Vision and the Changing Roles of the Future Academic Library Professional in the E-Learning Environment : Challenges and Issues

G. Thamaraiselvi
Librarian
National Institute of Technology
Tiruchirappalli, Tamil Nadu, India
thamarai@nitt.edu

Abstract

As the information technologies are changing day-to-day and growing at a tremendous speed, the knowledge society is becoming more complex, competitive and dependent on technological changes and information explosion. The need for e-information services to the users are also growing and becoming very essential. The impact of web based e-learning and teaching environment has influenced every facet of library and information services in academic libraries and providing new opportunities and challenges to the library professional for involvement in the knowledge based society including electronic and multimedia publishing, Internet based-information services, global networking, web based digital resources etc.

Librarians are charged with selecting and organizing resources and instructing patrons on how to locate and use these, and preserving information regardless of format or technology. The information revolution and the knowledge that is available on the Web have created new challenges to these traditional professional ethics. The emerging challenges of acquiring and providing access to electronic knowledge resources require librarians to change their role from traditional librarian to information scientist by learning and applying new skills to understand the evolving technologies to manage and provide quality on-line information service to the knowledge society. So the vision of the future academic library professional must be to create a World Class Networked Global Library and Information Centre to provide timely web based quality information service to the user in time in the e-learning environment. The future visions need for changes in academic libraries, trends and challenges before the library professional in the e-learning environment and the various changing roles of the academic library professional also have been discussed in this study.

Keywords: *Information Technology, academic Library Professional, Web Technology, Technology challenges, e-resources, e-learning environment.*

Introduction

The information atmosphere around the world is changing every minute and growing at a tremendous speed due to the emergence of the web based Information and Communication Technologies (ICT), globalization of networks and Internet. Hence ensuring and organizing access to educational materials in the electronic environment is an important factor in determining realistic requests for development and advancement of education. The information revolution and the pervasive thinking that everything is available on the Web have created new challenges to the traditional library professional ethics. Acquiring and providing access to electronic knowledge resources require library professional to change their role from traditional librarian to information scientist by learning and applying new skills to understand the evolving technologies to manage and provide quality on-line information service to the patrons of the knowledge society. Since, almost all the educational institutions, organizations, universities and academic associations have created their own websites with the digital repositories on Internet, the global networked environment has paved the way and opportunity to e-literacy. The impact of web based e-learning and teaching environment has influenced very much on every facets of library and information services in Academic Libraries and providing new opportunities and challenges to the library professional.

Objectives

The objectives of this study are given below:

1. The primary objective of this study is to analyze and explore the changing vision and the roles of future academic library professionals accordingly to meet the changes and challenges in the e-learning environment.

2. To document the various changes and challenges evolved before the academic library professional in the e-learning environment

3. To define and explain the concept of e-literacy and digital learning environment in academic

institutions which changes the role of library professional to the real situation.

4. To discuss about the various skills needed for the library professional to meet the present online and digital needs of the user.

Vision of the Future Academic Library Professional

Technology will continue to change, and libraries and librarians have to use the changing technology to provide the best access and service to their patrons. Electronic information creates challenges for the library community at its very foundation, moving it away from the traditional paper-and-print format to an ethereal world of circuits and connectivity. The library is no longer defined simply as a building or a physical repository that houses information.

So the essential future vision of the academic library professional to achieve the necessary information-transformation and to face the digital information needs of the user should concentrate on the following:

● The vision of the future academic library professional must be to create a World Class Networked Global Library and Information Centre to provide web based quality information service to the user in time in the e-learning environment.

● The librarians must change the library environment as pathways to high quality information in a variety of electronic media and information sources.

● Library professional must assert their evolving roles in more pro-active ways, both in the context of their academic institutions and in the context of increasing competitive markets for information dissemination and retrieval.

● *The vision for the 21st Century librarians* must offer electronic teaching and learning both to guide and beckon the library profession as education leaders. They should shape the library programme and serve as a tool for library media specialists to use to shape the learning of students in the academic institutions.

