Role of libraries in technical education

Rajnish Trivedi

SMU/ SMIMS Central Library, Gangtok, Sikkim, India

***Corresponding Author: Rajnish Trivedi**
Email: trivedirajnish1970@gmail.com

Abstract
Internet has become integral part of the library and it facelifted libraries as a global platform for knowledge sharing hub. Powerful searching tools and technique have emerge in library sector such as internet search engine, information portals, multi format publisher and online digital library portal for researchers and students, google itself provides enough opportunities to become library a global player for the access of scholarly information, this article focuses on few general aspects e-learning with a modern digital library, OPAC, Circulation etc.

Keywords: Circulation, Resource sharing, Services, Catalogue, Circulation, Automation.

Introduction
Libraries are the soul of any research or academic institution. They form the most vital forum of education, especially in the field of technical education. Due to the rapid pace of development taking place in various fields of science and technology (S & T) it become imperative for the libraries to remain up-to-date with the latest advances in technology so that the dissemination of information becomes efficient, quick, feasible, economic, accessible and useful.[1]

Education is important for every individual in a nation. It plays a vital role to change the stare of a country. No country could bring a revolution in it unless its everybody are educated enough to meet the challenges. Education makes a man realize about himself and his goals and how to achieve that goals.

Basically, Education is divided into three groups. The Education which teaches the concerns of a society is called Social Education. The Education which develops a personality inside a man himself is called Spiritual Education. The Education that concerns with the professionalism is called Vocational Education. The Technical Education comes under the branch of Vocational Education which deals practically in the field of trade, commerce, agriculture, medicine & Engineering.

Objective
The objective of the study was to assess the attitudes of Library professional and resources of library development towards the use of social media as a academic and research library and learning tools in the selected library across the country.

Libraries in higher technical education institutions
Libraries in higher technical education institutions have largely developed along with various institutions. These libraries are becoming knowledge centers. The libraries in these institutions are a distinct lot among special libraries as they serve the needs of specialized users and their nature is also an indicator of an academic library as it supports and supplements academic programs. Hence, they come in the category of special academic libraries. Such kind of library is an important resource of the academic community and helps its members for their self-development, fulfillment of curriculum requirements and for promotion of study and research.

Library of higher technical education institution is the main channel of bringing information to cater information requirements of the users. The overall functions of a library in technical education institution include building up a comprehensive collection of technical literature, to organize and provide access to the information sources with the help of a variety of tools, and retrieve the vast and continuously expanding technical knowledge through multifarious information services. Libraries are a vital component of higher technical education institutes and need to be equipped with proper infrastructure namely proper space and furniture to accommodate users; trained staff to provide services to the users for making use of the collections; optimum and appropriate collection to satisfy most of the needs of all the users; essential technological devices to help in speedy and efficient provision of services and so on. The present study was undertaken with a view to know the state of preparedness of the libraries in higher technical education institutes to satisfactorily cater to the needs of their users.[2]

The role of the library is necessarily dependent upon the educational objectives of the institution. Frequently, these are unstated or inadequate. Reference is made to some definitions of objectives for higher education and the consequences for libraries are discussed. The view is urged that libraries, and therefore librarians, should be treated as integral and active parts of the educational process and the latter be involved in course planning and development.
The role identified for libraries in traditional higher education has not been transferred to the thinking about the external mode of study.[3]

Services for academic libraries in the new era
Academic libraries' services have changed very fast in the last twenty years. Nowadays, electronic resources, networks

and the World Wide Web represent a large parcel of the library services. Academic librarians must manage staff, information in several supports and technical activities to produce quality services.

It is very clear that librarians must use management tools to run academic libraries' services. Quality and performance assessment of libraries is very important to manage academic libraries and information services, because the evaluation process produces data that can help librarians to make decisions and to improve services.[4]

The integration of documents in a library is the most important working framework of modern library for technical education. For this purpose the web 2.0 services is the most advance and highly applicable services. However the implementation of library evaluation model is not an easy task. It is necessary to break certain concepts and inertia and stimulate team work.

