. K. Bhattacharya, M. A. Khan, S. S. Ahmad, & A. A. Jha (Eds.), *Application of Social Media in Innovative Knowledge Service* (pp. 81–88). New Delhi: Society for Information Research & Studies (SIRs).
15. Singh, R. K., & Mishra, V. K. (2013). A New Arena of Academic libraries with Social Networking Sites. In M. A. Khan, A. A. Jha, S. S. Ahmad, & B. Tamal (Eds.), *managing information resources in digital environment* (pp. 205–207). New Delhi: Society for Information Research & Studies (SIRs).
16. Tanwar, Y. S. (2015). Social Networking in Teachers Training College Libraries: the possibilities and the concerns to promote Library Services. In P. K. Bhattacharya, M. A. Khan, S. S. Ahmad, & A. A. Jha (Eds.), *Application of Social Media in Innovative Knowledge Service* (pp. 112–119). New Delhi: Society for Information Research & Studies (SIRs).
17. Tyagi, S. (2012). Use of Web 2.0 Technology by Library Professionals: Study of Selected Engineering Colleges in Western Uttar Pradesh. *DESIDOC Journal of Library & Information Technology, 32*(5), 439–445. Retrieved from http://publications.drdo.gov.in/ojs/index.php/djlit/article/view/2655/1325
18. Wikipedia. (2017). Social networking service. Retrieved October 20, 2017, from https://en.wikipedia.org/wiki/Social_networking_service

Author's Profile



Mr. Bibhash Kumar Mishra is presently working as an Assistant Librarian in Kumaun University, SSJ Campus, Almora, Uttarakhand. He has more than 16 years of experience in LIS field. He holds M.L.I.Sc., M.Phil. and PGDLAN Degrees from Jiwaji University, Allagappa University and University of Hyderabad. He has many publications to his credit. He has participated and contributed research papers in several national and International Conferences. He is life member of ILA and UPLA. His areas of specialization are Library Automation and E-resources.

E-mail-bibhashkumarmishra@gmail.com



Dr. Sujit Kumar Pandey is presently working as University Librarian in Central University of Jharkhand, Ranchi. He has more than 16 years of experience in LIS field. He holds M.L.I.Sc., from University of Delhi and Ph.D. from Bundelkhand University, Jhansi. Before joining in Central University, Jharkhand he served as a University Librarian, Kumaun University, Nainital.He was the co-ordinator of Deptt. of Library & Inf. Sc. in Kumaun University, Nainital. He has many publications to his credit. He has participated and contributed research papers in several National and International Conferences. He is life member ofUttarakhand Library Association, IASLIC,Asian Library Association and ILA. His areas of specialization are Library Management, Library Automation and E-resources.

E-mail-skpanday1974@yahoo.co.in

Role of Librarian in Digital Era

Ritu Dhiman

Librarian
Bal Bharati Public School ritudhiman786@gmail.com

Reena Chauhan

Librarian Vaish Girls College Samalkha (Panipat),
bhavyapratap2004@gmail.com.

Abstract: New Standards has evolved in the field of library and information science in last two decades due to the impact of ICT and digitalization of library resources. This impact totally changes the earlier meaning of library from document Protector to knowledge disseminator. It has brought about a change in the concept of librarian, their collection and services. The library professionals are facing new challenges because of unprecedented explosion of information and its availability in different forms which are created by globalization, privatization and liberalization of every aspect of human life. In one way, it emergence with ICT and its application in generation communication and access of information in another way. To cope with these problems, the modern librarianship needs to be change in their philosophy and practices. They play the role of information provider rather than a custodian of document. There has been a paradigm modification in the way libraries used to manage as traditional story house to access provider. Therefore, the present digital environment has brought a lot of changes not only on the library and information services but also on the roles and expectations of the library professionals to satisfy their user's information demand.

Keywords: Digital, Information seeker, Librarian, Communication.

1. Introduction:

The world is changing day by day due to the development in the field of Information technology. The technological development has made tremendous impact on every profession including librarianship. The librarians also find themselves in a position of greatest challenge as the academic world expects them to be able to meet the ever growing demand of their users and they can do so successfully only when they are techno savvy and skilled in their field or trade.

In the digital age, the role of the librarians is changing radically, they can no longer be simply information providers or keeper of knowledge but they play the role of the guider, who helps the researcher in their research. Today's librarians or informational professional must be able to participate actively in the educational

process rather than gathering and disseminating information .They must insure that there is effective and efficient flow of information from the generators to users of information in the digital environment.

It is no longer possible for them to act without being continuously abreast of new methods and techniques and without being informed regularly about new trends and approaches. Furthermore, to make the service and development of information systems successful, librarians need to understand how people relate to information in every social situation. Librarian must also be able to relate their clientele to the information needed, independent of the location and which media the information can be found. Librarian must be able to educate users on the myriad of good and bad information on the internet. They are expected to help sieve the food information from the bad. They need to be managers of information.

Traditional V/S Technological Librarianship

Statement	Traditional Librarianship	Technological Librarianship
Regarding collection	Store house of documents. Only print material is used for disseminating the information	Change from paper to electronic resources because of ICT. Non book material should be processed for dissemination.
Collection development	Only books and journals collection to be developed.	Not only journals but they have to deal with all the new formats of e-resources.
Circulation	Simple charging and discharging methods were followed	On line and off line services are provided. e –resources should make available to the users where and when they are needed
Reference service	Users serve with traditional reference services in the library.	Users serve through internet or online facilities along with traditional reference service, but it's a time consuming process.

Referral service	Users serve with traditional referral services like CAS and SDI.	Readers can be guided to another library through web OPAC and serve with traditional service with in the library.
Promotion of library	Promotion of library can be done with the help of Sign board, Guide boards and Information Brochure.	Web Portal is the standard tool for promotion of library. Digital library services, electronic services can be provided through web portal.
Role of librarian	Custodian of reading material	Not only custodian, but act as a information scientist.

From all the above points it is seen that the Traditional libraries are the institutions that preserve and handle all the necessary historical documents in a manual form for the use of various activities of the nation. Earlier the libraries are the storehouse of documents and librarian was the custodian of the books. They only had done accessioning, organizing, retrieving and disseminating the information available in print form. Only books and journals collection to be developed. Simple charging and discharging system was followed.

2. Changing Role of Library Professional in Digital Age

In ancient times, there was no definite place that could be called a library. Librarians is all about sitting down in the midst of books and expecting people to come and read. If they do not come then, the librarian closed at the end of the day. This is the daily ritual. But the present technological era the professionals have to change themselves as the information profession is being changed.

Today the old role of librarian still exists. They have to play different roles in their work due to challenges faced by the LIS professionals. The modern librarian must be sound in the storage, retrieval and dissemination of information with the aid of ICT (Information Communication technology). This may be through computer, internet, E-mail, teaching aids, telephones including the global system of mobile telecommunications etc. Librarians can preserved and retrieved vital information easily when needed. Information is useful only when it is available on the appropriate form and language.

In modern times, Librarian should have knowledge and experience regarding

library Automation, Software, Networking and Digital library. The best use of any library depends upon the capability of librarian because he is the role model for the library staff. He is not only set an example for others to work but also to make significant contribution to adapting the technology. The librarian should adopt new skills and competencies to perform better role in the digital era. By using modern technologies all over the world libraries are now shifting their emphasis from traditional to multidimensional work force. Therefore, LIS professionals have to play versatile role in different areas of libraries and information centers to meet the expectations and needs of the present situation.

In short, we can describe changing role of Librarian in digital environment

3. Leadership Role and Managerial Skills

One primary role of librarians is to provide leadership. In this skill librarian is expertise in the design, development, and ethical management of knowledge-based on information systems in order to meet the information needs and obligations of the patrons. Managerial skills like planning, designing and implementing are essential for efficient workflow and production. Technological librarianship needs knowledge of total quality management as well as human resource management.

4. ICT Skills as Digital Information Provider

Information technology is developing day by day in all libraries & Information centers. Therefore library professionals must have enough skills to handle these new technological developments. He must have basic knowledge of handling computer along with LAN, WAN Networking and internet use. He should have enough skill to acquire knowledge of benefits and various schemes provided by library networks and consortia such as INFLIBNET, INDEST and DELNET.

5. An Evaluator of Digital Resources

Evaluating the right information at the right time is the most important factor in virtual library. Electronic sources of information there is also a distinction to be made between those sources of data which have been digitized for the speed and ease of transportation, and data which is of limited usefulness, volatile and fluid in nature. It provide links to websites on specific topics and lead patrons to those evaluated sites as starting point for retrieving related and relevant information.

6. Intermediary

Librarian is the person who functions between the user and the document. He play the role of intermediary between the library and the user. For this purpose he always is being in touch with the user for his/ her requirement. They research the information which is required by the user with in the library or outside the library and provide to the user on request. Librarians play the role of bridge between user and document. They connect the user with the right document as shown in the figure:-

International journal of Library science

User librarian interaction

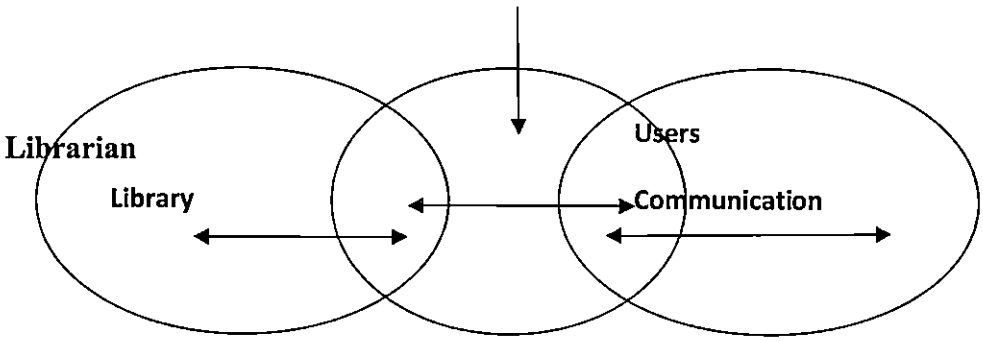


Figure 1: Position of librarian in library

7. Staff Development Programmes

Information retrieval is the most obvious skill a librarian demonstrates to the public. Adequately skilled staff should be recruited to meet the increased demands of the knowledge society. With a rapidly changing environment both within and outside the library, staff development programs are essential to the continued success of the organization.

8. Communication Skill

The Librarian is required to acquire communication skill for correspondence as well as oral communication. He should acquire competencies to function as a manager, organizer, leader, supervisors and Communication with different groups of people. Various sales agents for marketing of their products related to automation and services of libraries approach to librarians from all over India.

Therefore librarians must have competency to talk with them in English or Hindi. They can communicate with researchers, so their behavior is polite, friendly and helpful.

9. Consultant

Generally speaking, consultants do not provide clients with existing published information, rather they advise to solve problems. The library and information professional often acts as an adviser who recommends both the best sources of information and ways in which to access information. This is a consultancy role which deserves recognition, scattering of information is hindrance experienced by the users. These necessities the organization of information sources in a proper way that facilitates easy access to the users. However to be convincing, skills need to be developed to a high level in order to acheve the librarian as consultant role.

10. E-Resource Managers

Academic and research libraries have a major role in ensuring that they and their home institutions remain vital players in the changing terrain of information and education. Faculty may not be aware of copyright issues and do not know what material is electronically available or licensed by the library. Virtual learning systems can be connected to library systems, through the integration of library systems at the backend via the technology components, and through the close liaison and involvement of library staff in VLE development.

11. Educator

Librarian skills in the area of technology, educational design and teaching technique are curcial in their new educational role. Creating awareness of information has been the prome role of librarian in the present day. The librarian is an organization trains the user to perform their searches more effectively. However, no matter how sophisticated interfaces and search engines are the user still requires trainin or guidance in their usage. Thus Librarians plays an important as trainer or and educator.

12. Information Retrieval Skills

For providing various online services library professionals should be competent in using online database. He should have and ability to think in a logical and

analytical manner to be effective in searching the database. He should help users with comprehensive retrieval, bibliographic verification and SDI.

Skills, Knowledge, Competencies required for LIS Professional

The basic goal of library and information profession has always been to provide access to information to those who need it. The activities realizing this goal have evolved and transformed over the years. Librarian and information professional involved in information gathering, storage, retrieval and dissemination on one hand and on the other hand the computer specialist who supports the library and informational professionals in this endeavor. For successful implementations of digital library, it is essential that LIS professional are well trained and possess requisite knowledge and skills in this respect.

Knowledge & Skills required in LIS professional

- Knowledge of resources available in library or online.
- Technological facilities and resources
- Financial resources and Human resources

Competencies that required possessing in LIS professional

- Acceptance of Change
- Knowledge of user interaction with knowledge resources
- Provide quality service
- Be adoptive, flexible and resistant
- Be resourceful

Technical Knowledge required

- Operating System- Windows, UNIX, LINUX
- World processing, Graphics, Spread sheet and Presentations.
- General purpose programming, Networking.
- Web page Development and content management.
- Library software package, acquaintances with Digital Library tools.
- Information retrieval software for online, CD- Rom and Internet.

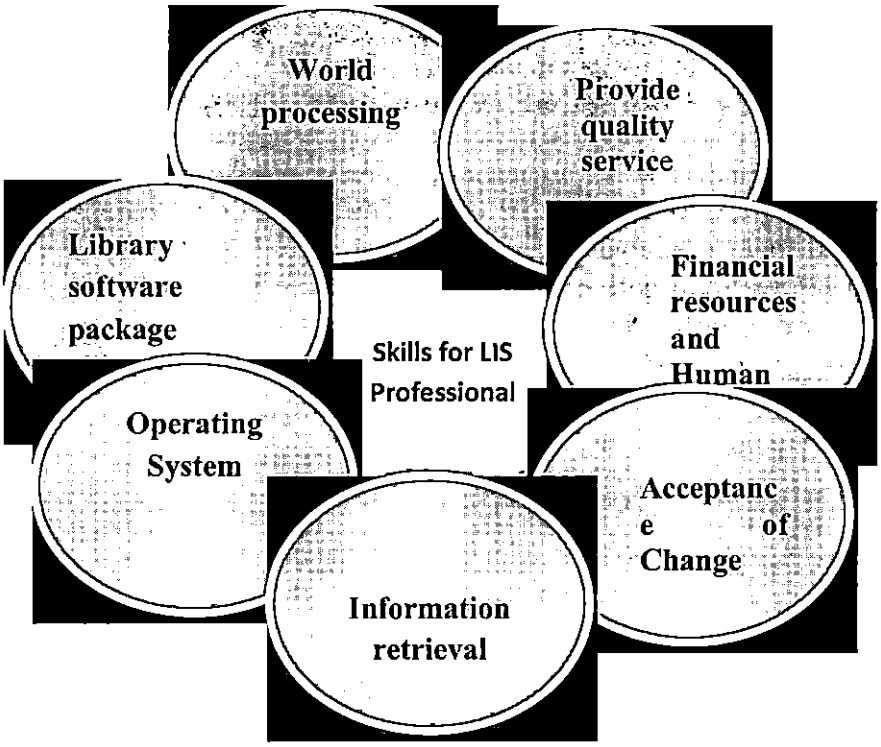


Figure 2: Skill required for LIS Professional

13. Challenges faced by LIs professional in Digital Environment

There is always a debate on the roles of libraries especially in the modern era. We have already discussed the various activities of LIS professionals in the light of present situation. But it should be kept in mind that professional and social acceptances of the profession depend upon the skills, attitudes and behaviors of the professional. The introduction of ICT and new digital technology was a major challenge to librarian. It was conclude that librarians should be ready to participate in the process of generating and distributing information and knowledge for quality of life and education for all. Today librarians have to manage knowledge and trained themselves to fit into the information age acting as knowledge manager. In this context, the following challenges faced by them.

- Sharing of Existing Knowledge
- Transferring the Information
- Library as a knowledge management centre

- Library as access providers
- Filtering the information

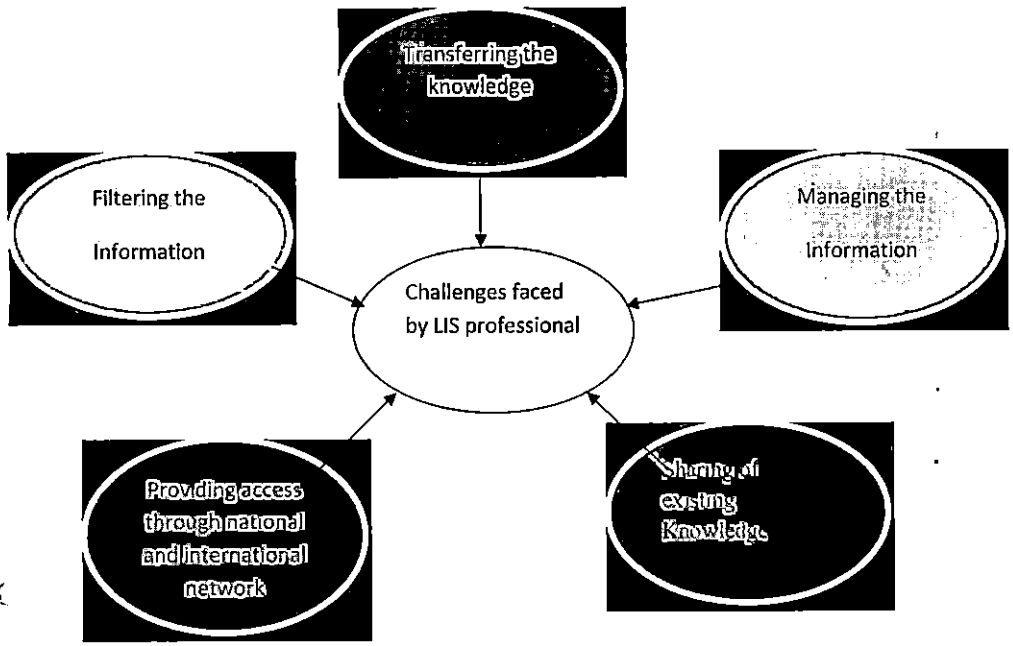


Figure 2: Challenges faced by LIS Professionals in Digital era

14. CONCLUSION

Librarians as professionals trained in acquisition, organization, retrieval, and dissemination of Information need to adapt and acquire new skills of digital age. Virtual library is not the ultimate answer to everyone's information needs. It is merely another step in a dynamic and evolutionary process. The fundamental goal of the library is to provide right information to the right user at the right time. So, it is necessary for a librarian to keep pace with the changing need and demand of users in present digital era. The traditional print library and traditional library services will not disappear. But, as librarians, we must accept and adapt to the introduction of new techniques and systems. We must recognize the enormous potential of the virtual library, address the issues involved in its creation, and take a leadership role in integrating these new systems and services into our libraries, for our own good and for the good of our users.

REFERENCES

1. Verma (Manoj Kumar): Changing Role of Library professional in Digital Environment: A Study
2. Khot (Namita): Changing role of library professionals in the ICT Environment (2014)
3. Biswas (Gautam) Changing Role of Librarians in Digital Era and need of Professional skills, efficiency & Competency
4. Sathe (Vivek S.): Role of College Librarian in Digital era.
5. Manisha D. (Maradiya): Changing Role of Librarian in the Digital era.
6. Obadare (Sunday Olurotimi): Changing role of Librarians in the Digital era.
7. Sharma (P.L.): Changing Role of Librarians in Digital Library Era and need of Professional skills, Efficiency and Competency.
8. Ansari (Mehtab Alam). Digital libraries: needs, technology and benefit. *ILA Bulletin.* Vol. 38(3); 2003; p22-26.
9. www.lib.monash.edu.au/vl/glossind.htm
10. www.webliminal.com/essentials/glossary.htm

Author Profile



Ms Ritu Dhiman is working as Librarian in Bal Bharati Public School, Ludhiana. She did her M.Lib. Sc. from Kurukshetra University Kurukshetra. and her M.A. Eng. From Karnataka Open University. She has participated in many National and International conferences. She is the life member of ILA and HLA. She has written many papers and articles, which were published in different magazines and journals. Her last paper on Digital Libraries: An Overview was published in Ila proceeding in 2017.



Reena Chauhan, Librarian Vaish Girls College Samalkha (Panipat)

Role Of Libraries For Sustainable Development Of Education

Kusum Lata Malik

Associate Professor (Library)
K.V.M.M. (P.G) College,
Swaroopnagar, Kanpur (UP)
Email: latamalikkusum@gmail.com

Abstract: Sustainability in education is a transforming learning process that equips students, teachers and education systems with the new knowledge and way of thinking. Libraries play an important role to achieve the goals and objectives of education. There is no mean of such education that not has rich collection of information resources in libraries. Libraries cannot isolate from education, it is essential component for sustainable development whether it is school, college or university or higher study institutions since libraries penetrate the whole structure of the education system. The secret of development of a nation either it is agricultural, trade, commerce, business, social or cultural move around the libraries because they are the chief sources of information. The paper discussed about the role of libraries in sustainable development of education. It showed the importance of libraries for sustainable development. The paper also highlighted the issues before libraries and made suggestions. Finally the paper emphasized that libraries play a predominant role in sustainable development of education.

Keywords: Library, Sustainable development and education etc.

1. Introduction:

Libraries play an important role to achieve the goals and objectives of education. Sustainability in education is a transforming learning process that equips students, teachers and education systems with the new knowledge and way of thinking. We need to carry out economic, prosperity and responsible citizenship while restoring the health of the living systems upon which our lives depends. Libraries now provide traditional as well as digital forms, bibliographical databases; full text documents. The well-equipped library is first essential necessity to run an effective and efficient education system. Without library cannot imagine a full fledge education system so it is not possible to isolate a library from education system. Its importance in nation building cannot be over emphasized. A major outcome of education is sustainable development. No nation can grow and developed beyond its education system. Education is the bedrock for growth, the key to development, the greatest investment,and asset and enhances sustainable development of a nation.The libraries have a great roletowards the realization of the broad goals of education. Sustainability is most often defined as meeting the need of the present without compromising the ability of future generation to meet their needs. There are three main pillars as economic, environment and social. These three pillars are informally referred to as people, planet and profits. The goal of which is to compulsion between environment sustainability, economic sustainability and socio-political sustainability. Education is a base for all round developmentof human

beings.

