A Survey on Digital Libraries and Its Important Role on the Development of E-Learning and Life-Long Education

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Abstract

The term Digital Library has a variety of potential meanings, ranging from a digitized collection of material that one might find in a traditional library through to the collection of all digital information along with the services that make it useful to all potential users.
Digital library has some definitions such as "electronic library" "virtual library" which sometimes used synonymously. However, electronic library nowadays often refers to the portals provided by government agencies.

Information and Communication Technology has revolutionized the concept of libraries and traditional libraries are gradually being digitized in some developing countries. A 'digital library' comprises digital collections, services and infrastructure to support lifelong learning, researches, communications as well as preservation and conservation of recorded knowledge and also improving the common culture in a society.

This article will discuss the factors that will necessitate the traditional libraries to get digitized in near future. It also tries to talk about the advantages, disadvantages, requirements and so on. The emphasis, however, is to describe the role of digital libraries on the advancement of E-learning and community's general knowledge.

Introduction

We are in the age of computer and communication where IT in addition to its various applications in education, industry, economics etc., has been used extensively to record, preserve and publish the required data in digital forms. The computer technology, particularly, networking systems have had an important impact on every aspect of the traditional organizations as well as traditional libraries. Such a rapid change is mostly due to the impact of new technology and innovative invention that is called Informatics Technology or Informatics Communication Technology (IT /ICT).

The library traditionally has dealt only with storage and dissemination of scientific information in many fields. Traditionally, library and information professionals have managed the end products, i.e., books, journals, etc. and have never involved in the preparation of the product. But in view of the changing patterns of technology and the significant role played by telecommunications in shrinking the globe to communicate within few minutes with one another across it, we have to rethink our options as professional handling information. Libraries, publishers, system developers and diverse user populations are collaborating in exciting new ways to create digital libraries models and technologies to meet the

different needs of new forming societies. (Gobal, 2000)

Electronic Library, the definition

The term digital libraries refers to a new carrying out the functions of libraries encompassing new types of electronic information resources, new approaches to acquisition, especially more access to other libraries collection and sharing it. It also undertakes new methods of storage and preservation, new approaches to classification and cataloging, especially of electronic data, intensive use of electronic system and networks.

A digital library is a library in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computer users when ever and wherever it is necessary. The first use of the term digital library in print may have been in a report in 1988 to the Corporation for National Research Initiatives (Banerjee ,1999).

The term digital libraries were first popularized by the NSF/DARPA/NASA Digital Libraries Initiative in 1994. The previous titles; electronic library or virtual library, are occasionally used as well.

As a whole, a digital library is nothing but a large database for people who are working on hypertext environment. It is an environment, which supports the cycle of creation, storage, preservation, dissemination and use of data, information and knowledge or a digital library is a managed collection of information with associated services where the information is stored in digital format and accessible over a network. (Fox,1999)

Main Features of digital library: A digital library is expected to support the following features:

- Organizes collection of multimedia and other types of resources.
- Supports resources available in computer process form.
- Carries out the function of acquisition, storage, preservation and so on
- An access to the entire collection is globally available directly or indirectly across a network.
- Supports users in dealing with information objects
- Helps in the organization and presentation of the above objects via electronic/digital means etc.
- To be available for a very long time
- Assists traditional library missions of collection development, organization, access and preservation.
- Supports publishing, annotation and integration of new information.
- Provides access to very information collection
- Supports multi-media content
- Network accessible

Time is also a major factor for each modern user of the library. Digitization is the only solution to this problem. Digital libraries are needed to provide quality-based service at the user doorstep. In general digital libraries are needed due to the following reasons

- Easy to understand: The visual or graphical information systems of digital libraries are more popular as compared to text based information system.
- Shifting the environment: The new generation users become only pleased when they will be able to read on the computer screen.
- Information explosion: Digital library is partly expected to be able to handle the problem of information explosion. It will be able to handle and manage large amounts of digital

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contents by simply providing link, without actually procuring the documents. (Kashyap, 1994).

- Information retrieval: By using digital library, one will be able to retrieve information specifically, i.e. a particular image, photo, a definition etc.
- Distance learning: Learning from home, office or other places, which are more convenient to the users. They can be easily done via the digital data provided by digital libraries
- Procure online publication: More and more information are going to be published through internet, then digital library is applied to procure the online publication and provide link to important sources of information.
- Serve as an alternative to the traditional ways of education
- Provide educational opportunities for those who are not able to access the conventional education.
- Raise the general knowledge and attitude of a society

Digital Libraries and Education

Print-based material like textbooks, journals and the other printed educational materials are replaced by the electronic media, e.g., CD_ROM packages. So a distance leaner can have easy access to CD_ROM packages which may be available at the central library of E-learning Institutes. On the other hand, the introduction of digitized applications that can be stored on CD-ROM and delivered over the networks will enable E-learning institutes to achieve savings in staff time by turning to on-line training. Network-supported multimedia plays a vital role in digital library. E-learning students from their respective places can easily access the required information from library. If the institute library is linked with worldwide libraries, the E-learners and researchers can effectively use the scarce information and they can effectively share journals and textbooks available in CD_ROMS.(CD-Rom Directory: (1995)

Electronic distance education will become available for a wide range of educational instructions through broadcast, cable online and satellite technologies. Such forms of instruction satisfy the needs of motivated students with full time jobs, family obligations, isolated locations and needs for specialized courses. The E-learning institutes and public libraries are essentially co-related with each other. Strong network of public libraries is a pre-condition for the success of any distance education and E-learning.