Evaluate services, in order to satisfy user's needs, implies complex attitudes, guided by a set of solutions that vary according to the context and to the specificity of each community. Dervin and Nilan[5] propose these solutions:

1. Centralization of needs definition and information usage
2. Implementation and redesign of information systems, making it more flexible and interactive
3. Technology adoption in order to improve information systems;
4. Guidelines description of information needs and usage;
5. Demand for the system or sources approached;
6. Service response to user needs;
7. Offered services satisfaction/dissatisfaction

The diversity in results relating to service popularity in a library can be attributed to the difference in time and location, but also to the experimental nature of many of the implementations. It appears, though, that RSS, IM, weblogs, etc are the most popular services.

RSS

RSS stands for "Really Simple Syndication". It is a way to easily distribute a list of headlines, update notices, and sometimes content to a wide number of people. It is used by computer programs that organize those headlines and notices for easy reading.[6]

IM

"IM" – short for "instant messaging" – is a real-time communication service between desktop computers.
Some IM tools even have "you've got mail" capability, where you can send messages while the other person is offline, and they retrieve it later like email[7]

Weblog

A weblog or blog, is a listing of text, images, or other objects that are arranged in a chronological order that first started appearing in 1998. Some examples of software and services that users use to create and start their own weblogs are Blogger, Manila, Movable Type, MySpace, LiveJournal, Radio Userland, TypePad, WordPress.[8]

Permalink

A permalink (portmanteau of permanent link) is a URL that points to a specific blog or forum entry after it has passed from the front page to the archives.[9]

Social Network

Alternatively referred to as a virtual community or profile site, a social network is a web site on the Internet that brings people together in a central location to talk, gossip, share ideas, share interests, make new friends, etc.

Impact of Internet on academic library services

Perhaps no other recent innovation has impacted the library profession to such a great extent as Internet. Not only is our world becoming an interconnected global community, but this early use of the Internet has changed the fundamental roles, paradigms, and organizational culture of libraries and librarians as well, which created profound impact on L&IS by offering new modes of information delivery and a vast information source. There is a continuing evolution of the roles and functions of libraries and librarians, which appears to parallel the growth of acceptance and use of the Internet by library professionals. The innovative use of Internet technologies enable us to reach both local and distant users much more easily and effectively than hither to possible.

Technologies such as email and Web provides tremendous opportunities for library & Inf. Scientists to deliver the information to the desktops of our users. Web offers significant advantage by integrating different library & information services with a common user interface offered by Web browsers. Realizing the potentials, many libraries are rushing to getting the connectivity.
The following listing will give an idea of which various functions of libraries may take advantage from Internet and Web technologies.

Acquisition

1. Correspondence with Book seller & Publisher.
2. Reminders, Price verification
3. Bibliographic details and downloading of bib. records etc
4. Ordering, billing
5. Bookshops are on-line e.g. amazon.com

Classification

1. Network resources (in place of conventional sources)
   a. available on the net
   b. subscribed or free or trial basis
2. Dewey Online
3. Maths. Classification System
4. Engineering Electronics Lib. Classification
5. Search engines – such as yahoo use DDC.

Collection Development

1. Ownership vs Access
2. Subscribe in print or e-form
3. Subscribe in print as well as in e-form
4. Pay-per-use
5. Consortial approach

Cataloguing
1. Cataloguing of network resources
2. Online Catalogues
3. World Cat (OCLC)
4. Web OPAC – web sites
5. MARC adds 856 field
6. OCLC Scorpian project- MARC & AACR2
7. Metadata standards- Dublin core

Circulation
1. Remote login
2. Status check
3. OPAC access
4. Reminder to users
5. User requests
6. Direct borrowing
7. ILL

Resource Sharing
1. Union Catalogue
   a. Access, adding, downloading
2. Access to databases over networks
   a. Ohionet, ILLINET, WLN, OCLC, BID (UK)
   b. Full text journals access etc

Services
1. ILL
   a. Document Delivery Service e.g. Ariel
   b. Reference / Inf. Services
2. CAS
   a. Recent additions,
   b. Contents pages
3. SDI
   a. From library collection (Lib. Catalogues)
   b. Databases
   c. Internet Sources
4. OPAC
5. Database access
   a. Bibliographical
   b. Full text
   c. Many vendors & organizations are moving to Internet (web) access

User Education
1. Through Email
2. Through Web
3. Setting Intranet[10]