National knowledge commission (NKC) advocates importance of knowledge sharing platform for diffusion of subject-based knowledge and information to the society. Libraries will substantially help to India's dream of inclusive knowledge societies. Government of India passed an act *Right to Education (RTE) on 4th August 2009 and it came into existence on 1st April 2010.* To supplement orders of right to education,govt. of India initiated a flagship program named *SarvaShikshaAbhiyan (SSA)* for achievement of universalization of elementary education in making free and compulsory education to the children of 6-14 age groups.The RTE and SSA have made provision of no school without a library.Universalization of education essentially enhances social demand for universal access to information. These two acts have paved way for another social movement as every village a library or every village a knowledge resources center in a redefined form for fostering universal access to information and knowledge. NKC was established in 2005 thatconsidered a metamorphosis of Indian public library system through a newly formed institution called *National Mission on Libraries (NML)* The NML was considered as anintroductory act to regular body *National Commission on Libraries,* it make an attempt of rejuvenation and revitalization of public library system and facilities across breath and width of the country to make information and knowledge accessible to all citizens. Libraries need to make a paradigm shift from their present strategy of collection or acquisition of knowledge to the strategy of knowledge access. There is no mean of such education that not has rich collection of information resources in libraries. Information resources are the valuable national assets that are necessary for educational, cultural, individuals, social, and technological development. In twenty-first century, reliable, authentic and update information is required for enlightenment, decision-making and all sound development. Now information is available round the clock. Information/ information resources take part in all spheres of human life because cannot get effective and efficient education without libraries. Libraries cannot isolate from education, it is essential component for sustainable development whether it is school, college or university or higher study institutions since librariespenetrate the whole structure of the education system. Education is must for human development and its important part is of sustainable development. National development is not possible in absence of libraries or no nation can growprogress and developed without libraries. As education is a key to grow up, to develop, to invest, and to enhance a sustainable development of a country. Libraries also act a big part to achieve the objectives and purposes of education. Libraries satisfied the diversified information needs of its users. All libraries acquire, process, organize, store, retrieve and disseminate information to users in various formats to fulfill the goals/ purposes of studying, consulting and reading. The secret of development of a nation either it is agricultural, trade, commerce, business, social or cultural move around the libraries because they are the chief sources of information.

2. Terms used as Library, Education and Sustainable development of education:

A library is a collection of source of information that made accessible to readers for various purposes. It provides traditional and digital resources. It may be placed in physical space or present virtually or may be in both forms.

Education is the process of facilitating learning or the acquisition of knowledge, skills, values, beliefs and habits. It encompasses teaching and learning specific skills, imparting knowledge, positive judgment and well developed wisdom. It is an application of pedagogy, a body of theoretical and applied research related to teaching and learning.

Sustainable development consists of balancing local and global efforts to meet basic human needs without destroying or degrading the natural position or state. Sustainable development of education allows every human being to acquire the knowledge, skills, attitudes and values that necessary to shape a sustainable future.

3. Role of Libraries for Sustainable Development:

Education encircles teaching and learning of specific skills and also conducting of culture from generation to generation. Education developsindividually, socially, mentally and emotionally good human beings. Sustainable development provides the overall improvement and changes in society in relation to a person or to a society towards the political, social, religious and economic progress of a country. Sustainable development not only justifies the today's necessities but also days to come. Therefore, it can be say that sustainable development is a main key for a better life to every person now and for future. Libraries perform most important role is to provide information resources/ services to societies that would make greater ideas gathered from the sources. Now information services facilitates through web to update the knowledge and keep attention on current trends. Libraries also help to researchers'to discover existing knowledge; they also give previous research investigating results for following referencebyother researchers' fellows. Libraries have its databases in such ways so that researchers can search them without any delay. An individual may enhance his or her knowledge without any interference so libraries develop self-independent study habits among people. They give different mode of information as print/ digital. Libraries are the main center of cultural services because libraries share its resources with others and recognition of arts literature that is part of cultural heritage. Theydischarge educational role also because educational services is closely associated with information services. They support long-life education through information resources and provide supplementary text books, reference documents and digital resources. Libraries perform its educational role at formal and informal level. At formal level, they provide curriculum-oriented resources while at informal level, they provide however documents users want to study, users demand may be to improve their different skills like computer operation or photography techniques

etc. They also help to readers for maximum accessibility and usability of resources available there. Some libraries act as indispensable training and learning center for manpower development such as Institute of Chartered Accountant of India (ICA) to train chartered accountants. With the advent of ICT, libraries assist to identify identical personality to know each other and to promote the ideal of equal opportunities to everyone. Libraries preserved national heritage as well as current knowledge and help in sharing knowledge at national and international level. Libraries are big sourcing of access the information resources.

They foster and instigate self-education and educational growth. Libraries help to provide effective and qualitative education for teaching, learning, research and expansion of knowledge. Libraries assist in pursuing the goals and objectives of organizations. As libraries assist most essential role to pursuit goal and objective of an organization, so education would be deceptive without the libraries.

4. Issues before Libraries:

There are lots of challenging issues faced by library professionals and issues related to sustainability that limit effective services of the libraries. Some broad issues are mentioned here as:

Inadequate library professionals

Inadequate well equipped libraries

Inadequate ICT facilities

Interrupted power supply

Shortage of funds

Inadequate research and development

Insufficient information resources

Out of dated information resources

Space challenge

Shortage of furniture and other accessories

Maintenance challenges

Timing challenges

Lack of awareness to implement policies

Lack of government support

Lack of current resources for research and development purposes

User focused Policy and Strategies

Provision for refreshing the data

User charges, prices, framing guidelines for fixation of prices,

People's participation, Political and administrative will,

Capacity building to develop skilled man power,

Co-operative subscriptions, shared technology system, resource sharing, joint archives

Changing role of librarians and information professionals

Creation of basic infrastructural facilities i.e. ICT and web

Generate awareness among usersto be using technology.

The above issues that may be defied the role of libraries for sustainable development of education.

5. Suggestions:

In 2007 NKC setting up National Mission on Libraries a period of three years, which may lead to the formation of a permanent body National Commission on Libraries. Till date nothing has happened except holding few consultative meetings. Library associations should work conjointly with network of civil society groups and organizations in order to comprising an inclusive library infrastructure across the country including setting up an apex bodyNational Commission on Libraries. There should be developed a standardized ICT infrastructure for libraries. Now the time when planning of a shopping mall or a residential township or mega sports event there should be established a community library. The libraries are faced with serious crisis of establishing its identity. There is a need to escape libraries from any kind of damage from higher authority of organization. A library should introduce some regular library members as they are active stakeholder and know strengths and weaknesses of that particular library. There should be established user-oriented, user-based initiatives for bridging knowledge gaps, knowledge divide and digital divide. The library associations should take active part in development of libraries. Libraries are essential facilitator for lifelong learning and education. The author viewed several limitations of library to sustainable development as various social movements have strong leadership, outreach skills and strong negotiation skills in order to reach political agreement on social burning issues but our library

associations do not have a dedicated team or working group on library uplift issues for the betterment of library services. Voice of library associations are unheard at policy forum or planning commission, national and state level that leads to decrease the dreams of thousands of readers and library professionals. Library associations are becoming a voiceless face of the profession. This situation creates serious problem, they should take strong initiatives to bring attention of ministers and policymakers for strengthening libraries.

Libraries cannot separate from education because both are associated with each other. Since libraries affected the entire education system, the impact of libraries services cannot be beyond emphasized in education system. If users want to attain his or her goal than it is desire to attach with resource center services because libraries are built for educational purposes.

The technological advancement in the today's world is characteristic quality of library and education, thus any nation earning for sustainable development must accord education and a first priority to established well equipped libraries. Since no one can function without an intensive use of documents and information resources and libraries guarantee improved information services and national development. So, Libraries are essential for sustainable development of education.

6. Conclusion:

Education consider a high position in the development plan of any nation because it is an essential tool thattransform the intellect and social status of any society has to be go on by an educational revolution.More attention is required on libraries to achieve sustainable development of education. Libraries are core area for education sustainability. The author opined that there cannot gain effective and efficient education without libraries. Libraries cannot isolate from education system because it is essential component for sustainable development of education.

References:

1. http://en.m.wikipedia.org>Library accessed on 13/09/2017
2. http://en.m.wikipedia.org>wiki>educationaccessed on 13/09/2017
3. http:en.m.wikipedia.org/wiki/sustainability accessed on 13.09.2017
4. Chaudhary, Lovey (2017). Prograss in education sector since independence.Employment News, Weekly, v.62, no. 23. Retrieved fromwww.employmentnews.gov.in

5. Das, Anup Kumar (2010). Library advocacy in India in the light of education for sustainable development: perspectives of an emerging economy. Retrieved from http://eprints.rclis.org/14916/
6. Dasgupta, Kalpna (2007). The national knowledge commission and libraries: A vision for future. Retreivedfrom http://eprints.rclis.org/7462/1/National_Knowledge_Commission_Overview.pdf
7. https://nationalknowledgecommission.wordpress.com/category/recommendations/libraries/
8. http://knowledgecommissionarchive.nic.in/downloads/report2009/eng/report09.pdf http://knowledgecommissionarchive.nic.in/downloads/documents/wg_lib.pdf
9. Pujar, Shamprasad M. and Bansode, Sadanand Y. (2014). MOOCs and LIS education: A massive opportunity or challenge. Annals of Library and Information Studies. V.161: 74-78. Retrieved from http://op.niscair.res.in/index.php/ALIS/article/view/4511/102
10. Tyonum, Nicholas Mfangu and AmarachiEzeogu (2015).Library and education: panacea for sustainable development in Nigeria. Asian journal of Information Science and Technology, V.5, No.02. Retrieved from http://www.trp.org.in/issues/library-and-education-panacea-for-sustainable-development-in-nigeria

Role of Public Libraries in e-governance and community services: an overview with reference to state of the Rajasthan

Dr. Bhoop Singh

Assistant Professor- II (Library)
Bhartiya Skill Development University
Jaipur- Ajmer Highway, Jaipur, Rajasthan
Mail - bhoopsarodia@yahoo.co.in

Abstract: Present Era is an information era and information is available through various forms, channels and for matter such as internet, libraries, information center, clearing house, various information systems and services community resources, public libraries, Media etc. In Digital era, digital media has changed the horizon of the community information and e-governance is the interaction between the government and the public. Today public services are available in electronic media and public also approach the government through e-resources. Government also serves the public library is store house of knowledge and library professionals of the public library can help the public to get it done. The public library to connect the Government department through Internet connection and public can get General services. Governance is the inter relationship between legislature, executive, judiciary and media. It is interrelationship with nonprofit institutions and government. In this paper tried to identify several project of e-governance in plummeted by Government of India and Government of Rajasthan and shown the public library system in the state can play a complimentary role in the speed of knowledge of such program and help the community as a whole.

Keyword: - Public Libraries, e-governance, community services, Rajasthan, India

1. Introduction:

Today many of e-services has started by government for easily of their day to day work. Government also going to public through their e-projects and public field very easy to their government related work. All of them role of ICT is very important. ICT skills is necessary for e-services provider and one who are taking. Public libraries are also playing own role in the society like in education sector, particular in higher education. The academic libraries play a vital role in installing the information library skills among the students and faculty to enable them to find identity and across to information from unlimited store of www, using tools and various methods. So the academic libraries cannot read every nook and corner

of the society to the knowledge of application of ICT and it use and public libraries speed all over a societal environment can take up this taste of bridging the gap of digital divide.

2. E-governance

The e-governance is all about making a real impact on our daily lives. The internet led changes take place so fast, and so we are among the leading producers of applications of information technology (IT). We now have to become consumers IT. Therein lies the real benefit. We need to e-enable ourselves. Bringing the internet and governance together means bringing the greatest technology of our times to bear on the most fundamental concern of our society. Internet and government made for each other.

E-governance is a form of e-business in governance and refers to the process and structures needed to deliver electronic service to the public (citizen and business) collaborate with business partner and to conduct electronics transaction within an organizational entity. E-governance is defined as the application of electronic means in the interaction between government and citizens and government and businesses to simplify and improve democratic government and business aspects of governance.

3. E-governance in the Process of Bridging the Divide

According to Wikipedia NE-governance is referred to as e-government, also known as e-government, digital government, online government or connected government. E primarily is vested with digital interaction between a between a government and the citizens (G2C) .....

- The use of information and communication technologies, and particularly the internet, as a tool to achieve better government.
- The use of information and communication technologies in all facets of the operations of a government organization.
- The continuous optimization of service delivery, constituency participation and governance by transforming internal and external relationships through technology, the internet and new media.

4. Some of Information Literacy and E-Governance Programs in India:

E-government has been broadly defined as the use of Information and

Communication Technologies (ICTs) to improve the internal processes of government and the delivery of information and services to citizens of India.

- **Sarva Shiksha Abhiyan:** http://ssa.nic.in/) 2001-2010 India's Flagship Programme to achievement of Universal Elementary Education in India, Department of Elementary Education and Literacy, MHRD, Government of India, New Delhi.
- **National Literacy Mission:** (http://www.nlm.nic.in/) 5 May, 1988 National Literacy Mission Programme is launched by Govt. of India, the aims is to make 80 million adults in the age group of 15-35 over an eighty year period. It had two flagship programs Total Literacy and Post Literacy but in 30 Sep, 1999 combined as a single programme literacy campaigns and operation Restoration. .
- **TARA Akshar:** (http://taraakshar.org/) Tara Akshar Program has been running in 8 states in India for ever a decade. The initiative of development Group is an ICT based program which aims to promote functional literacy among women in 56 days through Akshar Gyan and Tara Ganit.
- **CBFL 'computer-based marking:** *(http://www.tataliteracy.com)* this possible is a remarkable initiative from functional literacy the Tata Group that has changed the lives of thousands of adults in different parts of India.
- **Portal of Government of India:** (htttp://india.gov.in) this section introduces you to the Government of India, its origin, and the governance process being followed in the Country By this link you we can search everything about India.
- **Rajeev Gandhi Computer Saksharta Mission:** (http://www.rgcsm.com.in/index1.html) the main function of the society is to provide higher technical education in nominal charges for every group of society of Urban & Rural areas all over India and get success in computer revolution which is the main dream of Indian Govt.

5. Some of Other Initiatives in India for developing the community information and e-governance service

E-Governance in India has reached at the "Transactional" stage and providing various services to citizens, business and government organization, offered by Central Government agencies and different State Government departments. National e-Governance plan (NeGP), initiated in 2006, and attempts to make

Communication Technologies (ICTs) to improve the internal processes of government and the delivery of information and services to citizens of India.

- **Sarva Shiksha Abhiyan:** http://ssa.nic.in/) 2001-2010 India's Flagship Programme to achievement of Universal Elementary Education in India, Department of Elementary Education and Literacy, MHRD, Government of India, New Delhi.
- **National Literacy Mission:** (http://www.nlm.nic.in/) 5 May, 1988 National Literacy Mission Programme is launched by Govt. of India, the aims is to make 80 million adults in the age group of 15-35 over an eighty year period. It had two flagship programs Total Literacy and Post Literacy but in 30 Sep, 1999 combined as a single programme literacy campaigns and operation Restoration..
- **TARA Akshar:** (http://taraakshar.org/) Tara Akshar Program has been running in 8 states in India for ever a decade. The initiative of development Group is an ICT based program which aims to promote functional literacy among women in 56 days through Akshar Gyan and Tara Ganit.
- **CBFL 'computer-based marking:** *(http://www.tataliteracy.com)* this possible is a remarkable initiative from functional literacy' the Tata Group that has changed the lives of thousands of adults in different parts of India.
- **Portal of Government of India:** (htttp://india.gov.in) this section introduces you to the Government of India, its origin, and the governance process being followed in the Country By this link you we can search everything about India.
- **Rajeev Gandhi Computer Saksharta Mission:** (http://www.rgcsm.com.in/index1.html) the main function of the society is to provide higher technical education in nominal charges for every group of society of Urban & Rural areas all over India and get success in computer revolution which is the main dream of Indian Govt.

5. Some of Other Initiatives in India for developing the community information and e-governance service

E-Governance in India has reached at the "Transactional" stage and providing various services to citizens, business and government organization, offered by Central Government agencies and different State Government departments. National e-Governance plan (NeGP), initiated in 2006, and attempts to make

all Government services accessible to the common man in his locality, through Common Services Centers (CSC) being set up across India.

- **Common Service Centre (CSC):** (http://www.csc.gov.in/) establishing 100000 +, common Services Centers in 600000+ villages of India by Department of Information Technology; Infrastructure Leasing 7 Financial Services Limited. It is one of the mission mode projects under the digital India Programme. CSC are the access points for delivery of essential public utility services, social welfare, healthcare, financial, education etc. apart from most of B2C service to citizen in rural and remote area of country. The services of G to C (Govt. to Citizen), B to C (to citizen, financial inclusion, education, agriculture, health services digitize India programme, etc. included in this programme.
- **E-Choupal:** (http://www.echoupal.com/): e-choupal is an initiative of ITC limited to link directly with rural farmers via internet for procurement of agricultural and agriculture product. There are 6100 e-choupals in operation in 40,000 villages in 10 states connecting with 4 million farmers.
- **Bhoomi:** (http://bhoomi.karnataka.gov.in/) this project is sponsored jointly by Revenue Department; national Informatics Centers of Karnataka and Ministry of Rural Development Government of India. Under this project "Bhoo Dhakilegala Malige".
- **Gyandoot:** (http://gyandot.nic.in/) Implemented in one District (Dhar district of Madhya Pradesh State) by Gyandoot Samiti & National Informatics Centers. It helps to learnt that due to lack of information regarding the current and prevailing the variety-wise current and prevailing rates of prominent cereal corps of the district like wheat, gram, soybean.
- **TARAhaat:** (http://www.tarahaat.com/) after the all-purpose Haat (meaning a village bazar), the impact of TARAhaat will be felt on several different levels: family, agriculture, and youth. For the family this venture provides a window to the world, enabling them to connect locally to international information, health, matrimonial, and mailing services.
- **Village Knowledge Centers (VKC):** 640,000 villages across India by the year 2007 National Alliance for Mission 2007, NGOs, by Department of Information Technology, Ministry of Panchayat Raj, Ministry of Agriculture, National Bank for Agriculture and Rural Development, etc. It serves as information dissemination center providing instant access to farmers to latest information/ knowledge available in the field of agriculture, starting

from crop production to marketing. The main target/beneficiaries of this project are economically disadvantaged sections of the society, self-help groups (SHGs).

- **The National e-governance Plan (NeGP): -** (http://www.mit.gov.in/content/national-e-governance-plan/) It is a holistic view of e-governance initiatives across the country, integrating them into a collective vision, a shared cause. Around this idea, a massive countrywide infrastructure reaching down to the remotest of villages is involving, and large-scale digitization of records is taking place to enable easy, reliable access over the internet.
- **Rural e-Seva:** (http://www.esevaonline.com/) 1 District (West Godavari district of Andhra Pradesh State) by West Godavari District Administration by this.
- **LOKMITRA:** Electronic service by the state government. This provides access to govt transactions via the internet (www.lokmitra.gove.in) and e-kiosks. It services available offers payment of electricity/ water bills, Applications for new electricity/ water connections, payment of house tax, Issue of birth/death certificate, Application for trade licenses and payment of relevant fees, Reservation of bus tickets, ATMs of ICICI Bank.
- In India various many other profit are running by help of NGO and PPP mode.

In Rajasthan, also many projects are running for community information services and e-governance services. Some of the followings....

E-Mitra: - (www.emitra.gov.in) E – Mitra or electronic mitra is a great e-governance initiative of government of Rajasthan which is being important in all 33 districts of the state using public private partnership (PPP) model for conveniences and transparency to citizens in availing various services of the government and Private sectors under e-Mitra/ e-Rajism.in/ e-tender/ e-payments/ e-product/ e-letter/ e-application/e-documents/ allowing is strong platform at their door steps using an e-platform. The services called community services are providing by CSC or common services center Kiosks in Rural area and e- Mitra Kiosks in urban area and also online via www.emitra.gov.in. The E-Mitra was initiative by the state government in 2005 on the client server based application. In 2010 its services were connected in based server and now it will be.

Presently by e-Mitra, Govt. of Rajasthan is providing approx. 419 services including agriculture, education, and health, administrative, Revenue etc. in rural and urban area.

Apnakhata.in: - (http://apnakhata.raj.nic.in) apna Khata services of the govt. of Rajasthan. The scheme has launched for the people to access and search land records within in various state's districts. The online services has further simplifies the process of looking information quickly and efficiently as compared to traditional means. The main aims of the government to provide customers with various online services related to their land record information. The services of the land to the farmers by the state government over the internet. The people can go to http://apnakhata.raj.nic.in and search and download all relevant information that need like Khasra map, Jamabandi, Nakal over the internet nearby their home.

E-Sampark:- (http://sampark.rajasthan.gov.in) This services is available on the sampark.rajasthan.gov.in. Rajasthan sampark is a very important way to contact Administration of Govt. of Rajasthan for any complaint, suggestion or problems of any citizen. In this site people can submit their problems through online without presented in the offices. Preside this all Panchayat Samiti and district level have facilities to enrolled problems free of cost. People can submit their problems by phone only 181. Rajasthan Sampark has been implemented through Dept. of IT and communication to ensure proper services to citizen through minimum grievances and transparency system. The project the way for a common man to reach the department of the state government for their queries and concerns, with the help of ICT interventions.

Rajasthan Sampark aims to wards providing citizens with a centralized platform while any citizens of the state can lodge his/ her grievances to the respective departments. Through Rajasthan Sampark Government of Rajasthan intends to achieve all important aspects of good governance via robust delivery system, transparency, communication, grievance Redressal and sensitivity towards citizens. (Sampark.rajasthan.gove.in/about us).

Sugam-Samadhan:- (www.sugam-samadhan.gov.in) Sugam Samadhan is a single point grievance redressal system of Govt. of Rajasthan. Where people can submit their grievances related to any department of Govt. of Rajasthan. Through this site people can contact all most all department.

E-bazaar – (https://ebazaar.rajasthan.gov.in) e-bazaar is an online store of the Rajasthan Government. Various categories like LED, Tublite, Khadi's Items, Energy efficient fans etc. available with subsidiary prices. It is hosted by department of Information Technology & Communication, Govt. of Rajasthan.

Egras -- (http://igrs.rajasthan.gov.in) - E- Gras is a very important e-services of Government of Rajasthan. GRAS stands for online Government Receipts Accounting Systems (E-Gras). E-Gras is an e-governance initiative of Government of Rajasthan

under mission mode project category and it is part of integrated financial management system. E-Gras facilitates collection of tax/ nontax revenue in both the mode online as well as manual. E-gras is a maintained by the Department of Finance, Govt. of Rajasthan. All types of Rajasthan state Government receipts using this website. Any user or citizen who want to deposit government receipt can use this facility.

E-Panjiyan – (www.epanjiyan.nic.in): - This is a new initiative of Government of Rajasthan for the people in the land purchase and sell. By this module, people can have registered by cyber café or their home and can access the site. In this site people can see all registered document on the stamp departments and can see the stamp duty on the concern services. By e-panjiyan. People can see the DLC rate of the property and can know their property valuation like their value of Land, value of construction, depreciation of contracted property. By this site people can do property valuation, self-valuation report, party detail, upload documented mode of payments, online timeslot booking etc.

E-Stamping – (http://igrs.rajasthan.gov.in) E-Stamping is also a computerize bases application and a secured way of paying non-judicial stamp duty to the Government. It is easy accessibility and faster processing, secure, cost saving and user friendly. E-stamping certificate have generated within minutes as a temper proof.

Beside this, Various other projects also providing good information services to the people of the state of the Rajasthan. Government to Government (GtoG) like chief Minister's Information System, Disaster management systems, Right to Information portal, digitization and e-cataloguing, Video Conferencing, Mobile Video Conferencing Vikas Darpan etc., Government to Business (GtoB) like Excise department, VAT System Automation, Mines and Geology Department, e-procurement, and Government to Citizen (GtoC) like arogya online, Transport Department, Municipal corporations, Mandi online, RSRTC etc. are the important steps by the Government of Rajasthan for the benefits of the people.