Nowadays, any institutions that have not been touched by this kind of technology will be always left behind since the globalization acceleration is continuously improved with the rapid progress of IT/ICT. IT using hopefully can give a great benefit to such a competitive world of education. It is clear that one of technology implementations in case of digital library is to provide necessary information to be the source of knowledge and to feed the different course credits in distance education and E-learning.

Factors which necessitate the traditional library transfer to digital ones

There are numerous factors which clearly explain the need for transferring the traditional libraries into digital Libraries.

- Lack of budgetary to meet the various needs in traditional libraries
- Lack of physical facilities, storage problems and etc.
- Lack of space for all researchers and students to study in

- Lack of qualified and experienced staff to assist all referees
- Lack of proper co-ordination in various functionaries of a library
- Geographical remoteness
- Information explosion in science: The high output of information calls for improved techniques in processing and distribution of information. (Greenstein, 2007)
- Specialization of Knowledge: Due to growth of research scholars, economically we cannot offer large number of scholars with a large number of documents.
- Students services particularly E. and distance education students as well as life-long learners
- Production and distribution of educational materials for all levels of people everywhere and anytime regardless of various constraints
- Easy and available reference and information services
- Listening to audio and viewing visual materials through home computers
- To develop appropriate digital collections in various disciplines to satisfy the needs of E-learners and Life-long education through networks connecting all the libraries in all parts of a country
- To provide facilities such as reading, lending, reference, information referral and documentation services in general and particularly related areas like distance education, life-long learning

Digital Libraries and Life-Long Education

Society has witnessed tremendous amount of advancement because of new communicative media such as Internet, Web and Digital libraries. Information society, communication society, knowledge society are some of the descriptions attributed to the socio-technological state reached today. All of these terms conclude the idea that a transformation process is in progress in almost every sector of the society.

Nowadays, the information society possesses the power to make education accessible to everyone without gathering in a school. An assumption that "classroom is the best place to learn" still prevails. Still there is a challenge coming from traditional educators to duplicate the classroom experiences for the improvement of the educational outcomes. However, most of the students will not accept to consume two important assets; money and time, in traditional schools unless" compulsory (Gobal, 2000)

On the other hand, the distance education institutions will be centers that produce quality materials, integrate technology in teaching and network the educators and students to benefit from all of these facilities. May be the most valuable drive of the distance education to society will be the transition of higher education from elitist to masses or Life-long education for all.

Therefore the technologies of the new millennium will shape the models and tools of distance education and life-long learning which will be composed of individual learning environments integrated with digital technology. New technology incorporated will include interactive courses via satellite, tele-course via cable and digital TV, multi media courseware; computer mediated studies via Internet and informatics and digital libraries

It is clear that the main educational concerns of any system of education are the promotion of all means of development of all levels of learners regardless of their ages, races, financial issues, genders and as a whole without any kind of discrimination, while

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preserving the value system and all round prosperity of the society. This is achieved through target oriented curriculum and appropriate teaching methodologies and delivering the educational material without any constraints where E-learning centers and distance education universities with the help of digital libraries can be designed in such a way to meet the educational demands in a society and to promote the general knowledge of a society via life-long learning.

Advantages

A digital library is not confined to a particular location or so called building it is virtually distributed all over the world

The user can get his/ her information on his own computer screen by using the Internet. Actually it is a network of multimedia system, which provides fingertip access. The spoken words or the graphical display of a digital library is again having a different impact from the words that are printed. In the new environment owing a document will not be problem for the library because the user will pay for its uses (Koehler, 2006).

1. No physical boundary: The user of a digital library need not to go to the library physically, people from all over the world could gain access to the same information as long as an Internet connection is available.
2. Round the clock availability: Digital libraries can be accessed at any time, 24 hours a day and 365 days of the year
3. Multiple accesses: The same resources can be used at the same time by a number of users.
4. Structured approach: Digital library provides access to much richer content in a more structured manner i.e. we can easily move from the catalog to

the particular book then to a particular chapter and so on.

5. Information retrieval: The user is able to use any search term bellowing to the word or phrase of the entire collection. Digital library will provide very user friendly interfaces, giving click able access to its resources.
6. Preservation and conservation: An exact copy of the original can be made any number of times without any degradation in quality.
7. Space: Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them. When the library had no space for extension digitization is the only solution.
8. Networking: A particular digital library can provide the link to any other resources of other digital library very easily thus a seamlessly integrated resource sharing can be achieved.
9. Cost - The cost of maintaining a digital library is much lower than that of a traditional library. A traditional library must spend large sums of money paying for staff, book maintains, rent, and additional books. Digital libraries do away with these fees.