The advent of IT and other communication technologies changed all means of information services and sources. The Internet has given the world numerous easy-to-use and inexpensive research tools. Internet is changing the way we view information sources. Information bundled in World Wide Web in the form of structured and non-structured sources create huge problem for professionals who are dealing with information. The shift in publication process takes place as individuals, institutions, publishers, professional associations, business houses and many others are publishing information on Internet. Electronic publishing is considered as the speedy, accurate and effective way of communication among academia and research community, and becoming a favorite idea among information professionals to experiment with. The library and information professionals have a vital role to play in organizing the information and bridging the information gap. Internet has become a part of library environment today. Internet for reference work in the library is gaining popularity. It can be successfully utilized for providing short-range and long-range reference service because various primary and secondary sources of information are available online from many sites. As
information professionals, we can arrange the sources on net as we come across, in a structured manner. These can be;
E-journals E-books
- Standards E-TDs
- Preprints - Library catalogue- Bibliographical Tools Share wares - Old books - News papers- Dictionaries - Magazines- Encyclopedias Databases
- Directories - Films- Maps - Technical reports- Audio/Video Proceedings
- Patents - Websites of Companies[12]

The importance of library services for academic study and research

Academic libraries have become new actors in the process of distance learning among other factors of education and research. Due to the new storage media and new channels for transmitting information, university libraries complete the formation of the universities. Libraries are reshaping its services; we speak about electronic references, full text data access, Web resources, that are integral part of university education in the electronic environment.

The option for an analysis of electronic library services for university study and research, has found a double meaning: a theoretical one, driven by the need for theoretical approaches, in the documentary area, in which the information produced changes of quality, quantity and structure, with consequences on the management process, but mostly a practical one, given that professions have undergone numerous changes and transformations, and the ability required by the new dimensions of services are complex. Electronic services in a information university structure are complementary to the electronic services of the university itself, determined in recent years to rethink its procedures for providing the educational process.

Through the very function, the university libraries provide access to information in conjunction with the Curriculum, assist users in the process of information

literacy and last but not least, are training centers for specialized personnel. Keeping the traditional elements of novelty the university library adds information, offering users new ways to information and documentation. It is rooted in recent years the expression" learn anywhere and anytime", which obviously leads to the thought of alternative information, communication and education. If the educational system promotes an 'education for all', aiming at training beyond geographical barriers, age, proposing options for study at a distance, the institutions of information at the university level will be forced and the current university education system is facing a fundamental problem: the diversification of information transmitted format but also with changes in content, aspect which leads to a new philosophy of education. Thus, an optimal structure of education must provide a curriculum with clearly defined learning objectives, consistent, counseling and library services. If the educational process allows adaptation of technologies should mention that not the same happens with the adjustment of context information and education. Web became first a mean of information and then support for students learning, the economic aspect playing a determinant role. Whether we refer at the traditional learning or the 'remote' and online learning education and information need the electronic component. With regard to future prospects of the libraries in the new technological context, we agree Ion Stoica's considerations: "The diversity of structures, quantity, different codes, novelty of technology forces the info documentary systems, regardless of size, and even more, networks, highlighting clear and systematic resources.

On the basis of educational plans, analytical programme, orientation of courses, textbooks, specialized treaties should not stand interrogation as: What kind of experts to prepare and with what capacity of coverage the information universe? as a condition for increasing the powers of its graduates with a view to becoming society.

All university libraries keep the traditional services of information, gradually adding elements of remotely electronic access. Such a feature is Web-OPAC (online public access catalogue), which users can access from anywhere: from the library or from a terminal connected to the web page. Connecting resources through a single interface has been possible because the Z 39: 50 protocol exchange, which subsequently allowed bibliographic data linking of full-text documents. Any user, teacher, student or researcher, who access bibliographic data in such a manner, can make other types of search on certain keywords, topic, author, title, area. Thus, a bibliographical structure can be organized by clear criteria.

It is the merit of a field benefiting from the power of both librarians and the automation specialists, and the advantage to those who, through their study and research fulfill the professional training. The online catalogue allowed unlimited access to data and documents without restrictions of space and time, librarians becoming content experts in search and the access, and libraries highlighting its missions through the quantity of documents and information through speed and quality of information: "The main concern of any contemporary info documentation structure is the need for information and study of users, regardless of the sources used and their status. The collection begins to play a secondary role.