Public libraries in Rajasthan: Today public library are playing very important role in the development of information literacy and knowledge of the people. Public Library act has passed in 2006 and public libraries have found strong platform for their development from tehsil level to state level. Public Libraries are the University of People and it have capacity to dissemination of knowledge and awareness.

About their right as people's university public libraries besides their traditional roles have been playing different roles that include the literacy programs. Past time for adult education and forewent time for e-literacy and community services

providing the public libraries.

In Rajasthan, public library concept had continued since Rajshahi. At that time, Udaipur, Jaipur, Jodhpur, Khetari, Bharatpur, Kota and other main kingdoms followed the tradition of library. After establishment of Rajasthan state all those libraries were occupied by Govt. of Rajasthan and taking responsibilities to enhance its development. At era there are 44 full time public libraries were working under department of Secondary school education, but development of these library was not good. Then state govt. has decided to shift its responsibilities to Dept. of Language from 31 January, 2001 by Gazette notification are now onwards it called as Bhasa evam Pustkalya Vibhag. This department is doing well to develop public libraries with limited resources and staff and today those 44 libraries now extended to 273 public libraries

The public library infrastructure in Rajasthan consists of the following levels: -

- State central library (1)
- Divisional Public Libraries (7)
- Districts Public Libraries (33)
- Tehsil or Block level public Libraries
- Mahatma Gandhi Pustkalayas (on the each headquarter of Gram panchayat)
- Locations of Public Libraries in Rajasthan

S N	Name of Division	District	No. of Sub Division Public Libraries
1	Jaipur	Jaipur	13
		Sikar	8
		Dausa	5
		Alwar	14
2	Jodhpur	Jodhpur	9
		Barmer	8
		Jaisalmer	3
		Jalore	7
		Pali	10

		UdaiPur	10
		Rajsamand	7
		Chittodgarh	11
3	Udaipur	Pratapgath	5
		Banswada	7
		Dungar Pur	5
		Sirohi	5
		Ajmer	8
4	Ajmer	Bhilwada	11
		Nagaur	11
		Tonk	6
		Kota	5
5	Kota	Jhalawad	6
		Bundi	4
		Baran	7
		Bikaner	4
		Churu	7
6	Bikaner	Jhunjhunu	8
		Sri Ganganar	7
		Hanuman Garh	3
		Bharat Pur	9
7	Bharatpur	Karauli	5
		Sawai madhopur	5
		Dhol Pur	4

6. Role of Public Library in implementing e-governance:

The public libraries have been closely associated with the social cultural and educational functions, since their inception. As a social institution the public libraries have seen catering to the educational, recreations and cultural needs of the society and they are established by the peoples. It is a common belief that the public libraries are established only for the purpose of acquiring and lending books to the members of the community. But we should beyond this objectives of the public libraries. Public libraries can help the public libraries to see more visible and can enable themes in building their images as people centric organization.

In Rajasthan e-governance programme of the state can be give a wider public awareness jointly by the public libraries in association with various e-mitra or community information. Centers of Rajasthan Government of Rajasthan should make a plan as integral units of the public libraries at strategic administrative levels, such as in districts and cities.

The plan of action includes identification of nodal libraries, for instance libraries luring with in purview of Tehsil Level libraries or nodal libraries. The community information centers (CICs) or these centers can be open in the all senior secondary schools' libraries in every panchayat level. These CICs or Sr. Schools will also be located in each of these nodal libraries. A programme of action with the Block education officer of the Tehsil is central public library will a chalked out and the proposals for implementation of these programmes will be taken up for approval and implementation with district library authority. A separate budgetary providing and also the manpower for successful handling of the programme will be work out. The personal ear marketed for this task should be made to undergo tracing under each of the e-governance programme. This trail should be planned in continuous basis to augment the developments and the up gradating of the state of programme.

7. Conclusion and suggestions:

the remarkable growth of internet has made significant revolution in all the areas of science and technology. Internet has become the king of all media, by which we can across virtual information and can build a virtual library or a community information centers to provide timely quality services to the users. The public library professionals of this digital era are in this porting to change their role as arbitrary information scientists, information officer, librarian, knowledge manager, information provider and to meet the challenges of the internet.

In this paper has conceived a diversified and futuristic role of public libraries beyond the traditional services being offered by them since computes the impact of ICT has always been attributed towards the internal development of the public libraries. But in Rajasthan and entire world public libraries can foresee more constructive programme with the adoption of the developments of ICT for instance e-governance programmes of state and Central Governments. Tis can also be adopted by the all states through their respective public library system. So that the entire scheme of implementing of the proposal of this paper can get spread to the entire country.

1. Abbott. Andreo. (1998). Professional and the future of libraries shop, Li-

brary Trends Vol. 46 no. 3, pp, 430-445.

2. Apna Khata -- http://apnakhata.raj.nic.in accessed on 25/09/2017.
3. Bhakar, Rajkumar and Kaushik, Dinesh (2012); Public Library as a Community Knowledge Resource Center: A case survey of Dr Radha Krishan State Central Library, Jaipur in International Journal of Library and Information Systems, Vol 2, Issue 2 page 1-10.
4. E-Mitra: Effective Governance Better Citizens Services on http://emitra.gov.in accessed on 27/09/2017.
5. Krishnamurthy, C and Kumbar, BD (2008), Public Libraries in the knowledge Society: an over view of Karnataka Public Library Systems: In Koganuramuth, Muttaya. et al (Ed) in Knowledge for all Role of Libraries and Information Centers, Indian Library Association Proceedings, pp-615-620, ILA New Delhi.
6. Public Library http://en-wikipedia.org/wiki/public-library visited on 20/09/2017.
7. Rajasthan E-Governance IT & ITES Policy, 2015 available in http://emitra.gov.in accessed on 30/09/2017
8. Rajasthan Sampark Brochure available on http://sampark.rajasthan.gov.in/ accessed on 26/09/2017
9. Saxena, Archna, (2015); E-governance and information library: govt. Initiative in India in ILA International Conference on embedded librarian and Technological challenges of the digital age, ILA Proceedings, pp- 159-167.
10. Thomas, VK. (1997). Public library in India: Development and Finance, New Delhi : Vikas Public House, 1997.
11. Wiki about E-choupal visited on https://en.wikipedia.org/wiki/E-Choupal

Social Networking Sites Its Application In Libraries

G. Rajeshwar Kumar,

Assistant Professor,
Dept. of Library and Information Science
Chaitanya Post Graduate College (Autonomous)
Hanamkonda, Warangal-506001Telangana State
E.Mail: rajeshgunda@rediffmail.com

Abstract: Social media has the potential to facilitate much faster interaction between libraries and their clients. Social networking has become a fairly common way to keep in touch with friends and family, and it holds equal promise for building business and professional relationships.Libraries use social networking sites to fulfill a vary of objectives, with most focused on library usage,promotion of library services and resources. Different tools available on social networking sites to communicate with each other in a fast and cost-effective manner. This paper deals with the concept of social networking, Social Networking Sites, its benefits and application of SNS's to improve the academic library services.

Keywords: Social Media, Social Networking, Social Networking Sites (SNSs), Knowledge organization.

1. Introduction

Social network is a broad term used to represent the blogs it is online platform that focuses on building and reflecting of social relations among people who share interests and activities. Social networking technologies are intended to be easy to learn, easy to use and consequently have been used in a variety of contexts to improve the speed and effectively of communication.

Social networking refers to the collecting, sharing, representing, processing and dissemination of social information and other interests. This information is shared between friends, colleagues, family members and strangers. Social networking is enabled via social networking sites (SNSs) predominantly, but not exclusively, on the Internet. By using SNS Users can create their own profiles, make their own friends, participate in chat rooms and hold personal conversations.

Computing Dictionary defines (2011), Social networking site as any website designed to allow multiple users to publish content of themselves. The information may be on any subject and may be for consumption by friends, mates, employers, employees just to mention a few.

International University Libraries and business organizations are using

social networking sites to interact their clients pertaining to course work, getting information on any subject matter. Adelphi University Libraries, Carnegie Mellon University Libraries, Cambridge University Library, Yale Science Libraries and Norwegian University of Science and Technology Library are few examples for using social networking sites at international level.

Most of the SNS used for

- To announce the activities/programees of the library.
- To inform the new arrivals to the university community.
- To send the daily updates.
- Ask a Librarian

2. Some Examples of Social Networking Sits

- **Wikis.** (Wikipedia, Wikia) Interact by adding articles and editing existing articles.
- **Social Networking.** (Facebook, Hi5, Last.FM) Interact by adding friends, commenting on profiles, joining groups and having discussions.
- **Social Photo and Video Sharing.** (YouTube, Flickr) Interact by sharing photos or videos and commenting on user submissions.
- **Social Bookmaking.** (Del.icio.us, Blinklist, Simpy) Interact by tagging websites and searching through websites bookmarked by other people.
- **Social News.** (Digg, Propeller, Reddit) Interact by voting for articles and commenting on them.

3. Social Networking Sties its Application in Libraries:

Library professional can use Social Networking Sites in library and information services such as Sharing of Information, Knowledge Distribution and Knowledge Organization (Ansari 2015).

Sharing of Information: In this process librarian can keep constant touch and effective interaction with staff, patrons and faculty in online collaborative environment. The social networking tools that can be practiced by the library for the above mentioned purposes.

Examples: Facebook, MySpace, Ning, Blog, Meebo, LinkedIn and Twitter etc.

- **Facebook:** Facebook is most popular because it is librarian friendly. One of the best social media site frequented used by students and Group commu-

nication among clients can be possible in web 2.0. Librarians can interact with users to know their information need. Libraries try to link some of these specialized library applications to Facebook.

- Facebook jumped by 60 million monthly active users from 1.94 billion in March 2017 to 2.01 billion as of June 30, 2017.
- **MySpace:** MySpace is extremely popular social networking site is primary function is allowing people to make friends, talk online and share the e-resources.
- **Ning:** Library professionals can use this social networking tool to get connected with students, library associations and more. You can also use it to share information with many people at a time.
- **Blog:** By using a blog, librarians can periodically post messages; share information on a particular subject or issue,and allow users to contribute to content. You'll be able to disseminate information to lots of people at one time with the help of RSS.
- **Meebo:** Network and assist students on Meebo, no matter what IM client they use. Online chatting or virtual reference service in library can impacted by professionals to clients.
- **LinkedIn:** This social networking site for professionals is a great way to get library patrons connected with the people that can help them find information. Librarians can use this platform to render specialized services such as Selective Dissemination of Information (SDI).
- **Twitter:** it is a micro blogging application, to keep staff and clients to updated daily activities ie., frequently updated collections, new arrival, current content services of library. Library users can utilize this platform to type in short messages. By using twitter users also send Instant Messages on complaints or ask questions on a particular subject and get a feedback quickly.

Information Distribution: Information distribution is the major part and crucial area where library professionals should looks seriously while considering and designing library activities in digital era. User Satisfaction is first priority by providing right information at the right time in a right way.

Examples: YouTube, Flickr, TeacherTube, SecondLife, Slide Share, Wikipedia, Community Walk, PBwiki, Footnote, Digg.

- **YouTube:** Library video and e-learning tutorials, events and others video library services can be effectively promote and webcast through YouTube.

- **Flickr:** This image distribution tool is a great way to share new image collections. Library can share photo collection of workshops; conference and different programme that are orgamnised with in the campus. You can create image sets with metadata, as well as take advantage of the many plugins available for Flickr users. Flickr users can also help gather missing information about images.
- **TeacherTube:** Teacher Tube, which is a YouTube for teachers, presents an excellent opportunity for instructor-librarian collaboration. Instructors can guide students to helpful library resources, and vice versa.
- **Second Life:** On Second Life, you can create a virtual library with streamed media, discussions, classes, and more.
- **SlideShare:** Encourage faculty, staff, and students to share their slideshow presentations for the greater community to access on SlideShare. It's a great way to disseminate information among research community to the field of research and development (R&D)
- **Wikipedia:** Wikipedia is an online encyclopedia updated by users. You can use this tool to share your knowledge by editing, or simply point library patrons in the right direction. You can also host your library websites on wiki software like PBWiki.
- **Community Walk:** Community Walk offers a geographical way to interpret text and events. You can use it for instruction, such as showing someone where to find a book, or walk them through a historical and geographical timeline.
- **PBwiki:** PBwiki is the world's largest provider of hosted business and educational wikis. It encourages collaboration from students, a way to showcase work, and offers a central gathering point for information. PBwiki offers controlled access, so you can give some editing privileges, while others can only read.
- **Footnote:** On Footnote, you'll get access to original historical documents, and can update them with your own content and insights. You can even find personal anecdotes and experiences you won't find in reference books.
- **Digg:** Digg is a great way to find useful content that you wouldn't come across in traditional ways. Find stories here, then share them with others using Digg's blog function.

Knowledge Organization: Social networks tools can helps the Library professionals in for getting handy and Harvesting information from individual

users for improving library services etc. which can be accessible with the social networking technologies.

The following social networking tools can effectively use in library and information . centre for patrons as: aNobii, Del.icio.us, Netvibes, Connotea, LibraryThing and lib.rario.us etc.

- **aNobii:** Social networking site like aNobii helps book lovers to share reviews and recommendations. It also prepare due date alerts, lending, and discussions.
- **Del.icio.us:** With this social bookmarking tool, you can create a custom directory for library patrons. Teach them to search by your tags, and it will be easy to find useful Internet research links.
- **Netvibes:** In Netvibes' new Ginger beta, you can create a public page that can be viewed by anyone. You can use it to help guide patrons to helpful internet sources, news feeds, and more. It can be integrated with many of the tools mentioned here, like Flickr and library blogs.
- **Connotea:** Connotea is a great reference tool, allowing you to save and organize reference links and share them with others. They can be accessed from any computer and offer integration with lots of other tools.
- **LibraryThing:** This social cataloging network is great for librarians, and you can catalog along with Amazon, the Library of Congress, and more than 300 other libraries around the world. You'll get recommendations and easy tagging as well.

4. Benefits of Social Networking Sites in Libraries

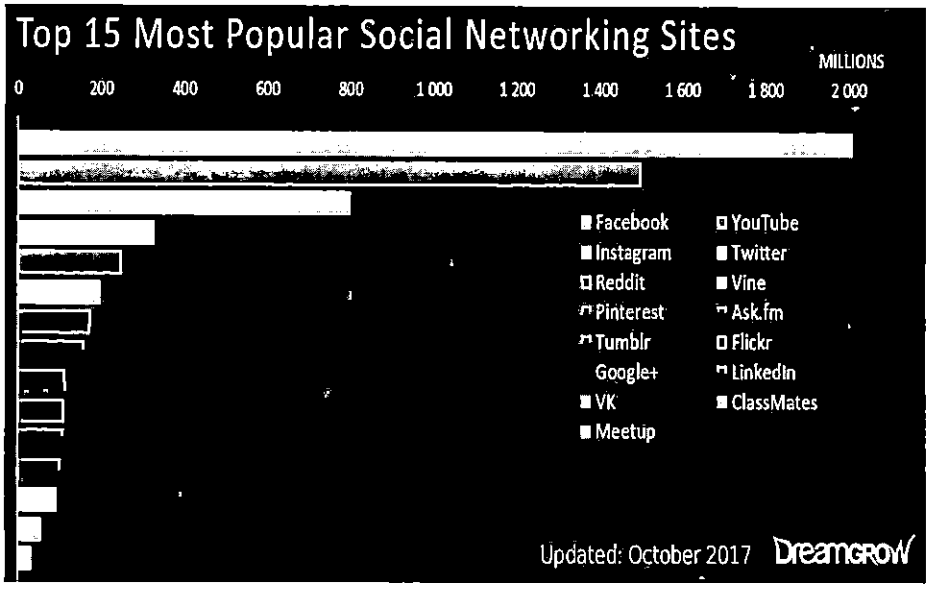
Social networking offers many benefits.

1. Real-Time Information Sharing is possible.
2. Social networking platforms may allow organizations to improve communication and productivity by disseminating information among different groups of employees in a more efficient manner.
3. Social networking sites built effective communication between Libraries, various departments and their clients.
4. Financially the costs of using social media are seeming to be low;
5. It will help Librarians and Libraries to keep pace with technologies and competitively with the developed World.(Ayiah and Kumah, 2011)

6. Social networking sites wall linked to a library's web page has the potential of reaping great results by attracting and serving Distance Education Students.
7. To reach a new audience of potential users.
8. To provide quick updates on library news to users.
9. To build discussion groups and collaborative work.
10. It helps gather feedback to enhance user services;
11. Marketing of library services and products.
12. To modernize the library image and e-reputation.
13. By using SNS spread the information alerts services effectively.
14. Social networking sites will lead future delivery of information to meet search queries.

5. Popular Social Networking Sites in the World

The graph showing the popular social networking sites in the world. Facebook is leading the pack with a huge margin in front of Youtube. Then there's another gap of similar size to Instagram on the third place.



Avaiable at : **https://www.dreamgrow.com/wp-content/uploads/2017/10/top-most-popular-social-networking-sites.jpg**

6. Conclusion

The exceptionality of this social networking site is to share information among users from highly personal to academic interests of the participants.SNS in library can be used productively but it has thread to user to using without circumspection. Libraries can proliferate to these networks for reaching out strategy to new generation users at their own space and time but it is also important that to provide quality services and interact with users efficiently. In fact many of us today use Facebook, Twitter and Youtube to promote our existing and upcoming businesses. A lot of social networking sites in India are getting into online world these days which helps to stay connected. Maximum number of LIS Professionals are connected to each other by Face book to share experiences, views and participated in creating awareness. Training programmes and awareness activities should be given to library users and library professionals prospectively about Social Networking applications to improve the library services efficiently.

References:

1. Aslam Ansari (2015),Use Of Social Networking Sites In Library and Information Centers, National Conference on Library Information Science and Information Technology for Education, pp.84-89.
2. Ayiah.EfuaMansa, and Kumah. Cynthia Henewaa, Social Networking: a tool to use for effective service delivery to clients by African Libraries. (http://conference.ifla.org/ifla77).pp. 1-15.
3. Hung, H-T and Yeun, S.C-Y. (2010) 'Educational use of social networking technology in higher education', Teaching in Higher Education, vol. 15, no. 6, pp 703–714
4. Social Networking (2010). Oxford English Dictionary online. Retrieved from http://www.dictionary.oed.com.
5. Subrahmanyam, K., Reich, S.M., Waechter, N, & Espinoza, G. (2008) Online and Offline social networks: use of social networking sits. Sites by emerging adults. Journal of applied development Psychology, Vol 29 (6), pp. 420-433.
6. Suri, Samiksa.(2013). "Use of Social Networking Sites in higher education". International Journal of Engineering and Technical Research, 1(8), 7-13.
7. https://www.dreamgrow.com/wp-content/uploads/2017/10/top-most-popular-social-networking-sites.jpg

The Role Of Social Networking Sites Collaboration Help In Research: An Exploratory Study Perception And Experiences Of Research Scholars Of Two Different State Universities Bundelkhand University And Jiwaji University: A Comparative Study

Sandeep Kumar

Teaching Assistant,Department of library and information science, Jhansi, Uttarpradesh

Dr. Rekha Krishna

Department of history HNGBU Central university, Srinagar Uttrakhand, historykumarirekha@gmail.com

Pramod Madural

PET,Kendriya vidhyalaya no.3 Jhansi Mahendra singh mir Department of library and information science, Jhansi ,uttarpradesh Bishtmahendra22@gmail.com

Abstract: Over a decade social networking sites have attracted a great deal of scholarly attention and have been use as an education tool. India is a place where in every 50 km the tradition culture`languages Changes, researcher also done this study on two different state university (bundelkhand university and jiwaji university) to know the research scholars perceptions are their perceptions differ on the aspect of social network according to their distance and for which purpose they use SNS. As we know researcher are the think tanks of university the research reveals that how and why researchers use social network sites and what are their perceptions towards SNS the research also investigate that majority 170(68%) of the research scholars agreed that SNS is a platform where we can make a quick discussions and communication with our professional colleagues at any time from anywhere which help us in our research.the investigation reveals that the greatest obstacles for the 126(51.4%)research scholars is they concern about their privacy.

Keywords: Research scholars ,social networking sites, perception ,Bundelkhand university,Jiwaji university

1. Introduction

Social network is basically a hiererchal structure are made of individual groups made which are connected by each other by different manner .social sites are prepared for different way in classify manner .social sites are prepared for

different purpose some are like business ,some are used for communication some for professional group sector,over a century human beings associated themselves to some form of social structure as they evolved across generation .all the human being make their social circle ,ideas ,communicate and gain information with some minded people and it is also a platform where they satisfying their different needs like sercity skills relations and literary work . we can also say that is,it is a network where people across the globe(national and international) can develop network with different organization and individuals for a specific purpose it creates a chain and link connected entities.in this research researcher study on how social networking sites are useful for researchers for their research because as we know it is the platform where different minds are connected .

2. An overview-

Bundelkhand univeraity(BU)

Bundelkhand University is a Public State University based in Jhansi, Uttar Pradesh, India. Founded in 1975, it has professional, technical and vocational study programmes along with facilities for research.The University is a member of Association of Indian Universities (AIU), International Association of Universities (IAU), Association of Commonwealth Universities (ACU). The University is accredited by the National Assessment and Accreditation Council (NAAC).8 faculties are exellently running in the university with several subjects research .cited from https://www.bujhansi.org/

3. Jiwaji university (JU)

Jiwaji University Gwalior came into existence on May 23, 1964, through M.P. Govt. Ordinance no. 15 of 1963. Late Dr. Sarvapalli Radhakrishnan, the then President of India, laid the foundation stone on 11th December 1964 at a sprawling campus of over 225 acres of land at Naulakha Parade ground. This was a generous contribution of Scindia family, in particular Kailashwasi Maharaja Shrimant Jiwaji Rao Scindia and late Rajmata Shrimati Vijayaraje Scindia. The institution was christened after the name of Kailashwasi Shrimant Jiwajirao Scindia as a standing memorial to his persona. The motto of the university is embedded in its logo Vidyaya Prapyate Tejah. With several subject research offered by the university for around the nation students.cited from Jiwaji University official site.

1. Importance of the study-the present study is important to make focus on

researchers of two different state universities research scholars to why and how the SNS is useful for their research , the research demonstrate what is the basic purpose to use SNS and how it is useful in their research field.

2. Methodology-the researcher prepare the questionnaire in very concise and structured way.to investigate the perceptions and experiences of research scholars of two different state universities bundelkhand university (uttarpraadesh) and Jiwaji university (Madhyapradesh).the study was conducted in discriptive and explorative manner during june -november 2016 .individuals are invited for filling the questionnaire .the link of the survey put in the central library of both the universities until 16 weeks so that scholars visit library and fill up the questionnaire all data saved by the survey before passing it on the researcher and also percentage method had been applied for stated objectives.

