

Role of University Libraries in Promoting the Digital Literacy: The Indian Perspective

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Abstract. *Information has attained the status of an important resource for the overall growth and prosperity of the nations. Present paper highlights the importance of information in higher education and deliberates upon the role of libraries in higher education. Application of information and communication technology in libraries has transformed libraries from the storehouses of knowledge to the service oriented institutions concerned with providing easy accessibility to information available in multiple formats. Major Initiatives taken by Infflibnet are highlighted in the paper with emphasis on digital literacy. The role of libraries in promoting digital literacy and the methods and methodologies applied by libraries for promoting digital literacy is the feature of the present article.*

Keywords: Information, Libraries, Infflibnet, Digital Literacy, Indest

1. Introduction

Information in the contemporary societies has attained the importance of an important resource essential for overall progress and prosperity of the individual, communities and ultimately to whole societies at local, regional, national and global level. Information as such is a dynamic and unending resource that affects all disciplines and all walks of life. Due to such importance of information as a resource, different efforts are conducted at different levels to make this resource easily accessible to all the individuals on the planet earth. Whether an individual is associated with the education sector, agricultural sector, economic sector, defense sector, science and technology sector, medical sector, legal sector or any other sector he/ she is using information. Information has become the dividing factor in determining the progress and prosperity of nations. We see the emergence of terms like information rich and information poor nations in the world. Societies that actually have realized the importance of information and are using it in abundance and not only using but also producing and generating information in huge amounts are labeled as information societies. In order to make information easily available to the individual, Information and Communication Technology (ICT) is playing a very important role. ICT has developed to such a stage that it has given access to information at the fingertips. UNESCO defines Information Technology as “*The scientific, technological and engineering disciplines and the managerial techniques used in information handling and processing; their applications; computers and their interaction with men and machines and associated social, economic and cultural matters*” (Peltu,1982).

India has been a developing nation ever since her independence in terms of social, economic and political backgrounds. With every remarkable achievement, the nation moves one step ahead towards a continual progress. Education sector in India has bloomed during recent past because of the policies and strategies of the government of India particularly on the integration of technology in education. ICT is applied in the higher educational institutions like universities and colleges in achieving excellence in providing qualitative education to the inhabitants of these institutions. ICT is applied by faculty members for teaching purposes; researchers use it for conducting different activities related to research and students of both graduate and post graduate level use it for learning new things from the universe of knowledge.

2. Libraries in Higher Education: Role and Importance

Libraries have been regarded as important organs of any educational system from time immemorial in all parts of the

world. Some call these as rich springs of knowledge that irrigates the field of education. Libraries have a significant role in the preparation of dynamic future leaders by offering effective and efficient services so that users can learn the process of how to enter methods of higher research oriented studies gradually. In fact, libraries are regarded as the hearts of modern institutions of higher education. The principal function of a Library is to educate the educated. Education and library are two inseparable-indivisible concepts, both being fundamentally related to and co-exist with each other. One cannot be separated from the other, and the existence of one is impossible without the other. None of them is an end in itself; rather both of them together are a means to an ultimate end. One dies as soon as the other perishes. One survives as long as the other exists. *This* interrelation, *this* co-existence, *this* dependence of one upon the other have been coming down from the birth of human civilization to the posterity through a process of evolution in accord with varied needs, changes, and circumstances of various stages of human life. The library occupies an important position in the academic institutions, including universities, colleges, schools, etc. Their existence is meant for the cultural maturation of the humanity. Users' unsatisfied queries are satisfied here. Libraries store pearls of wisdom; embodies lifelong works of the great persons; embraces solutions to the problems that the man faces. People increase their knowledge; sharpen their intellect; develops insights into the various aspects of life. Keeping in view such importance of libraries in education sector, libraries are regarded as the beating heart of academic institutions. How sound the library is determining the health of the academic institution. It should be appropriate to mention here that the methods and fashions in education change from generation to generation but each generation uses the library as a means of realizing its aims and objectives; hence the library remains a great conservator of learning. An investment in a library is a permanent investment guaranteeing returns for centuries to come. In India, the role of libraries in higher education has been realized from very early times but after independence due attention was given to the growth and development of libraries in the higher education sector. In India the University Education Commission (1948-49) headed by Dr. S. Radhakrishnan describes that teachers must have the necessary tools for teaching purposes in the shape of libraries and laboratories as also the right type of students. According to him, "*The library is the heart of the University's work; directly so as regards its research work and indirectly as regards its educational work, which derives its life from research work. Scientific research needs a library as well as its laboratories, while for humanistic research; the library is both a library and laboratory in one*". The training in the higher branches of learning and research is mainly a question of learning how to use the tools, and if the library tools are not there how can the students learn to use them. The Kothari Commission report (1964-66) on education highlights the role of libraries in higher education in these words, no new university, college or department should be setup without taking into account its library needs in terms of staff, books, journals, space etc. "*Nothing could be more damaging to a growing department than to neglect its library or to give it a low priority. On the contrary, the library should be an important center of attraction on the college or university campus*". A library performs a crucial role in the educational process. While passing on to the youthful generation the distilled wisdom of the human mind it has evolved over the ages, the library sharpens the mind and clarifies concepts. It is the most durable bridge across time. A library should play a pivotal role through the following supportive functions viz. perspective plan, implementation of the plan, collection development, easy accessibility, freedom, user orientation, accountability vs. assessment.