The emergence of electronic documents has changed the relationship between the two institutions publishers-libraries, whose mission is to facilitate access to information regardless of how the book is presented, traditional or electronic, decisive being the issue of copyright and licensing for use.

Digital libraries are not limited to providing full-text documents, but have a much higher attribute: to allow access at international scale through hyperlinks to the services and digital products provided by other institutions.

Digitization of academic library

Digital conversion of library materials has advanced rapidly in recent years, promoting some casual observers to believe that everything of importance can be found on the World Wide Web in digital form. But instant access to all the world's wisdom is still more than a mouse click away. It is important to resist the urge to digitize everything in a library or archival collection and destroy the originals in a mad rush to save space or occupy a place on the cutting edge. Digitization is an excellent way of providing access to library materials, but the technology, in its current state of development, is not adequate for archival preservation. Digitization has proven to be possible for libraries, from and medium presently held by libraries, from maps to manuscripts, and moving images to musical recordings. The use of hardware and software for capturing an item converting it into bits and bytes, matched by a quickly developing set of practices for describing and retrieving digital objects, is giving form to the talk of a "library without walls." But such a virtual library has a very real price. Managers of cultural institutions and those responsible for policy matters related to digitization often find themselves struggling not only to understand the new technologies, but also, and more importantly, to grasp the implications of those technologies and to understand what digitization of their collections means for their institution, its patrons, and the public." This paper will provide an overview of the digitization of library material, explore the advantages and disadvantages of digitization, and explore some of the many issues involved in selecting and developing a digital library collection.

Digitization of materials may occur in both library and archival environments. In the case of archives, candidate materials for conversion often include unpublished materials such s correspondence or corporate records, as well as items as diverse as photographs, film and videotape, advertising flyers, train tickets, and handwritten manuscripts. In the discussion that follows the terms "library" and "archives" may occasionally be used interchangeably depending upon

the source material to which reference is being made, but the primary focus of this paper is on library digitization.[12]

What is Digitization

In its most basic sense, the term "digitization" refers to the conversion of materials that were originally created in another format into an electronic form. Conversely, this definition excludes materials that were initially created digitally, such as email communication. Technically, the process of digitization involves converting an analog image into its corresponding numeric values. The world "image" is literally true because the digital scanner creates an image of the original analog item, whether that item is a photograph, a word-processed document, or a handwritten letter. The digital image created by the scanner is stored in numeric form.[13]

Why Digitization?

It is often said that digital information is transforming the way we learn, the way we communicate, even the way we think. It is also changing the way that libraries and archives not only work, but, more fundamentally, the very work that they do.

One of the most important qualities of information in digital form is that by its very nature is not fixed in the way that texts printed on a paper are. Flexibility is one of the chief assets of digital information and is precisely what we like about text poured into a word processing program. It is easy to edit, to reformat, and to commit to print in a variety of iterations without the effort required to produce hard copy from a typewriter. That is why visual designers like computer-assisted design programs. It is easy to summon up quickly any number of variations of value, hue, shape, and placement to see, rather than to imagine, what different visual options look like. Furthermore, we can create an endless number of identical copies from a digital file, because the file does not decay by virtue of copying.[14]

Advantages of Digitization

Digital imaging projects offer unique advantages. Image quality can be quite good, and is often enhanced, with capabilities continuously improving. Flexibility of the digital material is another advantage. Since the data is not "fixed", as with paper or printed text, it is easy to reformat, edit and print.

Online resources serve local, national and international needs.

Providing accesses to primary material can help to "publicize" the material to other departments and peers, and to demonstrate the importance of the collections. The Special Collections departments may present the "jewels in the crown" from the research library.

Profound changes in professional attitudes, private and public funding, availability of image reproductions, and electronic communication technologies have resulted in museums and archival institution reevaluating their target audience.[15]

Technology Enabled academic library is the new learning paradigm

He scope of issue of access and delivery of higher technical education goes beyond the question of funding. Widening access to higher technical education is more than just an economic necessity.[16]

UNESCO,[17] for instance has related the issue with diversification of education, through diversification of:

1. contents to avoid monolithic model,
2. the types and paths of education, as regards systems and structures, so that they spread virtually throughout the life of each individual
3. the method and places of learning, notably for practical tasks

The New Learning Paradigm

To prepare knowledge workers and make higher education widely accessible, a new paradigm has been suggested with flexible, open, self paced, student centered learning based on collaborative two way processes. Therefore, there should be a gradual shift from standard education to customized service. Flexibility would permit the students to learn at a convenient time and place. And also allow them to define their own learning needs.