4. Research objectives-

- To know the role of social networking sites collaboration to help in research .
- To know the perception of research scholars over social networking sites
- To know which video sites they prefer for gathering information regarding research.
- To know how often they check their official group discussion forum.
- To determine the the preference of social networking sites
- To know the scholars perception about using social networking for learning
- To know the purpose of using social networking sites for their research.
- To know how social networking is best platform to connect with their professionals.
- To know how social networking site is helpful fo their research.
- To the obstacles faced by the researchers on operation social networking sites

5. Data Analysis

300 questionnaire were put in both university central library in which 135 and 125 return back from the respondents and which are fit for analysis to make a balance for comparison 125 and 125 are taken randomly for analysis from both the universities .In which highest number of male 97(77.7%) are from bundelkhand

university followed by jiwaji university 68(54.4%)where as in female 57(45.6%) are of JU and followed by 28(22%) are from BU.

Gender	Bundelkhand university	Jiwaji university
Male	97(77.6%)	68(54.4%)
Female	28(22%)	57(45.6%)
Total	165(66%)	85(34%)

Table 2. Please give me a reason why you spend time on social networking sites?

Reasons	Bundelkhand university	Jiwaji university	total
Find information regarding research	09(7.2%)	16(12.8%)	25(10%)
Stay up to date	20(16%)	06(4.8%)	26(10.5%)
Read post regarding research	10(8%)	22(17.6%)	32(12.8%)
Discussion regarding research	45(36%)	51(40.8%)	96(65.4%)
Blog writing regarding research	9(7.2%)	3(2.4%)	
Share post	32(25%)	27(21.6%)	59(42.8%)

Table 2. examines that why researcher scholars pf BU and JU spend Time on SNS .it is disclosed that 45(36%) researchers spend time in SNS for discussion regarding their research followed by 32(25%) scholars spends time in SNS to share post regarding research .it show that relevancy of information is decrease here where as in Jiwaji university 51(40.8%) research scholars spend time on SNS for discussion purpose regarding their research followed by 27(21.6%) share post and least percent 2(2.4%) for stay up to date.

Table 3. how often do you use social networking sites?

How Often use	Bundelkhand university	Jiwaji university	Total
Every day	98(78.4%)	105(84%)	203(81%)
Once in few days	15(12%)	16(12.8%)	31(12.5%)
Once in a week	08(6.4%)	04(3.2%)	12(4.8%)
More the one in a month	8(6.4%)	00(00%)	4(1.6%)

TABLE 3. reveals about frequency of using SNS in which 98(78.4%) researchers of bundelkhand university used SNS every day and 15(12%) od research scholars used once in a week followed by 04(3.2%) scholars used SNS more than once

in a month where as in jiwaji university the use of SNS (105(84%) everyday by research scholars followed by 16(12.8%) used once in few weeks.

Table.4 how many connections do you have in your social networking sites?

SNS membership	bundelkhand university	jiwaji university	total
facebook	88(70%)	112(89.8%)	200(80%)
twitter	12(0.64%)	25(20%)	37(14.6%)
google +	25(20%)	48(38.4%)	45(18%)
whatsapp	112(89.6%)	119(95.2%)	232(92.8%)
youtube	68(54.4%)	72(52.6%)	140(565%)

connections	bundelkhand university	jiwaji university	total
below 100	5(4%)	4(3.2%)	9(3.6%)
100-250	8(6.4%)	8(6.4%)	16(6.%)
251-500	56(44.8%)	72(57.6)	128(51.2%)
501-1000	29(23.2%)	9(7.2%)	38(15.2%)
above 1000	27(21.6)	32(25.6%)	59(23.6%)

Table 4. Investigates that 56(44.8%) BU scholars have 251-500 connections followed by 29(23.02%) have 501-1000 and only 4% have less than 100 connections where as in JU 72(57.6%) have 251-500 connection where as least connection 4(2%) have below 100.

Table 5.Are you the user of social networking sites?

university name	yes	no	total
bundelkhand university	117(93.6%)	08(6.4%)	240(96%)
jiwaji university	123(98.4%)	02(1.6%)	04(4%)

The table Revealed that out of 125 respondent of BU Schlors 117(93.6%) are the active users of social sites and there are scholars who does not use 8(1.6%) where as in JU 123(98.4%) use social sites and only 2(1.6%) scholars does not use the result shows ju scholars are the more active user than bu scholars .

Table.6 which social networking sites for learning you preferred?

Social networking sites	bundelkhand university	jiwaji university	total
research gate	35(28%)	48(38.4%)	83(33.2%)
academic.edu	40(32%)	08(6.4%)	48(19.2%)
google+	20(16%)	12(9.6%)	32(12.8%)
linkdIn	35(28%)	35(28%)	70(28%)
blogger	04(3.2%)	7(5.6%)	11(4.4%)

Table 6.exposed the that the most use social site is academic.edu with40(32%) followed by research gate 35(28%) and linkdIn (35(20%) and blogger has the least preferred site by the bu scholars where as in JU scholars preferred research gate 48(38.4%) have the highest % followed by linkdIN 35(28%) And blogger have with the least 7(5.65) by JU the similarity in both university is that the balance researcher used linkdIN70(28%)..

Table 7.basic purpose of using social networking sites?

purpose	bu scholars	ju scholars	total
downloading	25(14.2%)	8(6.4%)	32(12.8%)
communication	25(20%)	40(32%)	65(26%)
chatting	8(3.2%)	20(16%)	56(22.4%)
published articles	36(28.8%)	25(20%)	33(13.2%)
posting photo	32(25.6%)	32(25.6%)	25.6%)

Table 7.exposed the basic purpose of using SNS by the research scholars of BU and JU in which bu scholars 36(28%) used SNS with the purpose to published article followed by posting photo 32(25.6%) ,followed by 25(20%) communication and the least using purpose is chatting 8(2.4%) where as in JU 40(32%) scholars have the purpose of using SNS is for communication followed by 40(32%) who used for published articles ,in comparison the most common in both the university scholars is that they focus on published articles 33(13.2%)

Table. 8 Usage of video sharing sites for gathering knowledge?

video sharing sites	bundelkhand university	jiwaji university	total
vimeo	00(00%)	oo(00%)	00(00%)
youtube	25(20%)	38(30.4%)	63(25.29%)
teacher tube	62(49.6%)	53(42.4%)	115(46%)
edu tube	32(25.6%)	02(1.6%)	34(13.6%)
google medias	05(4%)	11(8.8%)	05(2%)
daily motion	1(0.8%)	2(1.6%)	3

Table 8. reveals the use of video sites for gathering knowledge where BU scholars majority

use teacher tube 62(49.6%) followed by edutube 32(25.6%) followed by youtube 20% where as in JU 53(42.4%) use teacher tube followed by 38(30.4%) used youtube and only 2(1.6%) use edutube in comparison where we saw the most common is teacher tube 115(46%) the both the university scholars use this for video sharing sites.

Table 9.promotion of authentic learning by using social networking sites?

Promotion of authentic learning	bundelkhand university	jiwaji university	Total
encourage authentic learning	00(00%)	3(2.4%)	3(1.2%)
promotion team work	0	01(0.8%)	1(0.4%)
ensuring access to relevant information by lecturers /tutors	32(25.6%)	27(21.6%)	59(23.6%)
interaction and connections with relevant professionals	71(56.8%)	87(69.6%)	158(63.2%)
an empowered user content generation	22(17.6%)	7(5.6%)	29(11.6%)

Table 9.shows the perception about learning by using SNS in which with the 71(56.8%) scholars think s that interaction and connection with relevant professionals followed by SNS because they know its ensuring access to relevant information by lectures /tutors and least think that it empowered user content generation where as in JU majority goes with87(69.6%) increase interaction connection with relevant professionals followed by 27(21.6%) to ensure access to relevant to information by lectures and tutors the common perception 6of both the university scholars is ensuring access to relevant information by lectures and tutors .

TABLE.10 Are you member of any group/community of your collage/university?

MEMBER GROUP/ COMMUNITY	BUNDELKHAND UNIVERSITY	JIWAJI UNIVERSITY	TOTAL
Yes,unofficial students group	23(18.4%)	19(15.2%)	42(19.2%)
yes unofficial collage/ university group	00(00%)	5(4%)	5(2%)

yes alumni section	102(81.6%)	98(78.4%)	78.4(80%)
no	0	3(2.4%)	3(1.2%)
I don't know my collage /university has profile	0	0	0

Table 11. revealed that how actively research scholars used SNS for different purpose in which BU scholars 102(18%) scholars are the active member of any alumni group/community of their university23(18.3%) are group member but of unofficial students groups where as in jiwaji uni. 98(78.4%) are the member of alumni groups and 19(15.2%) said that they are the member of unofficial students groups and only 3(2.4%) scholars said that they are in any groups . this shows the total 200(80%) scholars are in community group this shows the usefulness of SNS in different aspects.

Table.11 is social networking sites is a platform for gathering information that is useful for your research?

SNS is useful fo your research	bundelkhand university	jiwaji university	total
yes	119(95.2%)	122(97.6%)	241(96.4%)
no	3(2.4%)	03(2.4%)	6(2.4%)
no idea	3(2.4%)	oo	3(1.2%)

Table 11. exposed the real perception that is useful regarding research and in BU 119(95.2%) scholars said yes it is useful and only 3(2.4%) said no and 3(2.4%) said no idea where as in JU 122(97.6%) student agreed that SNS is useful to gathering information regarding research only 3(2.4%) said no it is not. Compared the both university scholars perceptions the conclusion is 241(96.4%)said yes it is helpful.

Table.12.Is often you participate in professional official discussion?

How often check for notification	bundelkhand university	jiwaji university	total
Everyday	72(57.6%)	102(81.6%)	174(69.6%)
while visiting discussion	28(22.4%)	8(6.4%)	36(14.4%)
once a week	17(13.6%)	9(7.2%)	26(10.4%)
once a week when there is a bulk	08(6.4%)	6(4.8%)	14(5.6%)

(C) SOCIAL NETWORKING SERVICES: social networking service is an online platform which people use to build social networks or social relations with other people who share similar personal or career interests, activities, backgrounds or real-life connections. The variety of stand-alone and built-in social networking services currently available online introduces challenges of definition; however.

Facebook: Librarians can interact with users to know their information need. Libraries try to link some of these specialized library applications to Facebook. Facebook jumped by 60 million monthly active users from 1.94 billion in march 2017 to 2.01 billion as of June 30, 2017. The rate of growth seems to continue at 20 million active users per month. So, by the end of the year we should see 2.1 billion Facebook monthly active users. Here's the post where Zuckerberg announced the news. When looking for a business or information Facebook is one of the first places many people look. It is a place for community members to connect online. Therefore every library in the Peace Library System should have a Facebook page.

LinkedIn: is a business- and employment-oriented social networking service that operates via websites and mobile apps. Founded on December 28, 2002 and launched on May 5, 2003. It is mainly used for professional networking, including employers posting jobs and job seekers posting their CVs. As of 2015

MySpace: In Academic institutions where the students are; libraries have taken advantage of this site post, Calendar, custom catalog search tools, and blog features to improve their presence. MySpace was acquired by News Corporation in July 2005 for $580 million. From 2005 to 2008, MySpace was the largest social networking site in the world, and in June 2006 surpassed Google as the most visited website in the United States. In April 2008, MySpace was overtaken by Facebook in the number of unique worldwide visitors.

NEWS OPINION: An opinion piece is an article, published in a newspaper or magazine, that mainly reflects the author's opinion about the subject. Opinion pieces are featured in many periodicals.

(A) SOCIAL NEWS: Social News:A social news website is an Internet website that features user-posted stories. Such stories are ranked based on popularity, as voted on by other users of the site or by website administrators. Users typically comment online on the news posts and these comments may also be ranked in popularity. Since their emergence with the birth of Web 2.0, social news sites have been used to link many types of information, including news, humor, support, and discussion.

Digg: Digg is a social networking website featuring user-submitted news stories. Digg features links from across the Internet, ranging from widely known news sources to obscure blogs. Digg also builds its own list of popular stories that are going viral across the Web.

Reddit: Is an American social news aggregation, web content rating, and discussion website. Reddit was founded by University of Virginia roommates Steve Huffman and Alexis Ohanian in 2005.The site is a collection of entries submitted by its registered users, essentially a bulletin board system.

(B) REVIEWS: A review is an evaluation of a publication, service, or company such as a movie (a movie review), video game (video game review), musical composition (music review of a composition or recording), book (book review); a piece of hardware like a car, home appliance, or computer; or an event or performance, such as a live music concert.

ENTERTAINMENT: is a form of activity that holds the attention and interest of an audience, or gives pleasure and delight. It can be an idea or a task, but is more likely to be one of the activities or events that have developed over thousands of years specifically for the purpose of keeping an audience's attention.

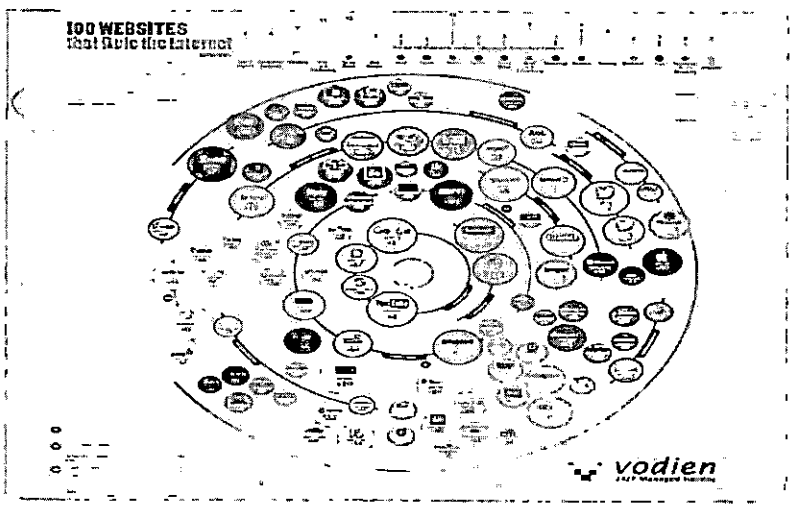
(A) VERTUAL WORLDS: A virtual world is a computer-based online community environment that is designed and shared by individuals so that they can interact in a custom-built, simulated world. Users interact with each other in this simulated world using text-based, two-dimensional or three-dimensional graphical models called avatars.

SECOND LIFE: Is an online virtual world, developed and owned by the San Francisco-based firm Linden Lab and launched on June 23, 2003. By 2013, Second Life had approximately 1 million regular users. In many ways, Second Life is similar to massively multiplayer online role-playing games; however, Linden Lab is emphatic that their creation is not a game "There is no manufactured conflict, no set objective".

(B) ONLINE GAMING: An online game is a video game that is either partially or primarily played through the Internet or another computer network. Online games are ubiquitous on modern gaming platforms, including PCs, consoles and mobile devices, and span many genres, including first-person shooters, strategy games and massively multiplayer online role-playing games.

WORLD OF WARCRAFT: World of Warcraft is a massively multiplayer online role-playing game (MMORPG) released in 2004 by Blizzard Entertainment. It is the fourth released game set in the fantasy Warcraft universe, which was first introduced by Warcraft: Orcs & Humans in 1994.

THE MOST WORLD POPULAR WEBSITES: This is a list of the most popular websites worldwide according to the top 100 lists published by Alexa Internet, as of April 3, 2017, and Similar Web, as of May 2017 Bright yellow, for instance, represents search engines, bright blue is games and light green retail and e-commerce. It shows that, like the global top 10, Google is ever popular. As are Facebook, YouTube, Reddit, Wikipedia and Yahoo.



5. Role of Academic Librarian In Social Networking

Today, Academic librarians are working largely with reallocated funds to transform programs and services by repurposing space, migrating collections, and redeploying staff in the digital resources environment. libraries stand in a difficult position that requires exerting efforts to prove their competitive abilities for attracting and satisfying their customers in a virtual environment that has various sources of information. Academic libraries provide resources and services to support the learning, teaching, and research needs of students. This requires libraries to pay great attention to promoting customer relationship management with their customers for their knowledge development goal plans and strategies to achieve success amidst the current competitive circumstances.

EBooks: can be read online in your browser, requiring no extra software. But in order to download an eBook, you need to download a small piece of free software known as an eBook reader. An electronic book (or e-book) is a book publication made available in digital form, consisting of text, images, or both, readable on the flat-panel display of computers or other electronic devices.

Although sometimes defined as "an electronic version of a printed book. EBooks also offer the convenience of size and portability; you can store your entire library on a laptop or other device.

CONSORTIUM: A consortium is an association of two or more individuals, companies, organizations or governments. A group of institutions and/or organizations that share one or more education abroad programs within a membership group in order to provide greater access, quality control, and/ or cost efficiency in education abroad programs to students with the objective of participating in a common activity or pooling their resources for achieving a common goal.

Library news and events: Library News & Events is the hub for information about events, resources, and services from the Libraries. It is a publication of the General Library System External Relations Office. A Calendar of Events and Activities at Indian Libraries and the latest News Updates.

E-updates: My library websites services are a free service from the Organization of the Inspector General. Your email address will only be used to register you for email notifications and to allow you access to your account. To sign up for updates, to manage your subscriber preferences, or to cancel your subscription,

Upcoming events Every year, my library an eclectic blend of local and international events, entertainment and exhibitions take place in Malta and Gozo. The following is a comprehensive list of upcoming events that are currently featured on our calendar. Events are listed in date order. If you wish to look for an event by date or type, go to the Events Search page

Respond to people: the libraries are respond to people of information and refuge for the poor and disenfranchised. However, many public libraries have enacted policies that limit homeless patrons' access to library resources. These policies are often put in place in response to complaints from other patrons about the presence of those exhibiting signs of poverty

Web 2.0: Today I saw Web 2.0 refers to World Wide Web websites that emphasize user-generated content, usability and interoperability for end users. Libraries are increasingly enhancing their website by introducing Web 2.0 features. One such library that undertook a major project to re-shape its website and incorporating blogs and Wikis. The term was popularized by Tim O'Reilly and Dale Dougherty at the O'Reilly Media Web 2.0 Conference in late 2004, though it was coined by Darcy DiNucci in 1999. Web 2.0 does not refer to an update to any technical specification, but to changes in the way Web pages are designed and used. Stephen Abraham describes Web 2.0 as a "conversation". Modern users look for this kind of warm

experience with the web, something like an interactive dialogue. With the adoption of these tools, staff is better able to update the content of the website instead of just relying on the website master. Casey (2007) envisioned that the next version of the Library catalogue or OPAC will have to include many of the attributes that comprise the definition of Web 2.0. Key requirements include user participation; The modern library concepts have also embraced these services and call them as Library 2.0 services. The concepts of Library 2.0, OPAC 2.0, and Librarian 2.0 are the offspring of Web 2.0 ideas. The idea of Web 2.0 can be summarized as the reciprocal link between the user and provider. Ultimately Web 2.0 services are expected to replace desktop computing applications for many purposes.

6. Use of web 2.0:

Tags: Another Web 2.0 feature which is becoming common in library community is called tagging. Tagging is described as the process by which the resources in a collection are assigned tags in the form of words, phrases, codes or other strings of characters. Categorization of content by creating tags that are simple, one-word descriptions to facilitate searching and avoid rigid, pre-made categories.

Search: Most of the social networking facilities are web-based interfaces where users make use of the above mentioned Web 2.0 tools such as chat, messaging, email, video, blog the ease of finding information through keyword search which makes the platform valuable.

Extensions: automation of some of the work and pattern matching by using algorithms e.g. amazon.com recommendations. The mining of previously gathered data relating to a user's activities or transactions which allows users to be guided to initiate other valuable activities or transactions. Exemplified by the phrase "other customers who purchased this book also purchased these books"

Links: guides to important pieces of information. The best pages are the most frequently linked to.

Authoring: the ability to create constantly updating content over

7. CONCLUSION:

It attempts to identify the Purposes of Social Networking Sites Usage in Libraries, How Works Social Networking Sits in Library and Impact of Use of Social Networking Sits on Libraries. Social networking sites proved a vast area for communication with others, which are online network. SNS in library can be used productively

but it has thread to user to using without circumspection. Academic Library Users Social networking sites could be effectively used to disseminate information and promote pleasant professional relationship among librarians and library users. The social media survey has been a very helpful exercise for identifying the current state of the use of web 2.0 tools among the member libraries. Organizations face considerable challenges in implementing large-scale integrated systems such as ERP and URM. Implementation of a URM system was identified as a critical need to align with the overall business strategy of selling solutions, instead of products Web 2.0technologies have been adopted by the group of libraries to recalibrate the processes and the paradigms of the library and information services.

REFERENCE:

1. http://www.brandignity.com/2012/11/6-reasons-why-social-networking-is-so-popularthese-
2. days/ [Accessed on April 12,2014]
3. http://www.Alt, R., Puschmann, T. (2004) Successful Practices in Customer Relationship Management, 37th Hawaii International Conference on System Science, pp. 1-9
4. http://www.Kaplan Andreas M., Haenlein Michael. (2010)"Users of the world, unite! The challenges and opportunities of social media".
5. http://www.Mishra C.S. (2015) "Social Networking technologies in digital environment: its possible implication on Libraries".
6. http://www.A.R, Riza Ayu & Abrizah. (2011). Do You Facebook?. Usage and applications of Facebook
7. page among academic libraries in Malaysia. The International Information and Library Review,
8. Chu Samuel Kai-Wah & Du Helen S. (2012) "Social Networking tools for Academic Libraries" In, Journal of Librarianship and Information Science, vol. 45(1)
9. http://www.O'Reilly, Tim (2005): What is Web 2.0? Design Patterns and Business Models for the Next Generation of Software Online: oreillynet. com/pub/a/oreilly/tim/news/ 2005/09/30/what-is-web-20.html, retrieved: 26.12.2008.
10. http://www.Clumpner, Krista E. "Delivering Access to Library Materials and Services: Our Recipe for Success." Computers in Libraries (October 1, 2004)

The Use of Social Networking Sites (SNSs) among the Faculty Members: A study of Mizoram University, Aizawl, India

Dr. Anil Kumar

Librarian Kendriya Vidyalaya, Mizoram University, Aizawl
anil_2278@rediffmail.com

Dr. M. P. Singh

Head, Department of Library & Information Science
BBAU, Lucknow-226025, UP. India
mpsinghdlis@gmail.com

Abstract: The present paper is an attempt to determine the use and effectiveness of Social Networking Sites (SNSs) in information communication, teaching and research among the faculty members of Mizoram University, Aizawl, Mizoram, India. The study conducted through a structured questionnaire administrated among the faculty members of the entire department (33) of the University. It indicates that most of the respondents were found to be aware and making affective use of such sites in their communication, teaching and research. The majority of the faculty members i.e. 67.15% who accesses SNSs for various purposes are believe that information available on these sites are partially reliable. It was revealed from the study that facebook is the most preferred SNS followed by LinkedIn by all categories of faculty members. It is also observed that 9.50% of female faculty members have been victim of social networking bullying.

Keyword: Social Networking Sites, ICT, Facebook, LinkedIn, Web 2.0 application.