The Indian education system is the second largest in the world and is perhaps the most complex in terms of its spatial outreach and profile of students and teachers in terms of their linguistic, social, cultural and economic background. It consists about 339 universities and about 17,500 affiliated colleges where millions of students enroll in higher education. University Grants Commission (UGC), Professional Councils, Central Government, and State Governments are playing major roles in enhancing the quality of higher education in the country. The UGC is responsible for coordination, determination and maintenance of standards and release of the grants to the universities and colleges. For popularizing ICT application in libraries associated with higher education UGC, has taken different initiatives. ICT has penetrated deeply in every facet of higher education. Whether it is teaching, research or extension activities of any university or college, ICT is playing an important role in all activities.

3. Impact of ICT on Libraries : Indian Perspective

The revolution of technology that allows people to transmit and receive information has opened a new age in the history of mankind. Different new concepts like e-commerce, e-content, e-books, e-journals, e-governance, e-learning etc.

have emerged in the recent past. These new ideas have proved their worth in promoting education both formal as well as non-formal forms and even support lifelong learning processes. Libraries have long sought technological aids to facilitate and enhance their quality in attaining their objectives, missions and targets. The mission of libraries is to serve their clientele by providing the right information to the right user at the right time in the right amount and in the right form. For achieving these mission libraries are utilizing different technologies for performing different house keeping operations like Acquisition of information sources, Classification and cataloguing of information sources, Circulation, Stocktaking/ Verification, Serial Control and overall administration and management of libraries and information centers. Technology is also applied in delivering different information services to library patrons in an effective and efficient manner. Because of the application of ICT libraries are witnessing the transformation after transformation. In library science literature there are different concepts of the libraries like automated libraries, electronic libraries, digital libraries and library without walls (Virtual libraries). Thus we find the complete metamorphosis in the concept of libraries as was prevailing in the good olden days. Application of ICT has led to the creation of digital repositories. These revolutionary and evolutionary developments in the world of libraries have elevated basic tenants of libraries. Digital revolution brought about by digital technology has in a real sense revolutionized the concept of libraries and information centers.

These revolutionary trends have created a paradigm shift in the library philosophy. Some of these paradigm shifts are enumerated as under:

- Preservation to utilization
- Possession to Access
- Paper media to other media
- Print publishing to electronic publishing
- Isolation to Consortia
- Free services to Fee based services
- Manual process to Mechanical process (automation)
- Manual practices to Technological practices
- Traditional libraries to virtual libraries
- Polymedia to multimedia (Corall, 1995; Jagtar & Malhan, 2010; Myburgh, 2005; Thomas, Satpathi & Satpathi, 2010).

Adoption of ICT by libraries has converted libraries into service oriented institutions committed to achieve more and more satisfaction of the clientele by providing pinpointed, exhaustive and expeditious information. Academic libraries associated with higher education in India are reaping the fruits of the initiatives taken by University Grants Commission in the form of Information and library Network (INFLIBNET) in the year 1991.