Hariharan has compared the two learning models in the following table[18]

Table 1

Traditional Learning Environment	New Learning Environment
Teacher-centered instruction	Student-centered learning
Single sense stimulation	Multi-sensory stimulation
Single path progression	Multi path progression
Single media	Multimedia
Information Delivery	Information exchange, Knowledge development
Isolated work	Collaborative work
Passive learning	Active inquiry based learning
Factual thinking	Critical thinking & decision making
Reactive response	Proactive planned action
Isolated, artificial context	Authentic, real-world context
Classical method of assessment: Testing of bookish	Test of knowledge, skills, problem environment

knowledge	
Geared to predefined jobs	Adaptable to new job requirement in a rapidly changing knowledge economy

Open learning, resource-based learning and e-learning approaches have been advocated which can address these requirements for academic library.

Open Learning

The term open learning is often used interchangeably with flexible learning. Both the terms are used to express an approach which provides students with the opportunity and options to take greater responsibility for their learning with provisions to meet individual needs. Open learning can be applied to technical education in the following learning situations.[19]

1. Conventional lecture situation
2. Small group unsupervised work
3. Laboratory classes
4. Independent study on/off site support
5. Group learning, and
6. Industry learning.

E-learning

An open learning environment enabled with Information and Communication Technologies (ICT) can be called e-learning environment.[20]

Broadly, ICT application can be used in the open learning environment in the following:

1. Course delivery or access to learning material
2. Tools for laboratory training
3. Evaluation tools: assignments, tests and quizzes
4. Tools and technology for development of learning material
5. Interaction, collaboration and development of learner communities for counseling and discussions
6. Library and information services: digital libraries
7. Assistive technologies for physically challenged, and.
8. Educational administration

Concerns and Challenges

From the point of view of institutions of higher technical education, the major concerns in implementation of open learning are:[21]

1. Cater to increasing and diverse student population
2. Nurture effective learning environment
3. Sustainability
4. Effective IT deployment and adaptation
5. Quality assurance Rationalization of contact time
6. Strengthen industry-institute linkage
7. Need-based curriculum
8. Support mechanism for special needs
9. Staff development for adjustments to new role

Major challenges in developing e-learning in academic library are- Technological, Infrastructure Development, Policy Making, Human Resources Development, Contents Development, and Managerial and Socio-economical issues.

Technological Challenges

Appropriateness, accessibility, handling, maintenance and information management have been mentioned as some of the technological challenges. The following may be the causes of Technological challenges:

Infrastructure Development.[22]

Socio-economic Challenges: The Digital Divide

Approaches

To overcome some of the above mentioned challenges in academic library of ICT services, following three approaches are suggested:

Synergistic and scalable use of technology for distance education as well as in-campus courses[31]

Hybrid model for delivery of distance learning programmes.

Networking and sharing of resources of academic library

Conclusion

As the nature of information access changes, one of the biggest challenges faced by libraries will be driven by a shift from content ownership which works at the level of an individual institution, to providing services which can only be created and delivered on a larger scale. "The individual library is being eroded", noted one participant, "librarians will have to work together in order to remain relevant".

As the amount of freely accessible information grows, collaboration and sharing of both discovery and support services will become increasingly relevant. Participants noted that this level of engagement is already happening. Librarians are already speaking with other institutions to work out how to share subject libraries or repositories.

Licensing content across consortia is a longstanding example of how the librarian's role will adapt to work at scale. Sharing resources will also enable librarians to focus energies on providing advice to users. "A research library is more like a research assistant," one librarian commented. Moving forwards, there will be a greater emphasis placed on providing overlay services both to institutions and between institutions.

Where librarians see future opportunities for continuing to add value, through for example managing metadata on institutional repositories for content published from their institution, there is an implicit shift in role – this is effectively a publishing function, making content available to be used by a community well beyond the library's own institution. This change was one which the participants felt that librarians have already embraced and see as an increasingly important role in the future, but it is also one which calls for different practices and perspectives.[23]

Source of Funding
None.

Conflict of Interest
None.