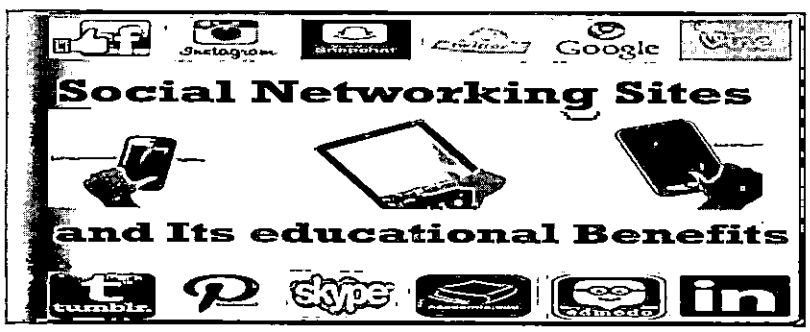
1. Introduction

Social Networking Sits (SNSs) have increasingly become an important tool for teaching community and information professionals as well. As most of the teaching-learning communities have been looking for way to understand the phenomena in order to the harness its potential utilisation in academic environment. Social networking brings a revolution in the field of information communication and totally changes the scenario of social, cultural, educational, and economical and so on.

The ever increasing contribution of internet and the revolution of information distribution over the last few decades have significantly increased the relationship in between the individuals, institutions, communities etc. According to Boyd and Ellison (2007) "Web based services allow individuals to build a Social and professional profile within a bounded system, articulate a list of other users with

whom they share a connection, and view and traverse their list of connections and those made by others within a system". Social networking sites, allow users to create a personalised account that includes the information like; date of birth, hobbies, preferences, education status, relationships status and personal and professional interest etc. The applications of web 2.0 facilitate the users to provide very interactive and constructive information sharing, user based environment on the internet. It also provides a platform to all the users to interact with content creator, sharing their ideas with colleagues, friends, professionals, intuitions and so on.

A social networking site provides a huge number of web based services for their users to interact to the individuals through the internet i.e. e-mail, chatting, instant massaging etc. It is estimated that there are more than 300 Social Networking sites which are available on internet and the membership of these websites are open to all. Anybody can become a member through a very small justification. The use of social networking by the faculty members and students open up a great opportunity for education and research.



(https://www.google.co.in/#q=picture+of+social+networking+sites).

2. Review of Literature

More than 30 related literatures were reviewed and the studies which were found appropriate were thoroughly reviewed along with their findings which are as follows:-

Kumar & Singh (2016) conducted a study on the use of SNSs by research scholars of physical science department at Assam University Silchar. The study reveals that the most of the research scholars are aware about SNSs and using it in their day to day information communication and it was found that majority of the research scholars i.e.66.22% logged it several times in a day and having more than 200 friends/contact on it. Mahajan et al. (2013) explored to study the activities and

purposes for using SNSs by the research scholars of Panjab University, Chandigarh. The findings of their study shows that majority of the respondents were found to be aware and making use of such applications in their research work. Their study also reveals that facebook is the most popular SNSs by all categories of researchers. Chakraborty (2012) pointed out the bustle and purpose of using SNSs by the research scholars of North-East Hill University, Shillong, and originate that the most of the respondents were from the social science stream and using it for group discussions in input matters, compilation exploring and inventing new concepts, etc. Parveen (2011) examine the alertness and use of SNSs by LIS professionals in the university libraries of Uttar Pradesh and noticed that the most of the LIS professionals are well conscious about Facebook as it provide them a vital platform to share their views, ideas and experiences and so on. Boyd and Ellison (2007) reported that the students used SNSs to keep in touch with old friends and to sustain or deepen relationships characterised by some, form offline link such as residence closeness or a shared class explain the widespread ideas, description and character of Social Networking Sites. They also offered the chronological growth of these sites and changes which had happened over the time.

3. Significance and Scope of the Study

At present social networking sites are playing a very important role in our day to day information communication. A number of social networking sites which are dedicated to teaching learning and it has been changed the educational atmosphere and being widely access by the teachers and students. The present study is restricted to all the faculty members of Mizoram University, Aizawl Mizoram. There are total 33 departments under 8 schools with total 297 faculty members which are covered under the study.

4. Objective of the study

The present study has the following specific objectives:

- To find out the use of social networking sites among the faculty members of the Mizoram University;
- To explore the purpose of accessing social networking sites;
- To find out the frequency and duration of accessing social networking sites;
- To know the reliability of information accessed by the faculty members and
- To know the problems being faced by the faculty members while accessing social networking sites.

5. Methodology

For the collection of the primary data from the respondents a questionnaire tool was used under the survey method. A structured questionnaire was prepared and distributed among all the faculty members (297) of Mizoram University in the month of September- October17.

Total 297 questionnaires were distributed and 190 duly filed questionnaires were received back from the respondent out of which 12 questionnaires were not taken into the consideration as it was incomplete. Total 178 questionnaires have been analysed for the purpose using statistical package for social Sciences (SPSS) and Ms-Excl, and their interpretations have been undertaken in the light of the framed objectives.

6. Data Analysis and Interpretation

6.1 Department wise Distribution of the Respondents

There are total 178 respondents who were provided their feed back through questionnaire, these respondents are faculty members belonging to all 33 departments of Mizoram University, Aizawl, Mizoram India.

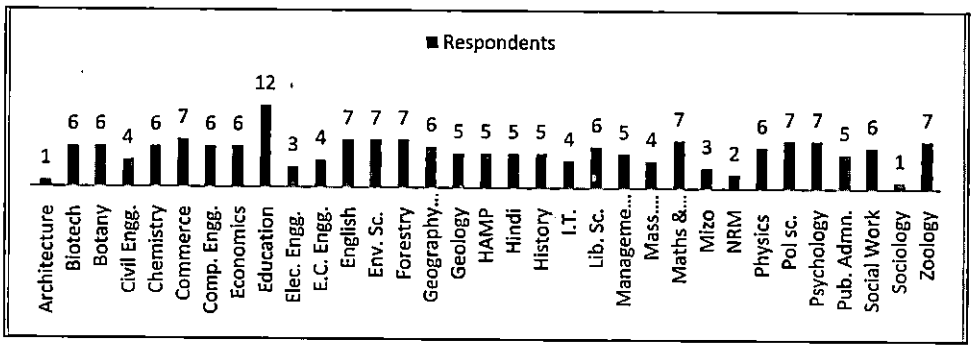


Figure 1. Department wise Respondents.

6.2 Gender and Designation wise Distribution of the Respondents

Figure 2 presents the gender and designation wise distribution of the faculty members which shows that 71.70% male and 28.30% female respondent are Assistant Professor, where as 72.70% male and 27.30% female respondents are Associate Professor and 89.40% of male and 10.60% female respondents are Professor who are actively accessing the social networking sites.

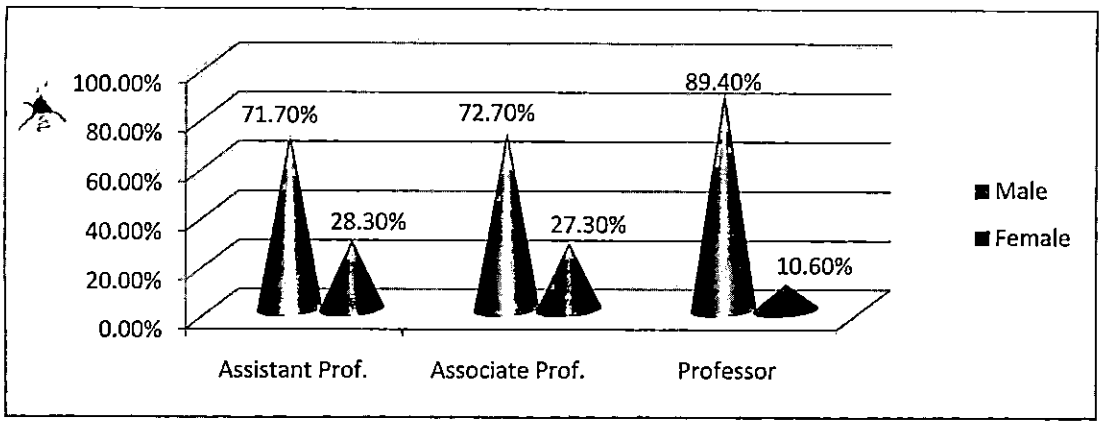


Figure 2. Gender and Designation wise Distribution of the Respondents.

6.3 Age group and Access tools wise Distribution of the Respondents

Figure 3 provides the data related to the age group wise preferred tools used by the respondents while accessing SNSs. It shows that in the age group of 21-30 years, most of the respondents i.e. 65.60% use mobile, 22.20% use laptop, 11.10% use personal computer and 1.10% use others tools like tablet, palmtop for accessing these sites, Whereas in the age group of 31-40 years 50.20% use mobile, 28.10% use Laptop, 20.50% use personal computer and 1.20% of respondents use other tools like tablet, palmtop etc. Whereas in the age group of 41-50 years 53.40% use personal computers, 27.80% use mobile, 18.30% use laptop and only .50% of respondents use other tools like tablet, palmtop for accessing these sites. Whereas in the age of 50 and above 71.80% use personal computers, 18.80% use mobile and only 9.40% of the faculty members use laptop as tool while accessing SNSs.

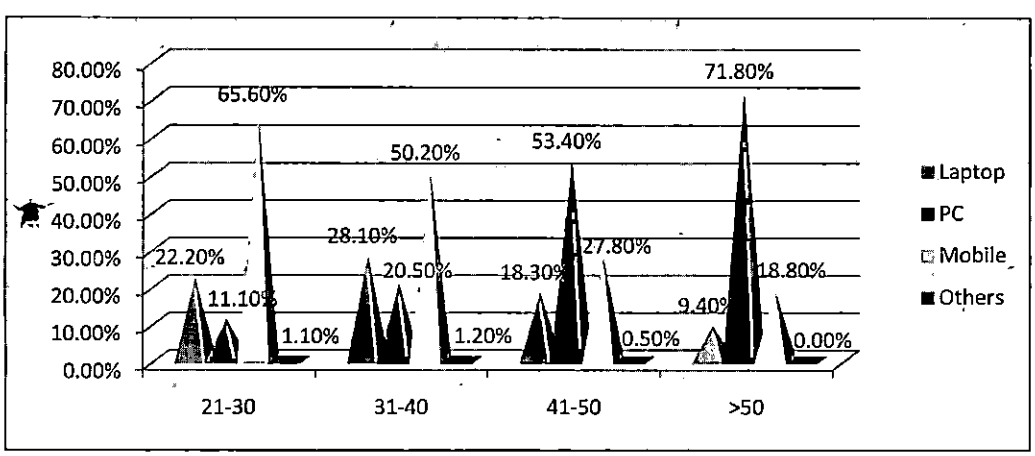


Figure 3. Age group and Access tools wise Distribution of the Respondents.

6.4 Accessing SNSs in a Day (Hours) by the Respondents

Figure 4 shows the duration spend by the respondent on SNSs. It indicates that most of the Professor i.e. 55.30% access SNSs less than 01 hour in a day followed by 24.10% use in between 1 to 2 hours, 12.10% 2-3 hours, 8.50% use it in between 3-4 hours in a day. Whereas 33.00% of Associate Professor uses it less than 1 hour, 30.60% in between 1-2 hours, 27.30% 2-3 hours, 8.00% 3-4 hours and only 1.10% spend on SNSs more than 4 hours in a day. Whereas only 6.70% of Assistant professor uses SNSs less than 1 hour, 5.00% 1-2 hours, 9.10% in between 2-3 hours, 39.20% use it 3-4 hours and most of the Assistant Professor i.e. 40.00% access these sites more than 4 hours in a day.

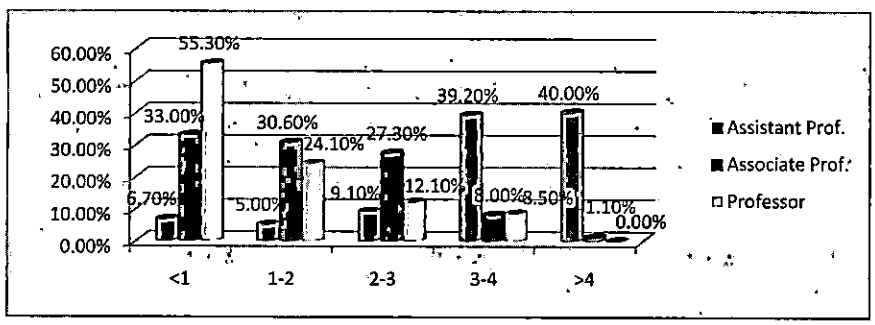


Figure 4. Accessing SNSs in a Day (Hours) by the Respondents

6.5 Most preferred SNSs Accessed by the Respondents

Figure 5 shows the most fevered SNSs accesses by the faculty members. It shows that most of the respondents i.e. 28.45% access Face book, followed by the LinkedIn 24.35%, whereas 18.45% of respondents accesses Whatsapp, 12.25% of respondents access Research Gate, 09.16% accesses Academia edu, 5.24% accesses Twitter and 2.10% access others social networking sites like Google+, Blogger.com, Hike etc.

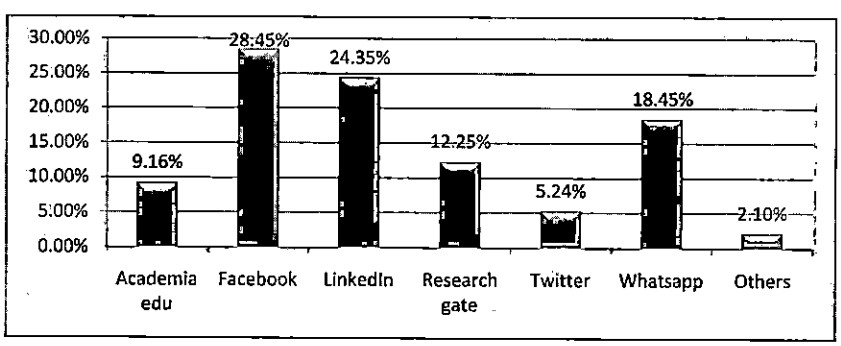


Figure 5. Most fevered SNSs Accessed by the Respondents

6.6 Purpose of Accessing SNSs by the Respondents

Figure 6 indicate the data related to the purposes of using SNSs by the Faculty members. Which shows that most of the respondents i.e. 28.60% accesing SNSs to keep in tuch with their family and friends, followed by 21.05% of respondents using it for shaering experiances, whereas 18.60% of respondents use to take part in discussions, 05.20% respondents use it for find their desired information, 11.85% use it for shaering classroom's information to their students like assingments, projects, seminar and so on, and 5.20% of the faculty membbers accesse it for find other information like meet to new people, sharing photo/vedio and so on.

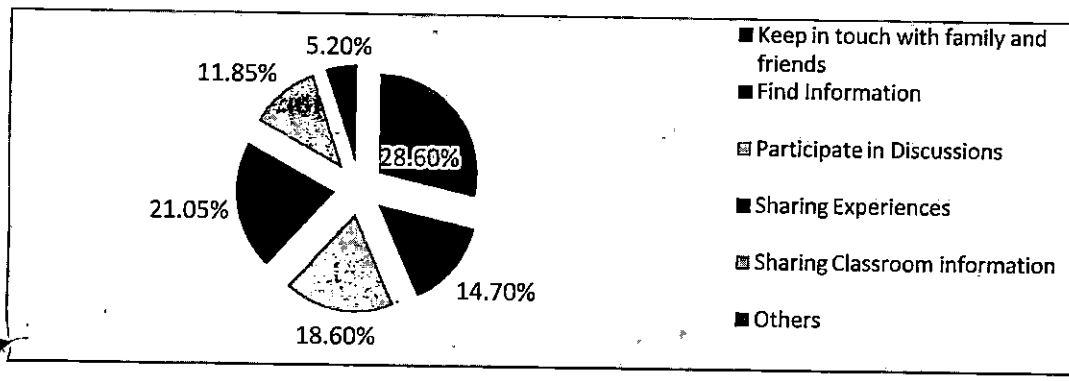


Figure 6. Purpose of Accessing SNSs by the Respondents

6.7 Friends/Contacts on SNSs by the Respondents

Figure 7 presents the numbers of friends/contacts on SNSs of the faculty members, which shows that most of the professor i.e. 31.20% having less than 25 friends/ contacts on SNSs, whereas 29.80% having in between 26-49 friends/contacts on these sites, 17.65% having in between 50-99 friends/contacts, 12.80% having in between 100-200 and 8.55% of Professor having more than 200 friends/contacts on SNSs. Whereas 16.70% of Associate Professor having friends/contacts less than 25, 22.45% having in between 26-49, 18.15% having in between 100-200 friends/contacts and only 11.35% of Associate Professor having more than 200 friends/contacts on SNSs. Whereas most of the Assistant Professor i.e. 43.30% having more than 200 friends/contacts on SNSs, followed by 28.15% who having in between 100-200 friends/contacts,17.00% of respondents have friends/ contacts in between 50-99, whereas 08.25% have friends/contacts in between 26-49 and only 3.30% of Assistant Professor having less than 25 friends/contacts on social networking sites.

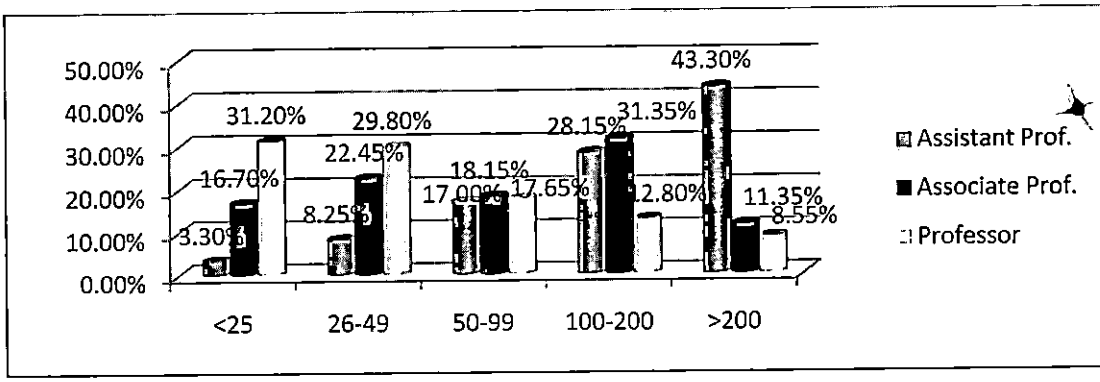


Figure 7 Friends/Contacts on SNSs by the Respondents

6.8 Reliability of Information Accessed by the Respondents

Figure 8 presents the data related to the reliability of information accessed by the faculty members. It shows that most of the respondents i.e. 67.15% believe that the information available on SNSs is partially reliable, whereas 29.50% of respondents believe that information's which are available on SNSs is reliable and only 3.35% of faculty members feel that information's are available on SNSs is not reliable at all.

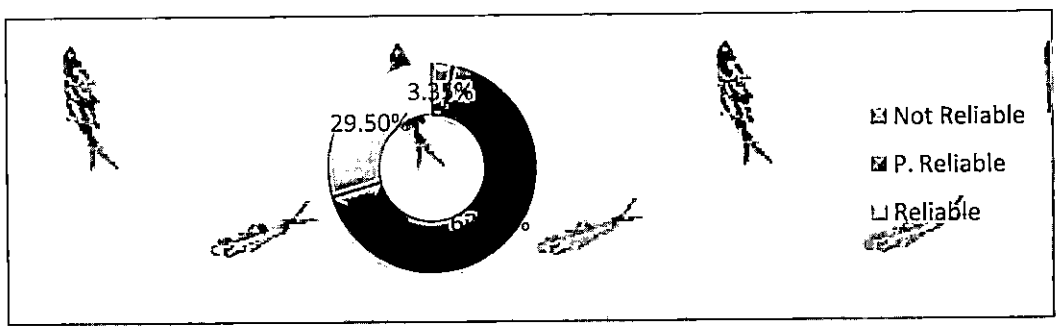


Figure 8 Reliability of Information Accessed by the Respondents

6.9 Problems being faced by the Respondents while Accessing SNSs

Figure 9 shows hurdles faced by the faculty members while accessing SNSs. It indicates that 29.30% of respondents find it time consuming, 23.40% of respondents not facing any problems while accessing SNSs, 17.25% of respondents believe that it leaks their private information, whereas 15.65% of respondents facing poor internet connectivity, 07.55% of respondents SNSs are not user friendly and 6.85% of faculty members face others difficulties like lack of ICT knowledge, health problems etc.

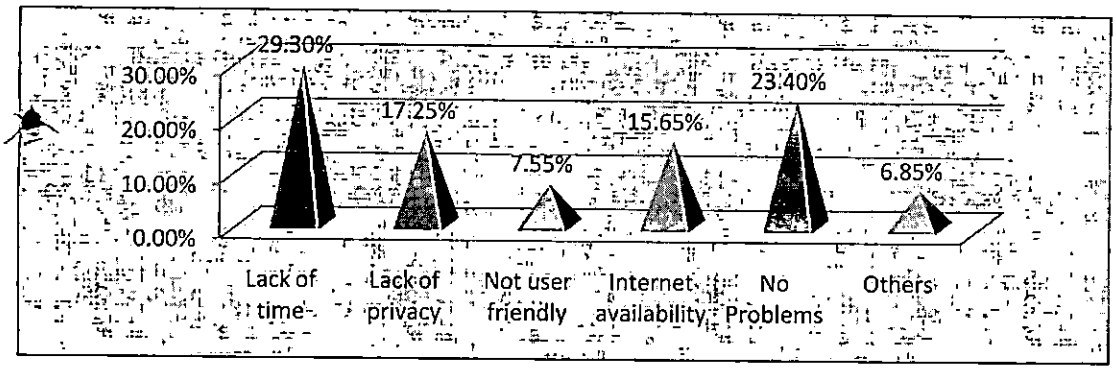


Figure 9. Problems being faced by the Respondents while Accessing SNSs

6.10 Victim of SNSs Bulling

Figure 10 presents the data regarding victims of social networking bullying. It is important to note that there is only 0.70% male faculty members found victim of SNSs bulling. Whereas 9.50% of female faculty members have accepted that they have been victims of social networking bullying while using these sites.

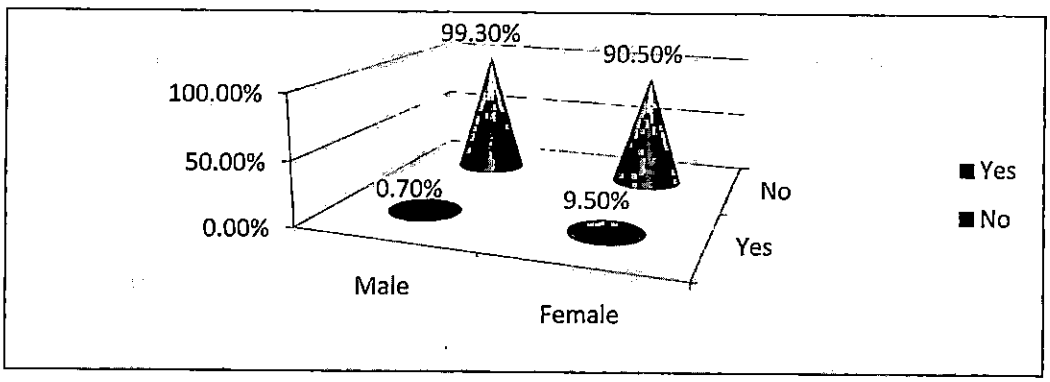


Figure 10. Victim of SNSs Bulling

7. Findings

The following are the major findings of the present study

1. The study finds that most of the faculty members are aware and accessing the SNSs for their teaching-learning purposes,
2. The majority of the Faculty Members i.e. 58.87% are in between the age group of 31-40 years,
3. Majority of the faculty members who belong to the age group of 21-30 years i.e.