3.1 INFLIBNET: Catalyst for Library Transformation in India

INFLIBNET is contributing a lot in popularizing the application of the digital revolution in libraries of higher education in India. Inlibnet has launched many programmes related to digital contents and libraries with higher educational institutions are making full use of these digital contents. Some of the programmes of inflibnet are:

3.1.1 INDCAT: Online Union Catalogue of Indian Universities

Indcat is unified online library catalogue of books, theses, journals etc., available in major university libraries in India. It provides bibliographic information about books, journals, theses etc., in all subject areas, available in more than 121 university libraries across the country. A web based interface is designed to provide easy access to the merged catalogues. IndCat is a major source of bibliographic information that can be used for inter-library loan, collection development as well as for copy cataloguing and retro- conversion of bibliographic records (Inflibnet, 2012). Libraries can take full advantage of this catalogue.

3.1.2 UGC-INFONET Digital Library Consortium

UGC-INFONET Digital library Consortium was launched in December 2003, by the then president of India Dr A.P.J. Abdul Kalam soon after providing Internet connectivity to the universities in year 2003, under the UGC-Infonet Programme. The consortium provides current as well as archival access to more than 7000 core and peer-reviewed journals and 10 bibliographic databases from 26 publishers and aggregators in different disciplines. The e-resources under the consortium covers almost all subjects including arts, humanities, social sciences, physical sciences, chemical sciences, life sciences, computer sciences, mathematics, statistics and like other subjects. This programme is entirely funded by UGC and executed by the INFLIBNET Center (Inflibnet, 2012).

3.1.3 N-LIST

The project entitled “National Library and Information Service Infrastructure for Scholarly Content (N-LIST)” is jointly executed by UGC-INFONET Digital library Consortium, INFLIBNET center and INDEST-AICTE Consortium, IIT Delhi. It provides:

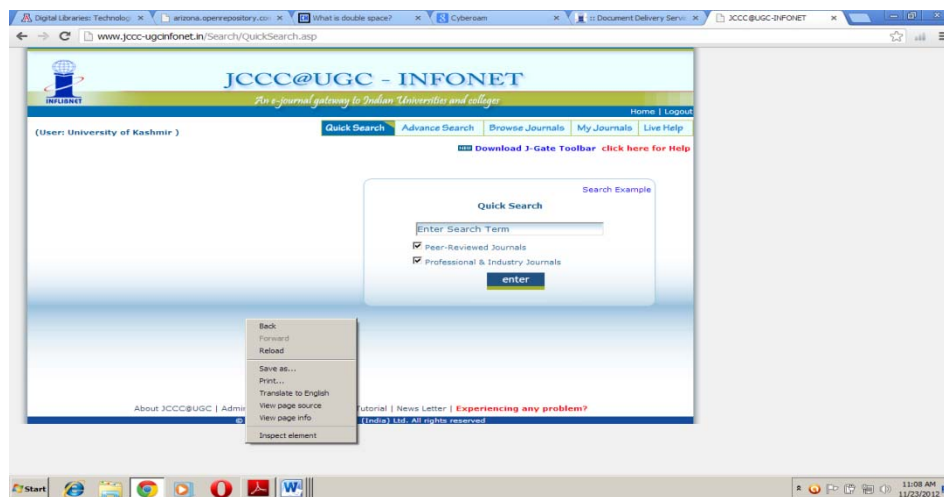
- i) Cross- subscription to e- resources subscribed by the two Consortia i.e. subscription to INDEST-AICTE resources for universities and UGCINFONET resources for technical institutions; and
- ii) Access to selected e-resources to colleges.



The N-LIST project provides access to e-resources to students, researchers and faculty members from colleges and other beneficiary institutions through server(s) installed at the INFLIBNET center. The authorized users from colleges can now access e-resources and download articles required by them directly from the publisher's website once they are duly authenticated as authorized users through servers deployed at the INFLIBNET Centre (Inflibnet2012).