Review of Earlier Literature on Challenging Roles of Librarians in the E-Learning Environment

The concept of a digital library and its usages for faculty at the university and the changing role of librarians in creating and managing digital libraries are described by Joseph Janes, Assistant Professor at the University of Washington Information School. He also presented a case study of the Internet Public Library *<http://www.ipl.org/>* developed between 1994 and 1995 by the then School of Information and Library Studies at the University of Michigan which illustrated how a digital library can support education[9].

Christine Dugdale in her presentation on Electronic Library System which offers access to electronic reservation systems, current awareness service, has shown how short loan collections can provide access to a great quantity and range of material for a larger distribution of learners[6].

Bonk (2004), reviews the trends in online e-literacy programmes in colleges and universities both in the United States and around the world, which describe the desire of teachers to empower the learner, the power of future developments such as simulations and virtual world technology in education[4] .

Karen Jurasek says that libraries must uphold professional standards and a commitment to service[11] Also he describes that along with its services, resources, and technology, the library is both a physical and virtual space for the 21st century. He also concludes that the academic library professional must develop a virtual electronic learning system to enhance the user's knowledge and to accommodate an increasingly diverse group of users.

John MacColl's presentation was on virtual learning environments (VLEs) and the aim of his project was to integrate open library resources and closed learning environments. Also he describes that since Virtual Learning Environment contain links to resources, both licensed and free, overlaps with electronic reserve systems, and has a dynamic linking potential with library, librarians should be involved in creating and maintaining VLEs as resource managers in this new environment of web-based courses[17].

Kasperek, Johnson, Fotta, and Craig, found that "…continued involvement with play participants outside the library increased student comfort level both with the library in general and the librarian for their major…[and] that students are more comfortable with librarians once they have the opportunity to get to know them.[12]" Kinnie similarly found that increased involvement with faculty outside traditional library responsibilities also improved his subject specialty liaison work[13].

Dewey likewise promotes the embedding of academic librarians into as many campus venues as possible as a way of "advancing colleges' and universities' strategic priorities through constant collaboration"[5] and Gamble argues for the recognized presence of academic librarians on university governance committees, faculty unions, clubs and student activities as legitimate modes for providing university service that ought to be valued and rewarded by library administration[7].

E-Literacy/Virtual Learning Environments in Academic Institutions and the Digital Future of the Academic Libraries

E-learning is a means of becoming literate, involving new mechanisms for communication, such as: computer networks, multimedia, content portals, search engines, electronic libraries, distance learning,

and web-enabled classrooms. Different web based applications such as email, real-time conference, Web Cam, etc. are being used as important tools in the process of e-learning.

Technological innovations have brought tremendous changes in the whole education process and have led to a paradigm shift from teacher based education to a learner based education system. Developments in the electronic networking frontier have changed the whole dimension of the education system. This has brought a shift from the 'just in cast education' to 'just in time education' system. Internet, another cost-effective solution of reaching out to the learners at a distance, is gaining ground throughout the world. It is acting as a catalyst for change in the education process. It has taken education beyond the classroom and lecture hall into a new era of networked and collaborative learning[24].

Since the aim of e-learning environment in education is to enhance students' learning opportunities by enabling them to partake in global, team based educational projects, in which they directly experience different cultural contexts and access a variety of digital information sources via a range of appropriate Information and communication technology, the future academic library professional should change their role by developing new standards and skills accordingly to meet the future digital information needs of the users.

Today almost all the academic institutions, universities and college libraries have been automated by library software and have become connected with Internet, intranet and extranet facilities and through which they are providing access to relevant e-journals and e-books by proxy-server based networks. So the future of the academic library services may be changed accordingly to fulfill the needs of the patrons in the e-learning environment.

Libraries have an outstanding potential as the third place, after home and work with learning, inspiration and entertainment. Hence it is very essential to change the environment, structure and interiors of the academic libraries according to the digital information needs of the user and the future library should not have collection storage as its main function. E-learning opportunities must be enabled by the library professionals to the user in global level to access a variety of digital information sources via a range of appropriate World Wide Web technology.

E-Learning is a catch-all term that covers a wide range of instructional material that can be delivered on a CD-ROM or DVD, over a local area network (LAN), or on the Internet. It includes Computer-Based Training (CBT), Web-Based Training (WBT), Electronic Performance Support Systems (EPSS), distance or online learning and online tutorials. The major advantage to students is its easy access[14]. So, providing access to online e-journals and e-books through networks will enhance the self-learning knowledge of the user.