65.60% are using Mobile as accessing tools while accessing SNSs,

4. Most of the faculty members i.e. 71.80% who are in the age of 50 or above preferred the Personal Computer as access tool,
5. The Facebook is the most preferred SNS being accessed by all category of the faculty members i.e. 28.45% followed by LinkedIn 24.35%,
6. The majority of the Professors i.e. 55.30% spend less than 1 hour in a day for using SNSs,
7. Most of the Assistant Professor i.e.40.00% spend more than 4 hours in a day to access these sites,
8. The majority of the Professor i.e. 31.20% having less than 25 friends/contacts on Social Networking Sites,
9. Most of the Assistant Professor i.e. 43.30% are having more than 200 friends/ contacts on SNSs,
10. It is observe that most of the faculty member agree that it is time consuming,
11. The majority of the faculty members i.e. 28.60% use SNSs for keep- in- touch with their family and friends,
12. Most of the faculty members i.e. 67.15% are of opinion that information available on SNSs are partially reliable and
13. The most important finding of the study is that 9.50% of the female faculty members and 0.50% of male faculty members have been victims of social networking bullying while using these sites.

8. Conclusion

This paper has presented the result of a survey on Mizoram University faculty members' use of SNSs for the propose of teaching and learning. The result indicates that the respondents do make proper use of SNSs for activities that are very common for teaching-learning. At presents the Social Networking Sites provide a very vital platform to share and access the relevant information for academic as well as personal purposes to connect and enlarge their professional network. The above findings show that SNSs are being accessed very actively by all categories of the faculty members of Mizoram University. The SNSs provide very largest role to interact and communicate with each others. Several features of these sites such as posting the classroom information, profile surfing, posting of new information, sharing photo & videos of events, making friends, meeting new

people, participating in discussion and so on are the medium by which the faculty members keep update and share their experiences and enrich their teaching-learning capabilities to each others. The Colleges and Universities library should create an environment to support library activities and access SNSs as a promotion apparatus for the services available to the faculty members.

References

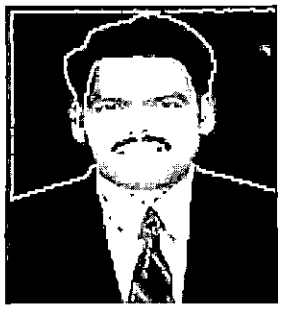
1. Bicen, H., & Cavus N. (2010). The most preferred social network sites by students. *Procedia Social and Behavioural Science,*. 2, 5864-5869.
2. Boyd, D.M., & Ellison, N.B. (2007). Social Network Sites: Definition, history and scholarship. *Journal of Computer-Mediated Communication,* 13, 207-218.
3. Chakraborty, N. (2012). Activities and reasons for using social networking sites by research scholars in NEHU: a study on Facebook and ResearchGate. 8th Convention PLANNER, Sikkim University, Gangtok, March 1-3, available at: http://ir.inflibnet.ac.in/bitstream/handle/1944/1666/3.pdf?sequence¼1(accessed 13 Jan 2014).
4. Ellison, N.B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook 'friends': Exploring the relationship between collage students' use of online social networks and social capital. *Journal of Computer-Mediated Communication,* 12, 1143-1168.
5. Kluemper, D.H., & Rosen, P.A. (2009). Future employment selection methods: evaluating social networking web sites. *Journal of Managerial Psychology,* 24, 567-580.
6. -Kumar, A., & Singh S.N. (2016). Use of Social Networking Sites by Research Scholars of School of Physical Science: a study of Assam University, Silchar. *E-Library Science Research Journa,* 4, 39-47.
7. Mahajan, P., Singh, H., & Kumar A. (2013). Use of SNSs by the research scholars in India: A comparative study of Punjab Univdrsity and Kurukshetra University. *Library Review,* 62, 525-546.
8. Parveen, N. (2011). Use of social networking site (Facebook) in making awareness among the library and information science professional of university libraries of UP: a case study. *International Journal of Digital Library Services,* 1, 9-17.
9. Singh, K.P., & Gill, M.S. (2011). Use of social networking sites by the research scholars: a study of Guru Nanak Dev University", Amritsar. *Library Herald,* 49, 229-241.

Authors Profile



Dr. Anil Kumar is working as Librarian at Kendriya Vidyalaya Mizoram University Campus, Aizawl, Mizoram. He has a Ph.D. in "Role of Social Networking Sites in Information Communication: A study of Faculty members and Research scholars of Assam University and Mizoram University" by the Department of Library and Information Science, Mizoram University, Aizawl Mizoram. He holds M.L.I.Sc. Degree from Bundelkhand University, Jhansi. He did his M.Phil in LIS from Vinayaka Mission University, Salem, Tamilnadu. He has more than 10 publications to his credit. He has participated and involved in many national and International conferences. He is life member of Indian Library Association (ILA).

E-mail: anil_2278@rediffmail.com



Dr. M.P. Singh presently working as Associate Professor in the Department of Library and Information Science at Babasaheb Bhimrao Ambedkar University (BBAU) (A Central University) Lucknow. Prior to joining the BBAU, He has worked as Assistant Professor at DLIS, Bundelkhand University, Jhansi. Dr. Singh holds a master degree in four subjects (Commerce, LIS, IT. And Business Admn.) and also a Ph. D in Library and Information Science. He started his professional career in 2000 as Librarian in ITI Delhi he has about 16 years of experience in Library profession and presently involved in teaching and research. He is presently supervising 08 research scholars of PhDs. He has written 05 Books and has more than 30 of papers in both National and International conferences. He own to his credit of organizing some National conferences, seminars and workshops. He has also attended a number of National and International conferences and has acted as Invited Speaker, Chair person, co-chair person, Rapporteur in various technical sessions. In some of these these conferences. He has been member of editorial board of some library and information science journals. He is also a life member of ILA, IATLIC, IASLIC, SALIS, and SLA-Asian Chapter.

E-mail: mpsinghdlis@gmail.com

Use of Social Networking Sites by Undergraduate Engineering Students at Jahangirabad Institute of Technology, Barabanki, Uttar Pradesh, India

Nazia Salauddin

Librarian
Jahangirabad Educational Trust Group of Institutions
Jahangirabad Fort, Barabanki UP
nazia2710@gmail.com

Abstract: Student reliance on social media is undeniable. However, while we largely regard social media as a new phenomenon, the concepts underlying it come directly from social network theory. Consequently, an essential challenge for engineering organizations wishing to overcome informational silos is to implement mechanisms that facilitate, encourage and sustain interactions between otherwise disconnected groups. The use of social media such as Twitter and Facebook as well as news gathering practices of 190 engineering students was investigated through student completion of a survey. In this article, the authors examine how the social network concepts of size, quality, complexity, diffusion, and distance determine the situational usefulness of social media tools such as Facebook, LinkedIn, and Twitter, etc. The explosive increase in usage of social media and their integration with popular tools like web search engines and mobile devices. They need to be educated about the potential value of social media as sources of breaking news, valuable analysis, and discussion, as well as tools to create and maintain social and professional relationships. This paper reports the results of a study to determine the behavior of students enrolled in Jahangirabad Institute of Technology, Barabanki during the Spring 2016 term with respect to use and perception of social media.

Keywords: Social Media, Social Networking, Facebook, Twitter, Engineering

1. Introduction:

Social media offers an exciting new area for our discipline to produce research and pedagogy that is in high demand by students, industry constituents, and other disciplines. Social Networking Services (SNS) are changing the ways in which people use and engage with the internet and with each other. Given the increasing popularity of social media and their integration into many of the information systems people use, it becomes interesting to study how engineering students perceive and use them. Social media can be a valuable source of topical news, information, and a tool to build virtual social and professional communities. Complex engineering environments are typified by a number of cohesive groups, drawn together by occupational, professional, contractual and role-based alliances.

Social media are not new. We wrote about the creation of virtual communities and their impact on the communication of science 20 years ago. What is new is the fact that these days the potential users of social media are counted in the hundreds of millions. Social media users include people of all ages, walks of life, and levels of technological literacy. When we began to observe virtual communities, the technologies used (such as BBS, Listservs, and Usenet) were restricted to savvy computer users. These days anybody with a mobile device may be tweeting to a virtual community of users. Given the increasing popularity of social media and their integration into many of the information systems people use, it becomes interesting to study how business students perceive and use them. Social media can be a valuable source of topical news, information, and a tool to build virtual social and professional communities.

SNS members can also join virtual groups based on common interests, see what classes they have in common, and learn each others' hobbies, interests, musical tastes, and romantic relationship status through the profiles. They can create the page, for business purpose also. Facebook is a popular free social networking website that allows registered users to create profiles, upload photos and video, send messages and keep in touch with friends, family and colleagues. For instance, Social media plateform could be beneficial to students in the following ways

- Marketplace - allows members to post, read and respond to classified ads.
- Groups - allows members who have common interests to find each other and interact.
- Events - allows members to publicize an event, invite guests and track who plans to attend.
- Pages - allows members to create and promote a public page built around a specific topic.
- Presence technology - allows members to see which contacts are online and chat.

Other social media such as blogs and linkedIn also provide opportunities for a student to communicate with targeted professionals and build, establish, and differentiate a personal brand identity that could assist them in their job search and career. While social media/networking use by students and young people is often seen as narcissistic time wasting and harmful to communication skills and future employment, use of LinkedIn provides an opportunity for engineering students to learn about the more focused and professional use of social media and networking. In addition to personal job search and career benefits, the

development of social networking skills and use of social media for branding and strategy are easily transferable to apply to a company's corporate or technological branding.

2. Problem Statement:

There are many studies conducted to find out the impact of social networks on young generation. But the present work is conducted among the engineering college students to explore how social networking site proves helpful in generating awareness.

3. Background:

Jahangirabad Institute of Technology (JIT), is an institute under Jahangirabad Educational Trust Group of Institutions approved by All India Council for Technical Education (AICTE) for establishment of integrated campus for offering multiple disciplines in Engineering and Management. It aspires to establish its credentials for its academic excellence, quality research, executive development and industry interface. The institute has built an excellent faculty pool of experience and a rich intellectual capital base, state of the art infrastructure, technology savvy campus along with commitment towards quality. The institute is located in the historic fort of Jahangirabad, in Barabanki District, about 40 km from Lucknow city. Barabanki of eastern UP has been out of the technology race and remains industrially backward. But now the fort has been transformed into important center for education, learning and research.

4. Review of Literature:

The literature on surveys about use of social media by the students is extensive and enormous. Many studies have been conducted to investigate the use of social networking sites based on their subject interest, occupation, information environment, and geographical location. Study of related literature implies locating; reacting and evaluating reports of research as well as report of casual observation and opinion that are related to the individuals planned research problems. In this study an attempt has been made to cover few works which have been undertaken in India and abroad.

Our challenge as educators is to harness that connectivity and use it as a classroom enhancement, since, as Justin Bonzo (2010) ,[1], explains, "social

media are inherently provocative and have sparked a new way of thinking about communication, collaboration, and group effort" (p. 914). But instructors must proceed carefully to avoid being seduced by the new media and ignore the text itself, the "traditional focus" of a writing classroom.

As social network technologies not only frame the way individuals interact and learn, but actually impact the learning process itself," notes Lisa Dawley (2009), [2] "new pedagogies are needed to effectively integrate these communication mechanisms into the learning environment" (p. 110). Student and faculty immersion in what are becoming traditional social networks Facebook, Twitter, LinkedIn as well as more adventuresome venues podcasting, micro blogging, wikis, RSS syndication are beginning to change the landscape of education.

Most noticeably, students and faculty are more connected, prompting George Siemens (2005), [3] to posit a new theory, aside from behaviorism, cognitivism, and constructivism, to explain the phenomenon: connectivism, which he links to chaos theory and the notion that flux is the norm. Information is constantly changing, and our abilities to adapt to new conditions, as well as to distinguish between the significant and the trivial, are crucial for decision making. In addition, he suggests, knowledge now lies outside the self and learning can reside in "non-human appliances".

Bargh, McKenna, and Fitzsimons, (2002), [4] hence, these tools may enable connections and interactions that would not otherwise occur. For this reason, we explore whether the relationship between Facebook use and social capital is different for individuals with varying degrees of self-esteem

Zakaria et al. (2010), [5] Social media, social networking, online communication words used parallely believes that social media applications have already being accepted by young generations as a platform to socialize, collaborate and learn in an informal and flexible manner although their level of involvement and contribution varies significantly.

Al- Daihani's study (2010), [6] explores that the majority of MLIS students are aware of social software applications and they make moderate use of blogs, communication tools and social networking sites. Sheens study among students of the Pakistan reveals that the use of social networking site indicates popularity of facebook.com among these youth more often.

The survey of Pew Internet (2010), [7] says that facebook is the most commonly used social network among adults. Subramanian, et al (2008) reported the findings of study conducted to understand the role of SNS in college student's lives.

Ojedokun Ayoku and Victoria Nwamaka Okafor, (2015), [8] ICT skills acquisition and competencies of librarians: Implications for digital and electronic environment in Nigerian universities libraries" "The attractiveness of social networking sites (SNSs) has extended to almost all professionals in numerous human organizations including the library. Librarians as a result of this development are now making use of these sites to connect to other libraries and librarians both within and outside their environment.

Castillo, Mendoza, and Poblete (2011), [9] discuss the information credibility of news propagated through social media. They report on research that shows that most of the messages posted on Twitter are truthful but remind readers that "the service is also used to spread misinformation and false rumors, often unintentionally" Their work focuses on automatic methods for assessing the credibility of a given set of tweets.

Teclehaimanot and Hickman (2011), [10] report that students find passive behaviors more appropriate than active behaviors with no difference depending on whether students or teachers perform the behaviors. Additionally, men find student-teacher interactions on Facebook more appropriate than women. Engaging with another user (like sending a message) is an example of "active behavior". Looking at what another user has posted is an example of "passive behavior".

5. Objectives of the Study:

- To find the role of social networking sites,on creating awareness among the engineering students of Jahangirabad Institute of Technology (JIT).
- To explore engineering students view about its usage and services.
- To identify potential contribution of engineering students.
- To explore how to retrieve the relevant information with the use of social networking sites by engineering students.
- To help engineering students to generate a user driven environment and updates user with changing environment.

6. Limitations:

The study is limited to participant sample consisted of 190 students of undergraduate engineering college students as researcher want to reveal uses of social networking sites in developing awareness about current happening, professional information, job opportunities and educational development.

7. Methods:

A survey was developed to address major issues in the use of social media specifically with respect to use pattern and information gathering approaches during the Spring 2016 term. The participants were students enrolled in engineering courses, in different branches of studies. A total number of 250 questionnaires were distributed among the student of different branches of engineering. 230 filled questionnaires were returned back. The researcher selected 190 questionnaires for the analysis and 40 questionnaires were rejected due to incomplete responses. Students were informed that the survey was anonymous and voluntary. The names of students were not gathered in either the hard copy or web administrations of the survey.

8. Data analysis:

The empirical evidence in the paper is data drawn from an extensive survey of engineering students' uses patters of social networking sites. Questions like name, gender and educational qualification were asked. It is evident from the data that students use the social media. The entire data of the study after tabulation were analysed using simple statistical calculation and these results were further clarified with the help of graph in the following manner. Please note that in some instances percentages may exceed 100% due to rounding.

Table No 1: Gender Wise analysis of Respondents

Sr. No	Gender	Respondents	Percentage
1	Male	100	53%
2	Female	90	47%
Total		190	100%

The result of this study shows that out of 190 students who completed the survey, 100 (53%) were male and 90 (47%) were female.

Table No 2: Most Used Social Networking Sites

Sr. No	SNS	Respondents	Percentage
1	Facebook	167	87%
2	Twitter,	157	83%
3	LinkedIn	90	47%
4	Google+,	50	27%

5	You tube	40	21%
6	Instagram	30	16%

It is clear from the above table that Face book was the most often used Social networking site among engineering students 167 (87%), Twitter was the second most used SNS with 157 (83%) respondents respectively LinkedIn recite in third position having 90 (47%), Google+ was in fourth position with 50 (27%), YouTube was in fifth position with 40 (21%) Instagram was in six position with 30 (16)% and other for exe, Ning, Grouply, Blog, Flicker, Photo bucket, Net log, with 11 (6%) of respondents respectively. Respondents may select more than one checkbox, so percentages may add up to more than 100%.

Table No 3. Frequency of use of social networking sites

Sr. No	Frequency	Respondents	Percentage
1	Daily	144	76%
2	Sometime	36	19%
3	Rarely	10	5%
	Total	190	100%

It is observed in the study that use of social networking sites by students that majority of 144 (76%) of engineering students were using SNS daily, 36 (19%) used it sometimes, and 10 (5%) rarely used of rarely.

Table No. 4: Purpose of using social networking sites:

Sr. No	Purpose	Respondents	Percentage
1	To get interact professional and professionally sound people	122	66%
2	To keep abreast of the latest news and commentaries	110	60%
3	To participating in discussions	87	47%
4	To Express Creativity	82	45%
5	Others	11	6%

It is revealed from the above table that 122 (66%) were use social networking sites to interact professionally, 110 (60%) to use keep abreast of latest news and commentaries, 87(47%) of users to use to participating in discussions of the engineering field, 82 (45%) used to Express Creativity and 11 (6%) used to

other for example to connect engineering students or professional all over the World somebody have says it's very best platform in engineering field, for time pass, To build a strong network across world with new people and distant friends. Respondents may select more than one checkbox, so percentages may add up to more than 100%.

Table No 5: Satisfaction Level of use of Social networking sites in making Awareness

Sr. No.	Satisfaction View	No of Respondents	Percentage
1	Agree	159	83%
2	Disagree	15	8%
3	Neutral	16	9%
	Total	190	100%

It is founded that the out of 190 respondents the 159 (83%) engineering students were agree that SSN proved helpful in making awareness, 15 (8%) have the neutral opinion and 16 (9%) were disagree with it.

Table No 6: Social Networking sites works as a platform to interact beyond barriers of location and Nationality

Sr. No.	Satisfaction View	No of Respondents	Percentage
1	Agree	158	83%
2	Disagree	12	6%
3	Neutral	20	11%
	Total	190	100%

In response to the above question it is founded that 158 (83%) engineering students were of the view that social networking sites actual works as a platform to interact beyond barrier, 12 (6%) were neutral and 20(11%) were disagree with it.

Table No 7: Satisfaction of social networking sites on the User

Sr. No.	Satisfaction View	No of Respondents	Percentage
1	Agree	165	87%
2	Disagree	15	8%
3	Neutral	10	5%
	Total	190	100%

The result of the study shows that majority of the respondents were satisfied in the use of social networking sites with 165 (87%), 15 (8%) were neutral and 10 (5%) were not satisfied with it.

Table No 8: Problems of using social networking sites

Sr. No	Problems	Respondents	Percentage
1	Lack of time	149	78%
2	Lack of technical support	56	30%
3	No privacy ensured	85	48%
4	It is not useful for education	33	18%
5	It has no role in making awareness	20	11%
6	Other	3	2%

Various problems have been mentioned by the respondents among them 149 (87%) engineering students were of the view that they lacks time to use social networking sites, 56 (30%) were suffer from technical problem, 85 (48%) thought that no privacy secured in the use of social networking sites, 33(18%) have the opinion that it was not useful for educational purpose, 20 (11%) were founded that it plays nor role in making awareness and 3(2%) engineering students founded that other problems of using social networking sites for example No Permission to use social networking on duty, it gives information transfer to both parties. Respondents may select more than one checkbox, so percentages may add up to more than 100%.

The figure and statistics shows how social networking sites has a very influential role in the lives of young adults. In present paper the investigator has the aim of exploring how engineering students integrated social networking sites as a tool helpful in generating awareness.

9. Summary of Findings:

The significant findings of the study are given below:

- All the respondents are in the habit of using the social networking sites and more than half of them visit the SNS everyday and seventy-six percentages visit the SNC every alternate day and a very negligible portion to use them rarely.
- Facebook was the most often used Social networking site among engineering students.

- Majority of engineering students were using social networking website daily
- The main purpose of use of the social networking sites is to get interact professionally, followed by to keep abreast of the latest news and commentaries, to participating in discussions and to express creativity.
- Almost all the respondents use social networking sites for their academic and research activity also.
- Almost all the respondents use the social networking sites like Facebook, Twitter LinkedIn, Google+, Instagram and you tube.
- The majority of the all respondents are satisfied of the use of SNS to making awareness among the engineering students.
- Almost all the respondents are agreeing to social networking sites works as a platform to interact among engineering students of the all world.
- Almost respondents are satisfied to use of social networking sites and some are having Neutral view of the use of social networking sites.
- The Observation of the all respondents the main problem of using social networking sites are Lack of time, Followed by lack of technical support and privacy ensured.

10. Conclusion

Social media is a mode of communication that should not be ignored. Its many roles include: a source of news, a platform for global conversation, a vehicle for promoting or disseminating content, and a hub for professional networking. The empirical results contrast with the anecdotal evidence dominating the popular press. Although there are clearly some image management problems experienced by engineering students as reported in the press, and the potential does exist for privacy abuses, our findings demonstrate a robust connection between social networking sites usage and indicators of social capital, especially of the bridging type. Internet use alone did not predict social capital accumulation, but intensive use of Facebook did. It is observed that most engineering students are connected to each other by social networking sites to share experiences, views and participated in creating awareness. It has become one of the largest platforms in the world for sharing real time information. social networking sites allows users to interact and collaborate with each other in a social media dialogue as creators of user generated content in a virtual community, in contrast to websites where users are limited to the passive viewing of content that was created for them. The conducted study is an attempt to give an overview of social networking site and its possible

uses for engineering college students and to assess how much real transformation this technology can deliver, while deflating reaffirmation and singling out the real value of these innovations.