Disadvantages

The computer viruses, lack of standardization for digitized information, quick degrading properties of digitized material, different display standard of digital product and its associated problem, health hazard nature of the radiation from monitor etc. makes digital libraries at times handicap (Ravichandra,1996).

1. Copyright: Digitization violates the copy right law as the thought content of one author can be freely transfer by other without his acknowledgement.
2. Speed of access: As more and more computers are connected to the Internet its speed of access reasonably decreasing. If new technology will not evolve to solve the problem then in near future Internet will be full of error messages.
3. Initial cost is high: The infrastructure cost of digital library i.e. the cost of hardware, software; leasing communication circuit is generally very high.
4. Band width: Digital library will need high band for transfer of multimedia resources but the band width is decreasing day by day due to its over utilization.
5. Efficiency: With the much larger volume of digital information, finding the right material for a specific task becomes increasingly difficult.
6. Environment: Digital libraries cannot reproduce the environment of a traditional library. Many people also find reading printed material to be easier than reading material on a computer screen.
7. Preservation: Due to technological developments, a digital library can rapidly become out-of-date and its data may become inaccessible.

Conclusion

This Paper highlights the importance of library network in education, particularly in the wake of current revolution in information technology. This revolution is being sustained by infrastructure as provided by the fast growing E-learning and distance Education Universities in some developing countries such as Iran. The social utility of distance education can get a high impetus if spread of information is clubbed with. This makes library networking a crucial area for intellectual explorations.

Digital libraries have a critical role in learning, for all groups of people in a society because they are available everywhere and anytime. They save time, by just clicking your mouse you can obtain any information you need in the shortest time and cheapest way. When all people in a society can easily access to some helpful sources to read and study, it will promote the general culture. Actually, most of the traditional and prejudiced attitudes as well as cultural conflicts can be improved or removed through Digital Libraries.

A library is fundamentally ailing organized set of resources which includes human services as well the entire spectrum of media. Libraries serve important roles in learning; they serve a practical role in sharing expensive resources; physical and human resources, support instructional programs by responding to the requests of teachers and students. If we believe that education has no limitation, it is for all everywhere and anytime, regardless of age, race, and occupation, if so why not libraries become universal and open for all without any boundary in the process of delivering education and life-long education. Libraries serve a cultural role in preserving and organizing artifacts and ideas and they also serve social and intellectual roles by bringing together people and ideas which will all influence the general culture and advancement of education for all groups of people, particularly in underdeveloped and traditional societies.

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Digital education is essentially a product of the past several years, although in different forms it already existed slightly earlier. It is evident, however, that modern devices and means of information transfer are necessary for its development. This type of education would not be therefore possible without rapid development of computers and the Internet. As a consequence, today 'virtual lectures, modern e-learning courses, educational games, electronic tests, portals with educational resources as well as digital school registers and monitoring systems of the learning process'2 have entered everyday reality. This article aims to show the speciicity of digital education, the current state of its implementation, the expected results and concerns in this respect. Distance learning (DL) is learning in which the provision of the majority of educational material to the learner and the bulk of interaction with the teacher are carried out using modern information technologies: the Internet, computer telecommunications, national and cable television, multimedia, training systems. A distinctive feature of distance learning is to provide students with the opportunity to obtain the required knowledge themselves, using the advanced information resources provided by modern information technologies. Teaching technology is built on the foundation of a certain content and must comply with the requirements of its presentation. Learn what is lifelong learning and why it's important. Discover how to adopt lifelong learning in your life. Difference between lifelong learning and continuous learning. Digital Transformation of the Workforce. Creating Human Touch for AI Revolution. Learn insights about the benefits of proactive retraining and reskilling, and how you can better understand the economics of learning. Download White Paper. Discover Lifelong learning is a form of self-initiated education that is focused on personal development. While there is no standardized definition of lifelong learning, it has generally been taken to refer to the learning that occurs outside of a formal educational institute, such as a school, university or corporate training. Library and Higher Education and Role in External Study Mode Perspective. A library's role is always shaped on the institutions like schools, colleges and other professional and non-professional organizations, the needs of which it services. Mostly these services are inadequate for the role proposed for it at a particular level of education. Public libraries now certainly play a more strategic part in establishing lifelong learning tools in a meaningful effort to become dynamic collaborators in the systems of education. How do eLearning and traditional learning differ? Here's an in-depth look at the pros and cons of online learning vs. traditional learning. "At the end of the day, we have to consider what's best for the learners and content. Hands-on examples: Educators have the opportunity to provide students with real life examples they can touch and interact with. This is a crucial element for hands-on learners. Teaches good social skills: The idea of being put into a class with people of all different backgrounds and personality types allows for countless social opportunities that you won't necessarily experience in an online format. Better for physical health: Students are way more likely to get physical exercise if they have scheduled time carved out each day to do so, or have a campus gym nearby.