Trends and Challenges Before the Future Academic Library Professional in the E-Learning Environment

The first and foremost challenge before the library professionals to face the future academic needs of the user in the e-learning environment is to provide electronic access to all relevant information and integrate it on networks across the world. The second challenge is to create a new physical library premises with computer network facilities, abandoning the old concept of library as a storehouse, and, the third challenge to future library professionals is to develop new standards and skills for the library profession to meet the user needs in a proactive way. In this e-learning and e-publishing environment, electronic reference services and other support services with various expertise and digital repositories are becoming a must.

The most pressing and pervasive issues and challenges that the library and information science professionals face in the present digital era for providing digital information service to the knowledge society are:

i)   New generation of learners

ii)   Copyright

iii) Privacy/Confidentiality

iv)   Online/Virtual crimes and Security

v)   Technology challenges

vi)   Manpower

vii) Collection of digital e-resources

viii) Organizational Structure

ix)   Preservation / archiving of digital e-resources

x)   Lack of clarity in vision

The New Generation of Learners

Today's students are grown up with latest information and communication technologies. They are coming to higher education with aptitude, knowledge and expectations that have been shaped by the use of the Internet, digital media, and portable communication technologies. Students often begin their search for information with Google or similar commercial or social search engines. The academic library professional must develop a virtual electronic learning system to enhance the student's knowledge and to accommodate an increasingly diverse group of users.

Copyright

An important issue that the present day library professionals are facing in providing electronic/digital information service is the large scale of piracy of software and plagiarism. The cost and timeliness in

retrieving the information are also considered. When negotiating access with a publisher, the librarian must agree to certain restrictions on photocopying or distribution of electronic materials. Despite copyright notices and efforts to educate employees and users about intellectual property rights, electronic publications can be easily forwarded to people outside the licensed user group. The library is responsible for maintaining the awareness of all users about copyright issues.

Privacy/confidentiality

Maintaining privacy and confidentiality is another problem in accessing online information. To control pirating of software, copying or downloading all the contents of any e-resource at a time, right to obtain information and right to withhold or ban the access is essential and so there is a delicate challenge between privacy and rights to information. Now a days almost all the users are having their own e-mail accounts and they are often sending and receiving important information and even secret programmes and databases through e-mail itself and storing them for future usage. So maintaining privacy from e-mails is a great issue. Protecting one network from another to maintain confidentiality of information is another problem in securing databases on Internet and Intranet.

Online/Virtual Crimes and Security

"Privacy and security are two sides of the same coin," said Kurtz. *"If we can improve Web security, we will be able to have a positive impact on privacy as well."* Presently, Web/cyber crimes have become a common threat on internet. To overcome this issue, compulsory Virus Proof procedures should be adopted while downloading e-information from any other system. To secure the system from viruses, the databases can be modified by hacker proof procedures. Separate login and password systems are to be compulsorily adapted to the Network systems[26]. In the LAN environment, the real danger is the gradual erosion of individual liberties through the automation, integration, and interconnection of many small, separate record-keeping systems, each of which alone may seem innocuous, and wholly justifiable. To overcome the above database security problems and issues, it is essential to install a database security software or firewall technology like Norton Anti-virus software and IBM e-network Firewall technology to protect the databases.

Technology Challenges

Technology provides challenges to access information. The ALA's 1995 Code of Ethics clearly states that everyone should have access to information. The recent explosion of information available on the Internet presents challenges to the traditional American Library Association (ALA) code of ethics that is taught in library school[25]. Librarians make ethical decisions every day on the basis of the culture of their organizations. Some organizations limit access to particular levels of employees by requiring a username and password; others may institute behind-the-scenes filtering software or restrictive policies for providing access to the entire Internet. Because these steps challenge the very essence of librarianship, the librarian must step in and voice concern for the patron's rights. Establishing well defined access policies will help to clarify who has access to the Internet, under what conditions, for what purposes, and with what restrictions. Policies should consider how to integrate the new technology and how its use reflects the objectives and values of the library.