References

1. Bonzo, J. (2010). The paradox of social media and higher education institutions. In Proceedings of the 7th international conference on networked learning. Retrieved from http://www.lancs.ac.uk/fss/organisations/netlc/past/nlc2010/abstracts/PDFs/Bonzo.pdf
2. Dawley, L. (2009). Social network knowledge construction: Emerging virtual world pedagogy. On the Horizon, 17, 109-121.
3. Siemens, G. (2005). Connectivism: A learning theory for the digital age. International Journal of Instructional Technology and Distance Learning, 2 (1). Retrieved from http://www.itdl.org/Journal/Jan_05/article01.htm
4. Bargh, J., & McKenna, K. (2004). "The Internet and social life". Annual Review of Psychology, 55(1), 573–590.
5. Zakaria, M.H. Watson, J & Edwards, S.L. (2010) Investigating the use of web 2.0 technology by Malayasin students. Multicultural Education and Technology journal, 4, (1), 12-29.
6. Al-Dalhani, Sultan. (2010). "Exploring the use of social software by master of library and information science student." Library Review 5(2), 117-131.
7. Pew Internet Project Report, (2010). http://www.pewinternet.org/report/2010/Social-Mediaand- Young-Adults.aspx.
8. Ojedokun A Ayoku & Victoria Nwamaka Okafor. (2015), ICT skills acquisition and competencies of librarians: Implications for digital and electronic environment in Nigerian universities libraries, The Electronic Library, 33(3), 502 - 523
9. Castillo, C., Mendoza, M., & Poblete, B. (2011). Information credibility on twitter. In WWW '11: Proceedings of the 20th international conference on World wide web, ACM, New York, NY,675-684
10. Teclehaimanot, B., & Hickman, T. (2011). Student-teacher interaction on Facebook: what students find appropriate. Technology Trends, 5(3), 19-30

How Librarians can help to Combat with Plagiarism

Narender Kumar

Assistant Librarian, Dr. Bhim Rao Ambedkar Library Guru Jambheshwar University of Science & Technology, Hisar- 125 001
nkcgju2014@gmail.com

A University Professor wrote an expressive message to his students at the doctorate, masters, and bachelors levels and placed it at the entrance in the university in South Africa 'Collapsing any nation does not require use of atomic bombs or the use of long range missiles. It is only requires lowering the quality of education and allowing cheating in the examinations by the students' (WhatsApp, Intimate Friends Group, 2017).

Abstract: Plagiarism comprises unintentional and intentional use of others ideas, words, and materials without proper attribution and acknowledgement. Honesty, trust, avoid unfair means, respect and responsibility are the fundamental and significant pillar of academic integrity. Since inception libraries and librarians are playing a significant role to address the challenges of academics. The concept of plagiarism is not new in academics but got popularity from last few years due to emergence of information and communication technology. The purpose of the present paper is to give an outlook about plagiarism and to unfold the role of librarians to combat with the plagiarism. The paper will help to existing and budding scholars to understand the concept of plagiarism and its remedies. The theory of the paper is based on the personal observations of the author as he is engaged to frame a sound and seamless policy for his parent university.

Keywords: Plagiarism, Academics, Librarians, Libraries, Research Scholars, Policy.

1. Introduction

Broadly, academic growth can be categorized into two phases i.e. before Google and after Google and both two phases genuinely put substantial impact on academic orientation. Before Google, the plagiarism was prevailed but due to non availability of material in public domain, digital contents, and detection tools, it was not easy task to file the case(s) of plagiarism against any scholars. However after Google the scenario has got changed. The production of digital contents was started in abundant. Therefore, scholars started to access the contents through Google and another search engines and use the downloaded contents in their research work. Here the librarians role is to orient the scholars that how they can use the contents which are downloaded through Internet so that they may avoid plagiarism while

conducting plagiarism activities. Librarians are especially interested to address the concept plagiarism being spent maximum time with academic activities. The scholars are also spent more time in the library and dependent on library resources for their research activities as scholars cannot purchase and subscribe all the study material by their own as it is not cost effective. The prime objective of the library is to impart the information to its end users up to satisfactory level whether it is a public library or academic library. In the present century, the nascent technologies have changed the scenario of every activity of life in general and academics in particular. In fact major changes have been noticed by the academicians. With many advantages, many new challenges have also raised and stood like a giant in front of the academicians and librarians. Among different challenges, the plagiarism is one of them. The concept is accepted in academics all over the world but still unaddressed. Numerous issues are still lying which need to be addressed on priority. This is personal observation of the author that the plagiarism is one of the main pillars of academic misconduct within our educational system.

2. Some important definitions of Plagiarism

While many definitions of plagiarism exist, most agree fundamentally with the following version from the 'US Department of Health and Human Services' Office of Research Integrity (ORI):

As a general working definition, ORI considers plagiarism to include both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work [1]. 2. Plagiarism- using another's words or ideas without appropriate attribution or without following citation conventions [2]. 3. Plagiarism, or when students copy others' work and pass it off as their own, is a serious form of academic misconduct [3]. 4. Plagiarism is described as an unrecognised utilisation of someone's new ideas(s), expression(s), and text(s). 5. The utilisation of someone's new idea(s), expression(s) and texts(s) without acknowledgement [4].

3. Review of Literature

In this section, the author will review the theoretical perspectives on the mobility of ideas and practices which are being practiced by the librarians and academicians.

Taiseer et al. (2015) [5] in their paper described the state-of-the-art plagiarism techniques have been identified and analyzed based on their attributes, limitations, processes and taxonomies. It was discovered that the techniques are

limited in some detection aspects. It was also discovered that some techniques have been implemented on an industrial scale. **Nancy Snyder Gibson and Christina Chester-Fangman (2011)** [6] stated that the ways in which librarians of different types are addressing the issue of plagiarism at the institutional and pedagogical levels. More than 90 percent of the 610 respondents report that they have assisted students with citing sources. Over 70 percent have instructed students about plagiarism in class. Approximately a quarter have collaborated with other departments regarding plagiarism, conducted or attended workshops on plagiarism, worked with instructors to redesign assignments, or helped faculty with tracking possible instances of student plagiarism. **Michael Seadle (2011)** [7] in his study states that Plagiarism has become a salient issue for universities and thus for university libraries in recent years. In his paper the author aims to discuss three interrelated aspects of preserving plagiarized works: collection development issues, copyright problems, and technological requirements. Too often these three are handled separately even though in fact each has an influence on the other. The chief argument of this paper is that works of plagiarism and the evidence exposing them are complex objects, technically, legally, and culturally. Merely treating them like any other work needing preservation runs the risk of encountering problems on one of those three fronts. **Culwin, Fintan and Lancaster, Thomas (2001)** [8] describe the plagiarism issues for higher education and elicits that Academic institutions are finding they have to operate under a pro-active anti-plagiarism policy, where plagiarism is actively sought out as a serious breach of acceptable academic behavior. This paper considers the reasons that institutions need such a policy and the issues they should be aware of when implementing one. Many stakeholders are convinced that plagiarism is a serious academic problem and institutions will have to demonstrate that they are tackling it. The use of automated systems is expected to become more and more common, but they need to be informed by a greater understanding of how and why students cheat.

4. Identification of plagiarism in modern research

Satyanarayana (2010) states that it is well known that plagiarism begins very early is science. Jargin (2010) states that the plagiarism is common in Russia because of the state of their medical libraries. The digital revolution has put forth different challenges but accessibility and availability of study material have become made easy.

5. Types of Plagiarism [9]

To understand the basics of plagiarism, scholars have to undergo its grass root like definitions, types and factors contributing to plagiarism as plagiarism as of now is an overwhelming concept especially in academic activities. Some scholars have suggested its types which are substantial and help to scholars to understand the same. The detail of the same is as under:

- **Exact Copy Plagiarism**: Lifting a sentence or a substantial phrase from a source without using quotation marks to reference the source.
- **Modified Plagiarism**: Taking a sentence from a source and changing the order of a few words.
- **Style Plagiarism**: Copying an author's reasoning style or concept even when the texts are fully paraphrased.
- **Metaphor Plagiarism**: Copying someone else metaphors in describing a particular subject.
- **Idea Plagiarism**: Articulating another person's novel idea or solution as though the same is one's own.

6. Factors contributing to Plagiarism

Many studies have been explored these factors. Love and Simmons (1998) identified two broad factors influencing plagiarism, based on extensive interviews with masters' degree students [11]:

(1) External contributing factors:

- Pressure (grade pressure, time pressure, task pressure); and
- Professors.

(2) Internal contributing factors:

- Negative personal attitudes;
- Lack of awareness; and
- Lack of competence.

Scanlon and Neumann (2002) [10] suggested six factors contributing to the incidence of plagiarism: lack of awareness, personal attitudes, availability of internet resources, pressure, institutional features and lack of competence.

- Lack of awareness
- Personal attitudes

- Internet facilities
- Lack of competence
- Pressure: task, time, and family pressures are all acknowledged as potential contributors to plagiarism.
- Institution: Cheating and plagiarism continue to have increasing exposure in universities.
- Plagiarism is not always a copyright violation. Plagiarism can occur when a work no longer has legal protection. The connection between plagiarism and copyright can mean that the rights holder has legal resource via copyright law, but for most students and scholars, the consequences of plagiarism are harsher; expulsion for a student and loss of a job for others. The precise penalties vary from university to university and country to country.

7. Librarians' role to combat with Plagiarism

After undergoing the concept of plagiarism, it has been observed that the librarians role is indispensable to address the issues and challenges of plagiarism. With the emergence of latest technology the concept of plagiarism has become more complex and overwhelming which needs utmost attention. In India the concept is on introductory level but in some countries many example can be seen which can feel that the same is on maturity level e.g. the former president of USA Mr Barack Obama was confronted by the fact that some of his speeches had taken material from Devil Patrick, the Massachusetts Governor. Obama admitted and acknowledged his source. Undoubtedly, in Indian academics, the plagiarism has been discussing a lot on plagiarism but implementation part is partial achieved so far. Even the same is introduced up to Doctoral theses level only. In addition, limited educational institutions are having the detection tool due to budget constraints and unawareness of the consequences. It is the personal observation of the author that scholars are not taking it seriously; they feel that it is a victimless crime. Moreover, at the time of their final submission, they undergo to check the status of plagiarism. Further, if research work is plagiarized, the concerned scholars do manipulate the system due to time constraints and in hurry-worry; they submit the work and award their degree. The interesting thing is that the supervisors are also not taking it seriously. To combat with these issues, the librarians can play the following role which might be helpful for research communities:

- **Orientation Program:** under this activity, the librarians orient and aware the new students and research scholars about the library collection, use of library material, membership rules and borrowing privileges as per enti-

tlement. Now, they must discuss in brief about the plagiarism its basics, definitions and types and remedies so that from initial stage, the scholars may think about plagiarism.

- **Organize workshop especially to discuss about Plagiarism**: This is the demand of the time to organize workshops time to time on plagiarism within the campus and remotely through Information and communication technology by the librarians so that the same may be discussed thoroughly and get familiar from starting of their research activities and activate their senses about its remedies.
- **Citation style**: proper citation and attribution is the best remedy for plagiarism. As per the observation of author and previous studies that majority of scholars prepare fake list of citations which is the main cause of plagiarism. In addition, the scholars prepare the list of citation after completing the writing work. The librarians role is to train the scholars about how to prepare a proper citation list and guide them to avoid the fake citation which may create trouble in future. Librarians can train the scholars of their institution and through ICT they can deliver the expert lecture on citation.
- **Workshop on paraphrasing**: this is not an easy task. Paraphrasing is an art and very important activity in theory building. A good paraphrasing may avoid the plagiarism in any research activity. With the help of the experts, the librarians can organize the workshops for the scholars, thereby scholars may learn the techniques of technical writing and paraphrasing, if require.
- **Procure detection tool**: Numerous tools are available in the market. Some are offering their services free of cost and some on payment basis. However, free detection tools access is limited for few text and pages and take long time to prepare the final report of similarity index after uploading the document(s). In this critical situation, librarians can suggest the parental organization for suitable detection tool whether available on payment basis or free of cost as maximum academic institutes cannot afford the services of detection tools on payment basis. However, in India the INFLIBNET Centre is offering the services of anti-plagiarism free of cost through URKUND but only to those institutes which are established under section 12(B), 2f. Therefore, to overcome from this problem, the GOI has to take the initiative to provide the anti-plagiarism software on subsidize price and make it

mandatory for each and every institution whether school, college, institute, and university, to procure the same. In this whole process, the librarians role is substantial.

- **Policy framing on plagiarism:** So far no system is perfect to detect the plagiarism perfectly as detection tools show only the text similarity. However, plagiarism is not only the text similarity only. Suppose, an idea published in Chinese language and someone copy the same exactly and publish in his/her own name in another language. In that case, no system can detect the idea plagiarism. Nevertheless, the concerned scholar may be trapped any time due to availability of material in public domain. Therefore, the institution policy will play a fundamental role to overcome from the same. Librarians must come forward and help the organization to frame a sound and seamless policy on plagiarism so that scholars may feel comfort during their research activities and conduct plagiarism free research.
- **Fostering academic integrity**: through orientation programs, the librarians can make realize to scholars that their education cannot be based unethical behavior. Ethics are important for many reasons, at least of which is that being caught doing something dishonest.

8. Conclusion

Although lib service is given to the needs towards preventing plagiarism but librarians know that any campaign against plagiarism cannot be based solely on detection. The proper education of students towards plagiarism should be the librarians main goal. Majority of the academic institutions and their scholars are not aware with this concept. Moreover, they feel that when they have acknowledged the original source of information or copied material, then there is no issue of plagiarism as the same is not cleared that how much copying data is acceptable. Majority of the academic institutions do not have any policy even they neglect the same. The librarians role is indispensable to address these queries. The concept stands a giant in front of the academic institutions. The scholars are being trapped day by day in absence of seamless plagiarism policy. Nevertheless, librarians are doing their good job and trying to aware the scholars at their own level. Librarians tell and train the scholars in order to copy the matter from other sources and how they can incorporate the same ethically in their research work.

References

1. Michael Seadle (2008),"Copyright in the networked world: plagiarism and its ambiguities", *Library Hi Tech*, Vol. 26 Iss 4.
2. Gallant, T.B. (2008), "Academic integrity in the twenty first century: a teaching and learning imperative", *ASHE Higher Education Report*, Vol. 33 No. 5, Association for the Study of Higher Education, University of Nevada Las Vegas, NV.
3. Brimble, M. and Stevenson-Clarke, P. (2005), "Perceptions of the prevalence and seriousness of academic dishonesty in Australian universities", *The Australian Educational Researcher*, Vol. 32 No. 3.
4. UTC Walker Teaching Resource Center (2006), "Academic integrity conference to cover more than plagiarism", available at: www.utc.edu/news06/academicintegrity.php (accessed April 30, 2017).
5. Abdalla, Taiseer, Naomie, Elfadil Eisa and Alzahrani Salim Salha (2015),"Existing plagiarism detection techniques", *Online Information Review*, Vol. 39 Iss 3 pp. 383 – 400
6. Gibson, Nancy Snyder and Fangman, Christina (2011),"The librarian's role in combating plagiarism", *Reference Services Review*, Vol. 39 Iss 1.
7. Michael Seadle (2011),"Archiving in the networked world: preserving plagiarized works", *Library Hi Tech*, Vol. 29 Iss 4.
8. Culwin, Fintan and Lancaster, Thomas (2001),"Plagiarism issues for higher education", *VINE*, Vol. 31 Iss 2.
9. Eisa, Taiseer Abdalla Elfadil, Salim, Naomie and Alzahrani, Salha (2015),"Existing plagiarism detection techniques", *Online Information Review*, Vol. 39 Iss 3.
10. Scanlon, P.M. and Neumann, D.R. (2002), "Internet plagiarism among college students", *Journal of College Student Development*, Vol. 43.
11. Love, P.G. and Simmons, J. (1998), "Factors influencing cheating and plagiarism among graduate students in a college of education", *College Student Journal*, Vol. 32 No. 4.
12. Satyanarayana, K. (2010), "Plagiarism: a scourge afflicting the Indian science", *Indian Journal of Medical Research*, Vol. 131 No. 3.

Use of Information Sources and Services by the Library Users of Central University of Haryana, Mahendragarh: A Study

Gaurav Srivastava

M. Phil. Scholar
Department of Library & Information Science,
Kurukshetra University, Kurukshetra, India
Email: gaurav.sri09@gmail.com

Deepak Kumar

Assistant Professor
Department of Library & Information Science,
Central University of Haryana, Mahendergarh, India
Email: ias.ahlawat@gmail.com

Nandini Sharma

PhD Scholar
Department of Library & Information Science,
Kurukshetra University, Kurukshetra, India
Email: Sharma.nandini14@gmail.com

Abstract: This study is a fruitful attempt to find as well as to look into the use of information sources and services by the users in the library of the Central University of Haryana, situated at Mahendragarh. The survey method was adopted to carry out this study with the sample size of 131 users and a structured questionnaire with close ended questions was prepared for data collection. The findings of this study highlight that a maximum number of users i.e. 103 (79.8%) visited the library for the purpose of issue and return of the books and 84.7% of the total users were used books as the information source while 50.4% users spent 0-1 hour in the library. It was found that 49.6% and 39.7% users were fully satisfied from the available information services E-resources in the library respectively. 57.3% users agreed that library staff provided help in finding books and other reading material available in the library and 42.7% users replied that they rarely seek any kind of help from the librarian in relation to any type of information sources and services available in the library.

Keywords: Information Sources, Information Services, Post-Graduate Students, CUH.

1. Introduction

Libraries are mainly meant to satisfy the various information need of the users and to accomplish these job information sources are the main tools and to disseminate

the available information to the users the help of various information services are taken. In the present era of information explosion when a huge amount of information is generated at each second simultaneously, the information need of the users is also growing at alarming rate. At this juncture, the role of library and librarian comes at the forefront as users look at them for fulfilling their information need because it is a herculean task for the users to get the exact as well as the accurate information from a huge bunch of available information.

We all know that information gets generated and a substantial bulk of it gets recorded. The recorded information is processed, organized, retrieved when necessary, and disseminated. Steps are also taken to preserve information. Newspapers, broadcasts by radio and television, communication by e-mail, fax and soon bear testimony to the fact that information is getting generated in the world every moment. Recorded information has a characteristic of accumulation (Santhi & Ravi, 2010). Thus information has been accumulating for thousands of years. The preaching's of Buddha which were recorded on stones during the reign of Asoka (3rd century BC) are still useful and provide valuable information of the period (Mangla, 1989).

2. Information: Concept and Meaning

It is very difficult to exactly define information. Perhaps the most explicit definition in the literature defines information as 'recorded experience that is used in decision making.' Information has now become a vital resource. According to Webster's Third New International Dictionary "Information as knowledge of a particular event or situation or as the knowle dge communicated by others or obtained through investigation". (Webster online English Dictionary, 2017) The forms of information which are commonly known or information can be used as Commodity, Energy, Communication, Fact, Data and Knowledge

3. About Central Library, CUH, Mahendergarh

The Central Library of the University was established in 2010 at the Temporary Campus in Government B. Ed College, Narnaul and shifted to the present location in August 2013. It is air-conditioned building equipped with all the latest ICT facilities. It is one of the liveliest place on the campus providing a safe, comfortable and friendly environment that enables learning and advancement of knowledge. It has the provision of a separate reading hall. (www.cuh.ac.in)

Central Library is having 23856 volumes in various subjects of knowledge to serve the academic community of the University. We have advanced our web

activities with the subscription of 8500+ high quality e-Journals being made available through E-ShodhSindhu consortium to teachers, students and research scholars. The Library also promotes Open Access e-resources. University Library endeavors to further improve all its efforts to facilitate right information to the right users at the right time. (www.cuh.ac.in/pdf/library_profile.pdf)

4. University Repository

Amarkosha

The Central library is in the process to design and develop 'Amarkosha' as the University Repository. This open access repository has been developed to collect, preserve and disseminate the research output (theses & dissertations, research papers, reports, etc.) of Central University of Haryana. (www.cuh.ac.in)

GyanPravah

A repository named 'GyanPravah' is also under development phase. This repository will offer offline e-learning resources which will be collected from IGNOU, CEC, NCERT, NITTTR and other regional sources. (www.cuh.ac.in)

5. Objectives of Study

1. To understand the users need regarding information sources available in their library
2. To check the awareness level of the users about the available information services in libraries
3. To augment the information sources for future, based on users views
4. To get the users feedback about the whole ambience of the library.
5. To know the users hope and desire from the library as well as librarians.
6. To better understand the researchers, as well as faculty members, demand in their respective fields.
7. To know and recommend changes in the role of librarian and library staff members according to ever changing user needs

6. Statement of the Problem

The whole study is based on to understand the users need regarding information sources and services available in the central university of Haryana. In the whole

process, it was observed that users were not much aware of the availability of the information sources and services in their library so in the whole exercise was also had a motive to understand their hope and demand to improve their awareness level regarding the information sources and services. Eventually, it was a cumbersome but at the same time valuable study to improve the user's perception, their awareness level as well as their overall view of the library.

7. Literature review

Quensenberry & others (2016) did a study on the impact of library resources and services on the scholarly activity of medical faculty. the respondents were asked how often they searched databases through the library, researchers found that PubMed was the most frequently used database, with all of the respondents using it a couple of times a year (13%), monthly (25%), weekly (56%), or daily (6%). Google was the second most, with users using it never (31%), a couple times a year (6%), monthly (9%), weekly (23%), or daily (31%). Similarly, Sami & Uppal (2016) presented the study which was focused on the analysis of awareness, usage, attitude and satisfaction of scientists regarding electronic resources in the library of IMTECH. They found that the resources with which all the respondents are satisfied with email (84.44%) fully satisfied and (15.56%) sufficiently, websites (73.33%) fully satisfied and (26.67%) sufficiently satisfied and e journals (53.33 fully satisfied and 46.67% sufficiently. Veena & Kotari (2016) examined the user's satisfaction in library facilities, resources and services of the students of SDM College Library, Ujire. They found that about 177 (59.0%) of respondents have the habit to visit the library daily, Very few respondents 18 (6.0%) of respondents point out that they visit library vary rarely. Majority 260 (86.7%) of respondents are highly satisfied with the collection of general books, followed by 39 (13.0%) respondents are not satisfied with the collection of general text Majority 210 (70.0%) are highly satisfied with the collection of text books only 14 (4.7%) are not satisfied. It was found that 160 (53.3%) respondents considered circulation services as excellent and 19 (6.3%) opined poor. Chandrashekara & others (2015) investigated the phenomenon of consistent computerized library services. This study investigated the researchers' perceived effectiveness, their satisfaction levels and expectations with the use of library computerized for their learning. Early studies suggest that several factors need to be studied to the effectiveness of computerized library services. The present study investigated different user's perspective it is observed that 72% exist with issue and returns, 42% with reservation of materials, about 51% with OPAC search services and 62% with new arrivals list for effectiveness. Around 63% of e-mail notifications, 72% with article alert services and 64% with a table

of contents services was very ineffective. Zhang (2015) performed a study on the use of library services by engineering faculty at Mississippi state university. He also tried to obtain input and suggestions from the faculty for library service innovation. Assistance from subject librarians is known to a significant proportion (83%) of the faculty members. Unsurprisingly, the faculty have a low level of awareness of some relatively new services, such as data management services (32%) and copyright consultations (46%). The Mississippi State University Author website currently serves as a small institutional repository. The survey finds that less than one-third (29%) of the faculty had heard about it. This suggests the need for better marketing strategies. Nikam (2014) presented a research article on attitudes of law university library users towards the use of Web OPAC in Karnataka. The percentage score for awareness derived from librarian influence and library programs are 38.8% and 21.3%, respectively, for the research university sample; and 21.3% and 18.6% for the non-research university. This indicates that research university library managers are quite possibly more proactive in promoting the service. A higher percentage score in the research university sample of 36.0% and 26.7% is shown for awareness due to other causes, the influence of friends and browsing the Internet, respectively; as compared to 32.5% and 21.3%, respectively, for awareness due to the same causes in the non-research university sample. Khan (2014) conducted a user study on measuring effectiveness and efficiency of an academic library's collection and services of the central library of Allahabad University. The motive of the study was to find out the purpose of visit to the library. The most popular service (70.51%), followed by the internet (29.49%), online databases/journals (26.92%), CAS (24.36%), and bibliographical services (16.67%). Patil & Pradhan (2013) performed a study on library promotion practices and marketing of library services and role of Library professionals. According to the authors the objectives of library promotions and marketing of library services was formulated as the basic objective behind library promotion and marketing of library services and products were to achieve high level customer's satisfaction, ensure the survival of their respective institutions and enhance the perceived value of the services and libraries could promote the use of the services and products but cannot make profit out of it because library is a social institution. Khan (2013) did a survey on users' perceptions of library's effectiveness which was a comparative users' evaluation of central libraries of AMU, BHU, ALU and BBRAU. Its main focus was on examine user perceptions regarding the level of satisfaction with library collections.46.9 percent of AMU faculty members use current periodicals whereas 67.9 percent use back volumes of periodicals, and just 26.7 percent use indexing/abstracting periodicals. Only 10.45 percent faculty members utilize indexing/abstracting periodicals. Responses from faculty members from ALU show that 37.5 percent and 40.63 percent use current periodicals and

back volumes of periodicals respectively. Mirza & Mahmood (2012) conducted a survey among users of electronic resources and services in university libraries of Pakistan. A five-point Likert was used to measure the satisfaction level of the users. 96 out of 800 (12%) respondents identified the need to market electronic resources and services; 93 (11.62%) stated that IT infrastructure was inadequate; 75 (9.40%) indicated a lack of IT skills among library staff in reader services; 55 (6.90%) pointed out that library users lack skills required in using these services; while 52 (6.50%) respondents complained about the discouraging attitude of library staff in helping them with the use of electronic resources and services. Wang & Tremblay (2009) did a study on the global library providing resources and services to international sites. Data from meetings and surveys of faculty and students at the Global College were collected and analyzed which showed that twenty-eight of thirty-two respondents reported Google (general search engine), six (18.75%) reported Google Scholar, and four (12.50%) listed Google Book. Another fourteen (43.75%) reported Questia. The twelve respondents (37.50%) who chose "Other" reported using JSTOR, LexisNexis, NOVEL, MSN, Wikipedia, and Blackle (Google Custom Search).