References

1. http://EzineArticles.com/661602
2. Vasishta, Seema: Status of libraries in higher technical education institutions: with special reference to deemed universities of North India. *Ann Libr Inf Stud* 2007;54:95-102.
3. Allen, G.G: the role of the library in higher education and the implications for the external mode of study: an Australian perspective, Higher Education 1982;11:531-42 http://download.springer.com/static/pdf/831/art%253A10.1007%252FBF00194418.pdf?auth66=1353472633_c14ea8851129f6302fe3febf7d7dbd06&ext=.pdf
4. Melo, Luiza Baptista & Sampio, Maria Imaculada Cardoso: Quality Measures for Academic Libraries and Information Services: Two Implementation Initiatives – Mixed-model CAF-BSC-AHP and PAQ-SIBi-USP http://www.iatul.org/doclibrary/public/Conf_Proceedings/2006/MeloSampaiopaper.pdf
5. Dervin, B.; Nilan, M. "Information needs and uses", Annual Review of Information Science and Technology (ARIST), New York, 21, pp. 3-33 (1986). http://www.iatul.org/doclibrary/public/Conf_Proceedings/2006/MeloSampaiopaper
6. http://rss.softwaregarden.com/aboutrss.html
7. http://netforbeginners.about.com/od/instantmessaging/a/What-Is-Instant-Messaging.htm
8. http://www.computerhope.com/jargon/w/weblog.htm
9. http://en.wikipedia.org/wiki/Permalink
10. IINFLIBNET Regional Training Programme on Library Automation (IRTPLA) 2004 INFLIBNET Centre, University Grants Commission, Ahmedabad-380009, India http://ir.inflibnet.ac.in/dxml/bitstream/handle/1944/279/Inf_5.pdf?sequence=1
11. Tomescu, Silvia: The importance of electronic library services for academic study and research. http://www.elearningeuropa.info/files/media/media16353.pdf
12. Chaurasia, Niraj Kumar: Digitization of Library Materials, University News, 44(30), July 24-30, 2006.p15.
13. Chaurasia, Niraj Kumar: Digitization of Library Materials, University News, 44(30), July 24-30, 2006.p15.
14. Chaurasia, Niraj Kumar: Digitization of Library Materials, University News, 44(30), July 24-30, 2006.p16
15. Chaurasia, Niraj Kumar: Digitization of Library Materials, University News, 44(30), July 24-30, 2006.p17
16. Chauhan, Buddhi P: Technology Enabled Technical Education in the new learning paradigm: Issues and perspectives in delivery and access, http://dspace.thapar.edu:8080/dspace/bitstream/123456789/49/1/Technology+Enabled+Technical+Education+shorter.doc
17. International Commission on Education for Twenty-first Century. Report: to UNESCO: Learning the treasure within. Paris, Unesco Publishing, 1996.
18. Hariharan, R. Information technology for teachning and learning. *Indian J Techn Educ* 2002;24(4):30.
19. Shukla, Jyoti Kiran. Open learning in technical education: Some conceptual issues. In Education India: the next millennium-report of the World Conference-New Delhi, 12-14 November, 1997, edited by Marmar Mukhopadhyay and other. Udang, Howrah, Institute of Education, Rural studies and Development, 1998;510-7.
20. Laurillard, Diana. Recommendation of National Committee of Inquiry in Higher Education (UK) In IT and Dearing: the implications for the HE: Colloquim proceeding, edited by Helen Beetham. London, CTI Support service, University of Oxford, 1997.
21. Shukla, Jyoti Kiran. Open learning in technical education: Some conceptual issues. In Education India: the next millennium-report of the World Conference-New Delhi, 12-14 November, 1997, edited by Marmar Mukhopadhyay and other. Udang, Howrah, Institute of Education, Rural studies and Development, 1998;510-17.
22. Chauhan, Buddhi P: Technology Enabled Technical Education in the new learning paradigm: Issues and perspectives in delivery and access, http://dspace.thapar.edu:8080/dspace/bitstream/123456789/49/1/Technology+Enabled+Technical+Education+shorter.doc
23. http://www.guardian.co.uk/higher-education-network/blog/2012/oct/25/open-access-university-library-impact

How to cite this article: Trivedi R. Role of libraries in technical education. *Indian j Libr Sci Inf Techno* 2019;4(2):54-60