3.1.4 Document Delivery through JCCC

INLIBNET has initiated interlibrary loans (ILL) and document delivery services from the comprehensive collection of subscribed journals under JCCC@UGC- INFONET. JCCC (J- Gate Custom Content for Consortium) is a virtual library of journal literature created as a customized- journals access gateway and database solution. It acts as a single point access to the journals subscribed currently under both UGC-INFONET Digital Library Consortium as well as university libraries designated as Inter-Library Loan (ILL) centers besides index to open access journals. INFLIBNET has designated 22 libraries to fulfill ILL request of the users, affiliated with 149 universities covered under UGC. The ILL libraries together subscribe for 2000 plus journals that is not available through consortia. Universities can request for articles from the journal holdings of those libraries wherever they find useful articles in JCCC search, that are not available in that library (Inflibnet, 2012).



3.1.5 Software for University Libraries (SOUL)

SOUL is a state-of-the-art integrated library management Software (ILMS) designed and developed by the INFLIBNET center and is based on the requirements of college and university libraries situated in India. It is user friendly software developed to work under client-server environment. The software is compliant with international standards for bibliographic formats, networking and circulation protocols. The software was designed to automate all housekeeping operations in the library. The first version of software i.e. SOUL 1.0 was released during CALIBER 2000. The latest version of the software i.e. SOUL 2.0 was released in January 2009 (Inflibnet, 2012).

3.1.6 OJS @ INFLIBNET

Open Journal Systems (OJS) is an open source solution developed by the Public Knowledge Project through its federally funded efforts to expand and improve access to research. OJS, INFLIBNET offers a platform to host their journals. The OJS is designed for managing and publishing Scholarly Journals online. There are fourteen journals available through OJS on INFLIBNET website (Inflibnet, 2012).

3.1.7 Shodganaga@ Inflibnet

Theses and dissertations are known to be the rich and unique source of information, often the only source of research work that does not find its way into various publication channels. Theses and dissertations remain an un-tapped and under-utilized asset, leading to unnecessary duplication and repetition that, in effect, is the anti-theses of research and wastage of huge resources, both human and financial. Online availability of electronic theses through centrally-maintained digital repositories, not only ensure easy access and archiving of Indian doctoral theses but will also help in raising the standard and quality of research. This would overcome serious problems of duplication of research and poor quality resulting from the "poor visibility" and the "unseen" factor in research output (Inflibnet, 2012).

3.2 INDEST-Catalyst for Quality Technical Education

The Ministry of Human Resource Development (MHRD), Government of India has realized the importance of establishing a consortium for providing easy access to the electronic resources in the discipline of engineering and related subjects. On the recommendations of the expert group appointed by the ministry under the chairmanship of Prof. N. Balakrishnan, MHRD established Indian National Digital Library in Engineering Sciences and Technology (INDEST) and provided funds for subscribing electronic and digital resources for institutions including IISc, IITs, NITs, IIMs etc through the consortium headquarters set-up at the IIT Delhi. A good number of institutions are participating in this consortium (Indest, 2012).

These efforts are all focused on creating a digital academic environment in India so that there are more chances of cooperation and collaboration in achieving the mission of creating India as a knowledge based country as envisioned in A. P. J. Abdul Kalam's vision 2020. This vision and the efforts taken at different levels in India can bloom when all concerned with higher education whether students, researchers or even the supporting staff are well versed with the

basic aspects of this digital revolution. Thus there is need of launching digital literacy programs / missions at different levels in the country.

4. Digital Literacy: What it means?

Application of Information and communication technology in different fields has brought about tremendous positive changes in all spheres of life whether the education of the individual, economical development of societies, technological advancement or any other such sectors existing in the societies. Information is available in multiple formats like text, graphic, audio or video etc. In the contemporary world one can have access to all these formats simultaneously. However, information can be exploited optimally when the user of the information is well versed with the skills and knowledge of using these formats. This competency of using the state-of-the-art technology concerned with information is the basis of what is called as digital Literacy. Digital literacy is the ability to effectively and critically navigate, evaluate and create information using a range of digital technologies. Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information requiring both cognitive and technical skills (ALA, 2012). Digital literacy is the marrying of the two terms digital and literacy; however, it is much more than a combination of the two terms. Digital information is a symbolic representation of data, and literacy refers to the ability to read for knowledge, write coherently, and think critically about the written word. Research around digital literacy is concerned with wider aspects associated with learning how to effectively find, use, summarize, evaluate, create, and communicate information while using digital technologies. There are four dimensions involved in the '*process*' of digital literacy:

1. Operational: The ability to use computers and communication technologies.
2. Semiotic: The ability to use all the languages that converge in the new multimedia universe.
3. Cultural: A new intellectual environment for the Information Society.
4. Civic: A new repertoire of rights and duties relating to the new technological context.