8. Methodology

This study is empirical in nature and involving assessment of the usage of information services and sources by the library users of the Central University of Haryana. A structured questionnaire was prepared to collect data from the library users of Central University of Haryana regarding the general information, use of information sources and services provided by the library. The questionnaire contains 23 questions in all including one open ended question regarding the suggestions. The investigator personally visited the Central University of Haryana, Mahendergarh for understudy and administered the close-ended questionnaires among the library users. Random sampling method was used to collect the data. The total 150 questionnaires were distributed among the library users of Central University of Haryana, out of which 131 filled in questionnaires were received back with the response rate of 87.3 percent. The collected data was analyzed using Statistical Package for Social Sciences (SPSS) software (version 20.0) and Microsoft Excel.

9. Data Analysis & Interpretation

In the present Section, analysis and interpretation of the total response of the study have been discussed. The analyzed data is presented in tabular form.

Table 1: Gender wise distribution of the users

Gender	No. of Users	Percentage
Male	75	57.3
Female	56	42.7
Total	131	100.0

In Table 1, Out of the total 131 users on whom this survey was conducted and there were 75 (57.3%) male users and 56 (42.7%) were female users.

Table 2: Frequency of library visits

Frequency of Visit	No. of Users	Percentage
Daily	74	56.5
Weekly	35	26.7
Fortnightly	11	8.4
Monthly	11	8.4
Total	131	100.0

Table 2 deals with the frequency of visit of the users in the library and the result were as follows that out of the total 131 library users, 74 (56.5%) used to visit library on daily basis, 35 (26.7%) visited the library on weekly basis, 11 (8.4%) users visited fortnightly and equal number of 11 (8.4%) users visited library on the monthly basis.

Table 3: Purpose to visit the library

Purpose	No. of Users	Percentage
Issue and Return	103	79.8%
Reading text books	69	53.5%
Use of internet	32	24.8%
Read Newspapers and Magazines	76	58.9%
Check information from varied sources	20	15.5%
Assignment Preparation	30	23.3%
Access to online database	8	6.2%

In Table 3, it was tried to enquire about the purpose for which library users used to visit the library and it was noticed that out of the total 131 users who were part of this survey process, 103 (79.8%) library users used to visit library for the purpose of issue and return of books, another 69 (53.5%) users visited library for the purpose of

reading text books ,next 32 (24.8%) users visited library to use internet, 76 (58.9%) number of users visited library for reading newspapers and magazines another 20 (15.5%) users main purpose was to check information from varied sources in library, 30 (23.3%) users went for preparing assignment in the library and at last 8 (6.2%) number of users the main purpose was to accessing online database.

Table 4: Time spend in library

Time	No. of Users	Percentage
0-1 hour	66	50.4
1-2 hours	42	32.1
2-3 hours	14	10.7
more than 3 hours	9	6.9
Total	131	100.0

In Table 4, here the opinion was sought from the users regarding how much time users spent on their per visit to the library and the results were as follow, 66 (50.4%) number of library users were inclined to spend less than 1 hour in the library another 42 (32.1%) users spent between 1 to 2 hours in the library, next 14 (10.7%) users used to spend between 2 to 3 hours in the library and finally only 9 (6.9%) users remained there in the library for more than 3 hours.

Table 5: Awareness about information sources

Information Source	No. of Users	Percentage
Books	122	93.1
Periodical	61	46.6
Newspaper	121	92.4
Magazines	105	80.2
Reference Books	70	53.4
Audio-Visual Materials	20	15.3

In Table 5, out of the total 131 users, 122 (93.1%) users were aware of the books available in the library, 61 (46.6%) library users were aware of the availability of periodicals in the library, 121 (92.4%) users were aware of the existence of newspapers in the library, 105 (80.2%) library users knew that magazines are also available at the library, 70 (53,4%)users were aware of the availability of reference books in the library and at last only 20 (15.3%) users were having an idea about the availability of audio visual materials in the library.

Table 6: Frequency of using information sources

Frequency	No. of Users	Percentage
Daily	37	28.2
2-3 times a week	67	51.1
2-3 times a month	11	8.4
Once in a month	16	12.2
Total	131	100.0

In Table 6, when the library users were asked about how often they use information sources in the library, it was found out that out of the total 131 users on whom survey was conducted, only 11 (8.4%) users used information sources in library 2-3 times a month then 16 (12.2%) users were inclined to use information sources only once in a month thereafter 37 (28.2%) users were of the opinion that they use information sources in the library on the daily basis and eventually it was found that 67 (51.1%) users disclosed that they use information sources 2-3 times a week.

In Table 7, the survey was done to find out the awareness level of the users about the various information services available in the library, here it was found that a maximum number of users 95 (72.5%) were about the Internet as the information service available in the library. Secondly, comes the Newspaper Clipping service, of whom 88 (67.2%) users were aware of it as information sources. Thirdly. 78 (59.5%) number of users were aware of Current Awareness Services available as information service in the library. Fourthly, 63 (48.1%) users knew about Reference Service next comes the category of users who were aware of Referral Services, here 38 (29.0%) number of users were there. With regarding Selective Disseminate Service, only 28 (21.4%) number of users were aware of the availability of this service in the library. At last comes the Document Delivery Service, about which only 27 (20.6%) users were aware of information service available in the library.

Table 7: Awareness about Information Services available in the Library

Information Services	No. of Users	Percentage
Reference Service	63	48.1
Referral Service	38	29.0
Internet	95	72.5
Newspaper Clipping	88	67.2
Current Awareness Service	78	59.5
Selective Disseminate Service	28	21.4
Document Delivery Service	27	20.6

Table 8 refers to the use of information services by the users in the library, here come the Internet Services at first place according to its use by the users of the library as the highest number of 73 (55.7%) users out of total 131 users preferred this service. Thereafter comes the Newspaper Clipping Service which was preferred by a second highest number of 67 (51.1%) users in the library. At third place comes the turn of Current Awareness Service, of whom only 59 (45.0%) number of users used it. Then comes the turn of Reference Service, which 49 (37.4%) number of users referred as information service in the library.15 (11.5%) number of users used Document Delivery Service available in the library. Next, comes the turn of users who preferred Selective Disseminate Service of which 12 (9.2%) users fall under this category. At last, comes to the Referral Service and this service was used by 11 (8.4%) number of users in the library.

Table 8: Use of Information Services available in the Library

Information Services	No. of Users	Percentage
Reference Service	49	37.4
Referral Service	11	8.4
Internet	73	55.7
Newspaper Clipping	67	51.1
Current Awareness Service	59	45.0
Selective Disseminate Service	12	9.2
Document Delivery Service	15	11.5

Table 9: Frequency of using Information Services

Frequency	No. of Users	Percentage
Daily	34	26.0
2-3 Times a Week	58	44.3
2-3 Times a month	16	12.2
Once in a Month	10	7.6
Never	13	9.9
Total	131	100.0

Now in Table 9, I tried to find out in detail that how often the users use information services in the library, the results were as follows, 58 (44.3%) users tend to use information services 2-3 Times a Week thereafter comes to the category of users who were using information services on daily basis and its number was 34 (26.0%) users. Now the users who used the information services 2-3 times a

month were 16 (12.2%) and the category of users who used information services once in a month were 10 (7.6%) correspondingly, it was found that there were 13 (9.9%) users who never used information services.

Table 10: Awareness about availability of E-resources

E-resource	No. of Users	Percentage
E-Book	85	64.9
E-Journal	73	55.7
E-Newspaper	79	60.3
E-Magazine	65	49.6

Table 10 deals with the awareness of users about the availability of E-resources in the library and the findings are as follow, highest number of 85 (64.9%) users were aware of E-books availability thereafter comes the category of E-newspaper about which 79 (60.3%) users were aware of its availability. When it was tried to find out the awareness of users about E-journal then the result was like 73 (55.7%) users were there under this category. Eventually, only 65 (49.6%) users were aware of E-magazines available in the library.

Table 11: Use of E-resources available in Library

E-resource	No. of Users	Percentage
E-Book	53	40.5
E-Journal	47	35.9
E-Newspaper	44	33.6
E-Magazine	29	22.1

Table 11 deals with the findings regarding the use of E-resources in the library here it was found that 53 (40.5%) users used E-books as E-resources, then in next category comes the E-journals, which were used by 47 (35.9%) users, 44 (33.6%) users were there who used E-newspapers and finally only 29 (22.1%) users used E-magazines in the library as a form of E-resources.

Table 12: Frequency of using e-resource in library

Frequency	No. of Users	Percentage
Daily	19	14.5
2-3 Times a Week	46	35.1
2-3 Times a month	12	9.2
Once in a Month	17	13.0
Never	37	28.2
Total	131	100.0

Here in Table 12, users were enquired about their frequency of using E-resources and the findings are as follow, out of the total 131 users on whom survey was conducted there were 46 (35.1%) users who used E-resources 2-3 times a week then, there were 37 (28.2%) users who never used E-resources then comes those category of users who used E-resources on daily basis, further, there were 17 (13.0%) number of users who used E-resources once in a month and another 19 (14.5%) number of users used E-resources on the daily basis and finally only 12 (9.2%) users used E-resources 2-3 times a month.

In Table 13, it was tried to find out the satisfaction level of users with relation to the availability of E-resources in the library in which it was found out that 52 (39.7%) number of users were totally satisfied with the availability of E-resources in the library, secondly comes those users who were moderately satisfied and their number was 36 (27.5%) another category of users were of highly dissatisfied and under this category only 19 (14.5) users were there, thereafter, 19 (14.5%) users were found who were dissatisfied with the availability of E-resources and at last only 7 (5.3%) users were of the opinion that they are fully satisfied with the availability of E- resources.

Table 13: Satisfaction with regard to availability of e-resources

Satisfaction Level	No. of Users	Percentage
Highly Satisfied	7	5.3
Satisfied	52	39.7
Moderately Satisfied	36	27.5
Dissatisfied	17	13.0
Highly Dissatisfied	19	14.5
Total	131	100.0

10. Discussion and Findings

The detailed description of findings of this study regarding the use of information sources and services by the library users is given below:

User's general perception about Information Sources and Services

1. In general, it was found in the survey that maximum number of users were the regular visitors of the library as well as aware of the information sources and services available in the respective library
2. An overview of the survey concluded that there were users of different nature when it comes to understanding their views regarding various issues related to them in the library.

Purpose of Library Visits by the Users

3. Maximum number of users i.e. 103 (79.8%) visited library for the purpose of issue and return of the books while only 8 (6.2%) number of users visited library to access online data base and it was also noticed that good number of users 76 (58.9%) used to visit library for reading newspaper and magazines.
4. It was observed during the survey that highest number of users i.e. 66 (50.4%) on whom this survey was conducted spent only 0-1 hour in the library and the least number of users 9 (6.9%) used to spend more than 3 hours in the library.

Awareness, Uses, Satisfaction level, Frequency of using Information sources

5. When it comes to checking the awareness level of the users regarding information sources, it was observed that maximum number of users i.e. 122 (93.1%) were aware of books as the information source and on the other hand only least number of users 20 (15.3%) were aware of audio-visual materials availability in the library, meanwhile there was presence of good number of users 121 (92.4%) whose awareness level regarding newspaper was high.
6. Now, the exercise was to find how many users use a different kind of information sources available in the library and the outcome was like majority of users i.e. 111 (84.7%) used books as information source in the library and the smallest number were of those users 6 (4.6%) who used audio visual materials as information source.
7. Here it was tried to find out how frequent the users were in using information sources in their respective library then it was found that majority number of users i.e. 37 (28.2%) were using information sources on a daily basis while only 11 (8.4%) number of users were using it 2-3 times a month.
8. Next comes the level of satisfaction of the users regarding information sources in the library, here the findings were as follow: 57 (43.5%) number of users were satisfied with using the information sources available in the library and surprisingly there was presence of 1 (0.8%) of users who were highly dissatisfied from the available information sources in the library

Awareness, Uses, Satisfaction level, Frequency of using Information Services

9. Here it was tried to find out the awareness level of the users regarding information services available in the library and the outcome was i.e. 95 (72.5%) number of users were aware of the internet and on the other hand only 27(20.6%) number of users were aware of Document Delivery Services available in the library
10. When it was tried to look into the various uses of different kind of information

services by the users, then it was noticed i.e. 73 (55.7%) users were using the internet as information service and on another hand, only 11 (8.4%) users were using referral services which were the least in the numbers

11. During the survey, it was enquired from the users that how frequent they use various information services and it was realized that maximum number of users i.e. 58 (44.3%) were using information services 2-3 times a week and it's just opposite was the minimum number of users who were using these information services once in a month and the number of these type of users was 10 (7.6%).

12. 65 (49.6%) users were found fully satisfied from the available information services in the library and there was also the minimum number of users i.e. 6 (4.6%) who were highly satisfied with the information services available in the library but they were least in numbers.

Awareness, Use, Satisfaction Level, Frequency of using E-Resources in the Library

13. Now we deliberated on various perspectives of e-resources and tried to find out the users viewpoint on this service provided by the respective library. Firstly, it was found that a maximum number of users i.e. 85 (64.9%) were aware of E-Books under the category of E-resources and the minimum number of users i.e. 65 (49.6%) were aware of E-Magazines.

14. Next, the focus was on to find out the number of users using a different kind of E-resources and here the result underscored that highest number of users i.e. 53 (40.5%) were using E-Books and the minimum number of users i.e. 29 (22.1%) were using E-Magazines

15. Under this category, it was realised that highest number of users 46 (35.1%) used to visit library 2-3 times a week for using E-resources in the library whereas least number of users i.e. 12 (9.2%) used to visit library 2-3 times a month.

16. When the users were asked to put their opinion on their satisfaction level regarding various E-resources available in the library, it was found that 52 (39.7%) users were satisfied from available E-resources in the library and in contrast only 7 (5.3%) users were under the category of highly satisfied users.

Role of Library Staff

17. Library staff plays an important role in providing library sources and services to the users so when users were asked to put their views on how helpful library staff was in providing help in finding books and reading material, it was disclosed that 75 (57.3%) users agreed that library staff provided help in finding books

and other reading material whereas 56 (42.7%) users disagreed that library staff provide any kind of help to them in finding books.

18. Librarian is the head of any library so he or she plays a vital role in any library, when the users were asked how often they seek help from librarian then surprisingly highest number of users i.e. 56 (42.7%) replied that they rarely seek any kind of help from the librarian in relation to any query related to library.

Problems Faced in the Library

19. The last query was about the problems faced by the users in using the library and here the results were found more promising as maximum number of users that is 69 (52.7%) were of the opinion that they did not face any problem in using their library and at the same time there were also 62 (47.3%) users who faced some kind of problems in using the library

11. Conclusion

During the study, it was observed that users were not usually accustomed to the available information sources and services in the library. Many of them were even unaware of the basic available information sources in their library, here comes the role of the librarian as he or she can explore the ways through which more and more users get to know about the available information sources and services in the library. The scenario was like that the users which mainly consists of university students were somehow oriented towards the nascent information in their respective fields, they were appreciating the role being played by the two assistant librarians in helping them out to get the information of their need. Moreover, it was observed that library authorities were more inclined to introduce more information sources and services in future and users were also satisfied with the available sources and services except the need to introduce more books of their respective fields.

The enhancement of the knowledge base, general awareness, as well as fulfilment of information needs of users, largely depends on the availability of the best available information sources and services in the respective library. Users in the library deserve to avail most nascent as well as detailed information on any subject through various means available in the particular library. As far as information sources are concerned, the focus must be on the quality preceded by the quantity and must be provided with the help of modern technologies like e-resources. If we talk about the information services then the majority of them

are made available by any good library. Somehow, these information services make the task of the user of retrieving any information more easy at the same time more and more steps are implemented so that maximum number of users can avail these services. These sources and services get more prominence if the library staff, as well as librarian itself, take this prerogative to spread out the usefulness of these information variables among the users. Eventually, the ambience of the library depends to the larger extent of the positive fusion among all the constituents of the library.

12. Suggestions

While conducting the survey among the library users of the central university of Haryana, mixed kind of reactions has come out from user's side. Based on those multiple feelings which have been vented out by the users, following suggestions are prescribed.

1. Firstly, there is need to overall increase the number of the books, journals, magazines, competitive books
2. More and more books on the respective disciplines should be made available.
3. There is a need to introduce more and more new software in the e-library. E-books and E-journals on various discipline should be made available
4. Arrangements of books should be in a proper way as users found that books of their respective disciple were lying on other shelves
5. Timings of the library should be changed, in other words, many users were of the opinion that it should be remained open for 24hrs.
6. There is a need to organize an orientation program for the new users as well as existing users as many users were found unaware about the services provided by the particular library.
7. Space is a major problem in the library so the library should be more spacious and seating arrangements should be made in a proper way.
8. Book shelves should be replaced as the existing shelves are not user friendly and there are prone to accidents anytime.
9. Library staff members need some kind of improvement in their behavior as it was found that many users were quite unhappy with their attitude.
10. More and more information sources should be made available as per the need of the users.

11. There should be separate space for research scholars in the library and steps should be taken to maintain complete silence inside the library.

References

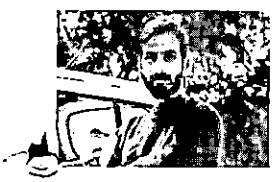
1. Chandrashekara. J. (2015). User's Perceptions of Effectiveness of Computerized Services at the VTU Research Center Libraries, India: A Study. Indian Journal of Information Sources and Services. 5:20-28.
2. Compbell, A. & Metzner, C.A. (1950). Public use of library other source information, University of Michigan, Journal of social Research. 45: 15-20.
3. Khan, A. M. (2013). Users' perceptions of library effectiveness: A Comparative users' evaluation of central libraries of AMU, BHU, ALU and BBRAU. International Information & Library Review. 44: 72-85. doi:dx.doi.org/10.1080/10572317.2012.10762917
4. Khan, A. M. (2014). Measuring Effectiveness and Efficiency of an Academic Library's Collection and Services of the Central Library, Allahabad University: Users' Point of View. The International Information & Library Review. 46: 31-40. doi:dx.doi.org/10.1080/10572317.2014.932607
5. Mangla, P.B. (1989). Information systems and services in India: Trends and Prospects. University News, October 9: 5-11.
6. Mangla, P.B, Kalia, D.R & Jagannathan, N. (2001). Library and Information Services in India: States and Union Territories. Delhi: Shipra Publications.
7. Mirza, M.S. & Mahmood, K. (2012). Electronic resources and services in Pakistani university libraries: A survey of users' satisfaction. International Information & Library Review. 44: 123-131.
8. Nikam, K. & Naik, D. (2014). Attitudes of law university library users towards the use of Web OPAC in Karnataka. The Electronic Library. 32: 825-833. doi:dx.doi.org /10.1108/EL-10-2012-0132
9. Patil, S.K. & Pradhan, P. (2013). Library promotion practices and marketing of Library services: A role of Library professionals. Procedia - Social and Behavioral Sciences. 133: 249-254. doi:dx.doi.org /10.1016/j.sbspro.2014.04.191
10. Quensberry, C. A. & Others (2016). The Impact of Library Resources and Services on the Scholarly Activity of Medical Faculty and Residents. Medical Reference Services Quarterly. 35: 259-265. doi:dx.doi.org/10.1080/02763869.2016. 1189778
11. Ranganathan, S. R. (1961). Reference Service. Bombay: Asia Publishing House.

12. Sami, L. K. & Uppal, G. K. (2016). Use of Electronic Information Resources in CSIR-IMTECH Library, Chandigarh: A Study. Indian Journal of Information Sources and Services. 6: 13-18.
13. Santhi, K.V. and Ravi, C. P. (2010). The use of effective resources among the faculty members of the premier educational institute of Tamilnadu. Programme. 30: 215-225.

Authors' Biography



Gaurav Srivastava, a St. Stephens' Graduate is presently pursuing Master of Philosophy in Library and Information Science from Kurukshetra University, Kurukshetra. He has been awarded University Gold Medal in M. Lib. & Inf. Sc. by the said University.



Deepak Kumar is presently working as an Assistant Professor at Department of Library and Information Science, central University of Haryana. He has 7 research papers, 3 full conference paper and one book chapter in his credit and awarded Junior Research Fellowship by University Grants Commission. He obtained Master of Science in Geography, M. Lib. & Inf. Sc. and M. Phil. (Library & Information Science) from prestigious Kurukshetra University and awarded Gold Medal and presently pursuing Doctorate from the said University. He is a life member of Indian Library Association and Haryana Library Association. He has been awarded Media and Information Literacy and Intercultural Dialogue (MILID) certificate by UNESCO and Athabasca University, Canada. He has also been awarded "How to Scale Social Impact" certification by Hass School of Business, University of California Berkeley.



Nandini Sharma is presently working as a Librarian at Bhagwan Parsu Ram College Kurukshetra. She has obtained M. Phil (Lib. & Inf. Sc.) and M. Lib. & Inf. Sc. Form Kurukshetra University and currently pursuing PhD form the said University.