Manpower Issues

Lack of skilled manpower to maintain the e-resources and to provide proper e-information service to the knowledge society is another main problem. Core competencies of library staff are expanding to include technology skills, personal skills, learning and teaching capacity, team skills, commitment to ethics, leadership skills, communication skills, creativity skills, designing and implementing skills etc. Hence library education must be redesigned to meet the new challenges and issues evolving in the knowledge society. 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 crucial to the continued success of the organization.

Organizational Structure

Technology has broken down the rigid hierarchical structure of the organizations which is another important issue in changing the roles of the librarian in the knowledge society. Far from emulating the organization of conventional libraries, the organization and structure of digital libraries, and the division of labour within them, are open to considerable experimentation. For example, as publishers and professional societies disseminate works electronically, they are testing how far their investments should incorporate the full range of library functions, and the digital libraries license content from publishers and professional societies that manage their own repositories.

Collection of e-resources

Collecting the materials and making it available to all current and future users is another core value of librarianship. The challenge is for the librarian to contribute to establish realistic collection-development policies covering acquisition of and provision of access to electronic resources for users now and in the future. With the increase in electronic resources, librarians and libraries are no longer just collecting and caring for print materials. Unlike a print book or a journal, electronic resources cannot be considered a permanent addition to a collection. Payment for a product covered by a license is a payment to use the information product for a period of time that is usually specified in a contract. This payment is not for the

outright purchase of the product or for ownership of all the rights to that product. A digitized collection means that libraries share the use of the collections with other institutions, not only locally, but also globally. It is the publisher who dictates how much access will be provided, which issues will be available, and how much that access will cost.

Preservation/Archiving of e-resources

To preserve the e-resources for access would be a contradiction in an electronic environment for librarians, where there is unlimited and continuous access, but performance is not there in such an environment. This leads to the conflict on what is to be preserved and what is to be accessed. If we need to preserve electronic resources/documents, we need to preserve all the software and hardware also to read the documents that we create. Currently, there are two radically different solutions for preserving digital information: migration and emulation. Neither solution is without some risk. Migration may not work for specialized, proprietary formats. It may save the content of a file but lose or diminish the internal relationships or contexts of the information. The second strategy, emulation, assumes future access to multiple data objects. If one or more of the components were missing, this complex environment would most likely fail[22].

Distribution and archiving through digital repositories will insure that the library has a viable system for sustaining digital content. Digital repositories also will facilitate the long term conversion and preservation of print materials, and create new opportunities to structure learning activities around the content.

Lack of Clarity in Vision

The biggest challenge that the librarians are facing in the knowledge society, seems to be lack of clarity in vision and a general lack of direction. A general vision is needed and the general integrated plan should be shared among the library professional, which should bring unity of purpose. The Library professional should become capacity builders and facilitators to the knowledge society. The vision of the library professionals should emphasize on the quality of services provided to support teaching, research and public service activities, to enable the users to become self sufficient and to make the library both a place and gateway for accessing information within and beyond the walls of the library.

Impact of We-based e-Learning Systems

The emergence of web-based e-learning systems through Internet facility has great impact on every facet of library activities and information services. Library and information professional of the future academic libraries face the following paradigm shifts due to the rapid developments in the ICT and WWW technologies:

- Transition from procuring and managing print media to electronic media

- Changes from passive user to active user in the e-literacy environment

- Concept of web-based networked environment

- Disseminating information on demand to proactive digital information services

- Providing information service to facilitating access to e-information service

- Transition of developing the normal collection to e-resources (e-books and e-journals)

- Individual works to team works.

Changing Roles of Future Academic Library Professional

The changing role of library professional implies a set of updated skills needed for facing the challenges created by the latest web technologies in the e-learning environment. The emphasis will shift from technical skills in the library to communication, facilitation, training and management skills. Although technology presents the librarian with ethical challenges, the librarian is to be ready for the role of information professional in the connected networked world and they have to acquire skills that can be contributed to success in their new roles[24].