Thus Digital Literacy is represented as under:

Digital Literacy = Digital Tool Knowledge + Critical Thinking + Social Engagement.

Characteristics of digital literacy are:

- It supports and helps develop traditional literacies
- It's a life long practice
- It's about skills, competencies and critical reflection on how these skills and competencies are applied.
- It's about social engagement.

4.1 Digital Literacy: Why?

In the present Indian society, we find that there is a wide digital divide among the people. A large number of the population is living below poverty line and are not having access to the technology. Then there are digital natives and digital immigrants. Those who were born in the digital environment are well versed with the technologies and the one who was born earlier is facing problems in adopting technologies. So this big divide among the individuals in their use of technology is the basic factor for launching different digital literacy programs in the community. The ultimate objective is to produce digital literate personalities who can use and produce information for the overall progress and prosperity of the nations. Thus there is a need for digital literacy in the contemporary society.

4.2 Features of Digital Literate Person

In the words of the American Library Association (ALA, 2012), a digital literate person is possessing following features:

- a) Possesses the variety of skills – technical and cognitive – required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats;

- b) Is able to use diverse technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information;
- c) Understands the relationship between technology, life-long learning, personal privacy, and stewardship of information;
- d) Uses these skills and the appropriate technology to communicate and collaborate with peers, colleagues, family, and on occasion, the general public; and
- e) Uses these skills to actively participate in civic society and contribute to a vibrant, informed, and engaged community.

Thus a digital literate person is competent enough to handle and manage digital information in an effective and efficient manner.

5. Role of Libraries in Promoting Digital Literacy

Libraries are the democratic institutions concerned with promoting scholarship by providing easy access to the information existing in whatever format. Libraries have tried their best to adopt the technological or any such developments for ensuring easy accessibility to information required by the patrons. In order to make the users of information well aware about the different sources of information in different formats and about the services libraries are providing, awareness programs in the form of user education are conducted by libraries. In user education programs multiple methods are adopted in creating awareness programs like

- a) A lecture method where library professionals deliver lectures about the services and information sources available in the library both in print and digital formats. Library and information professionals are supposed to avoid technical jargon and make their lectures as simple as possible for their audience.
- b) Practical orientation in which users of the library are provided with opportunities to practically observe and have practical experience in exploiting different sources of information, tools available in libraries and the services provided by the library. How to use digital and analog resources and services by the users optimally is the focus of such programs.
- c) E- Learning methodology: Library professionals use the internet and allied technologies for making users competent enough in exploiting the services and resources optimally. Exposure to web 2.0, library 2.0 and like other technological applications can be taught to users through e-learning mode.
- d) In order to create information literate users library professionals are also publishing different literature or creating their own websites having information about the library activities and services offered by the libraries. Users by going through this information can come to know the ways and means they will adopt to become information literates.

6. Conclusion

Library and information centers have become important channels for disseminating the information available in multiple formats to those who are in need of information. Libraries have adopted ICT for achieving the mission and are witnessing a metamorphosis. There are digital libraries and digital repositories now in plenty available and accessible to the users of information. Application of ICT has changed the role of librarians from Caretaker to gatekeeper of information. Librarians are no more storekeepers but are known by name cybrarians who play a very important role in exploiting web based resources available on the internet. Librarians are supposed to serve as “creators”, “collectors”, “communicators” and “consolidators”(Moore *et al.* , 1998). Keeping in view these new roles of library and information science professionals, it is hoped that in the India academic world will achieve new heights and will contribute a lot for the advancement of the universe of knowledge. Creating a community of scholars, students and faculty equipped with the information literacy competencies will definitely help India to come close to the Knowledge based societies.

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