Leadership Role

One primary role of librarians is to provide leadership and expertise in the design, development, and ethical management of knowledge-based information systems in order to meet the information needs and obligations of the patron or academic institution. In the future, as now, we can expect the virtual library to be the organization that identifies, selects, negotiates for, and provides access to an incredible range of information resources on our behalf. At present, lot of virtual libraries have been created and managed by various institutions and organizations for e-learning and teaching professional. Hence library professional should enrich their management skills to play leadership role in the digital future, for organizing, managing and disseminating e-literacy to users.

Proactive Information Professional Role

The modern trend is for the role of the librarian to move from that of a passive intermediary role responsible for guiding patrons to appropriate information resources, towards that of a much more proactive professional role which includes analyzing and repackaging information, content information management systems and institute digital repository management systems.

Role of Librarians as Masters of Web

To face the challenges of the virtual learning environment in educational institutions, librarians are becoming masters of the Web. Librarians create powerful web sites such as the National Library of Medicine's PubMed database. They create their own website as an easier way to share with others what

they know. They gather electronic information and create electronic pathfinders and front-end search tools to help users for accessing the required information. Academic Library professionals create online tutorials and instructional web pages to help patrons for performing the best searches. They provide links to websites on specific topics and lead patrons to these evaluated sites as a starting point for retrieving related and relevant information.

Role of Information Scientists in Digital Libraries and E-Literacy

Librarians have to change their role in the e-learning environment by participating in e-learning experiments and becoming involved in universities' e-learning centers. They should invest in procuring e-learning tools and software and should develop their e-learning and ICT skills. Hans Roes addressed changes in education in general, and then focused on strategic opportunities in education for libraries.[22] The opportunities for libraries, he mentioned, included:

- Developing digital libraries as natural complements to digital learning environments to support educators with respect to the selection of adequate resources for a given course;

- Managing and indexing digital student portfolios and integrating them with other information resources offered by the library;

- Teaching information literacy to educate future knowledge workers, in traditional ways or via Internet-based instruction modules;

- Collaborating as part of multidisciplinary teams of experts to design courses;

- Providing a learning center to serve as a physical learning environment suitable for more active learning styles.

Role of Digital Space Manager of Academic Institutions

The librarian has an important role in making digital space accessible to members of an academic community on campus and beyond, in addition to providing physical space for assembling communities of interest. A number of faculty members have data sets that they may wish to post for review and comment by colleagues on or off campus. Some academic and research libraries have expanded the concept of providing access to scholarly work by becoming electronic publishers of faculty projects and by providing institutional repositories, where faculty can store their scholarly work under the stewardship of the library. Librarians also can participate in the institution's e-portfolio program, in particular, by providing advice and expertise on information policy issues and preservation strategies.

Role of 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 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 back end via the technology components, and through the close liaison and involvement of library staff in VLE development, i.e. the human component. MacColl says[17] that:

> "VLEs are changing the way learning and teaching is delivered and will soon be ubiquitous. Libraries must assert their traditional role as resource managers in this new environment of web-based courses".

Conclusion

The remarkable growth of Internet has made significant revolution in all the areas of science and technology. Rather than using it as a tool for searching and retrieving information, Internet has become the king of all media, by which we can access virtual information and can build a virtual library to provide timely, quality service to the users. Librarians of this digital era, are in the position to change their role as arbitrary information scientists/gatekeepers and to meet the challenges of the Internet, World Wide Web, online access in the knowledge society. So they must enrich their knowledge with special skills of the latest IT developments, to browse, access and retrieve a particular information across the global networks and to organize and manage the information by building digital libraries and by which they can provide quality e-information service to the knowledge society. Library staff must be capable of working effectively in partnership with faculty members to enhance the strength of teaching and research. To be certain, there are many staff members of this kind in academic libraries today. In this as in other respects, part of the skills, library staff must develop is the ability to educate faculty members, helping them to understand the power and applicability of e-resources.

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Dempsey and Malpas consider the future of the academic library in the context of a diversifying higher education system. The academic library is not fixed. It is changing as it adapts to the changing...Â The library was very much a part of the fabric of research and learning behaviors, because print materials were central to those behaviors. In this way, this model of the library became deeply embedded in behaviors and expectations. A Trend Toward Services and Engagement. However, as the digital shift took hold in the 1970s and later, the print collection gradually became less central to research and learning behaviors (although, of course print collections remain important).