Digital Divide and Digital Library Environment: Bridging the Gap through Information Literacy and Role of Academic Community

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Abstract

The aim of this paper is to explore the problem of how best to conceptualize information literacy (IL) in the higher education environment, in order to ensure that without combined efforts of teachers, librarians, administrators and users, the concept of digital divide is not easy to be handled by the academic community. This paper outlines the importance of developing IL in higher education for bridging the digital divide and the influence of the digital library environment. Further, it also describes the role of academic community in developing the IL and bridging the digital divide.

Keywords: Information Literacy, Digital Divide, Digital Library, Academic Community

1. Introduction

Concepts like 'information age', 'information economy' have been prevalent in the field of library and information science for last few decades. However, information has been acclaimed as a basic ingredient for the society since beginning. Nowadays, information technology has generated a new dimension to information as now being turn out to be a prime commodity. In addition, connections of networks have attributed to the fast communication with a 'real time' feeling among people across the world. The academic organizations, like universities in particular have good prospect to exploit the full potential of ICTs in research, class room teaching and learning innovatively. Further, the impact of ICTs on libraries has been enormous which are changing traditional libraries to digital libraries and thus, most of the libraries are going to build digital collection. This transformation in the society, academic environment in particular, has divided society into two worlds- born digital; and born in the world struggling for survival in the digital world. Therefore, all possible efforts need to be made to close this gap in the society for making sustainable world in digital environment. Information literacy programme can be a trustworthy technique in the digital environment in order to reduce the gap in the academic environment.

'Digital libraries are organizations that provide the resources, including the specialized staff, to select, structure, offer intellectual access to, interpret, distribute, preserve the integrity, and ensure the persistence over time of collections of digital works so that they could be readily and economically available for use by a defined community or set of communities' (DFL, 1998). Actually the main function of digital library is to connect users with isolated texts. Thus, the digital library is not a single entity and its functions include (Konnur & Rao, 2009): Preservation of collection; providing faster access to information; offering single window interface and searching facility for both print and digitized collection; presenting online learning environment with multiple user access; etc.

In the academic libraries context, most of the thinkers feel that libraries moved into a critical take off phase between modernization and transformation as they will be largely digital in next few years. These developments in academic libraries with recent technological advancements has emerged a kind of digital divide or gap between information users and the digital environment.

2. Digital Library Environment

In India, ICTs have brought noteworthy transformation in many sectors of the society, particularly in the area of disseminating information speedily. Due this, several amazing changes have taken place in the use of ICTs in recent time period only. Earlier, people were reluctant to make use of the power of ICTs, today one can apparently see a complete change in people's mindset. The present generation of students is more comfortable in using many ICTs in their everyday lives. They always want to be independent in using ICTs to get done their day-to-day tasks. They should not have to dependant on anybody for instructions on how to find appropriate information with the computer. The present academic environment indicates that most students rely on technology to collect information and to communicate with others. However, there are more than 17 million internet sites, three billion web pages, and more than a million items in typical medium-sized academic library. In this age of information overload and more importantly, unorganized information available on Internet, it is critical to get desired information easily from internet and it affects academic success and personal learning.

Besides, there are many students they do not possess the basic skills required in the digital environment. Even the core technology-based skills "do not necessarily translate into sophisticated skills with other technologies or general information literacy" and there are fewer students who have "high level of competence across a wide range of applications" (Kennedy, et al., 2008). Therefore, the students may know technology and they are applying it friendly to their works, but they may not be using potential of digital technology for their learning activities appropriately.

Being library and information professional, some time we may be eager to facilitate a variety of resources including the best technology available in the market to our users, however, at the same time, we have to see the users' level of understanding and accordingly, suitable technologies may be suggested to them. Many users don't want to be at the "bleeding edge" of technology and can use lower levels of technology to meet their needs (Avery & Allen, 2003). In India, many students come directly from the background, rural in particular and they are not comfortable with ICTs and digital library environment at all. Therefore, it is creating a kind of divide among the students in the academic environment. Here, the role of library would be major in filling up this gap and making favorable academic environment in digital era for students.

3. Digital Divide

It is a well known fact that IT has made an intense impact on the society and also influenced on lives of people immensely. In India, the benefits of IT have been apparently seen in the every corner of society and

generating great change in society. However, it is also a reality that the unequal access to information and communication technologies has led the society to a massive divide digitally (Singh, 2007).

The digital divide is a gap between communities that have access to computers and the internet and those who don't have. In the present academic environment, as said earlier, there has not been uniformity in accessing information by using ICTs effectively by all the people of the society. This is the major concern of the academic organizations in particular as it is leading to a kind of digital divide among the academic community of learners. Since use of ICTs in the academic activities has now omnipresent and libraries are also exploiting full potential of ICTs in their activities from housekeeping functions to developing digital environment for faster access of information and preservation of information for posterity, so we should prepare the students to make full use of this environment by making them ICT literate and enhancing the ability to use the digital contents. Therefore, digital divide is also being referred to haves or have-nots the literacy or skills or the ability to use the ICTs to use the digital contents. The unequal access to information has posed challenges to the academic community to take appropriate steps to bridge the gap by playing their important role in developing the digital and information literacy programmes for its learners' community. And the real digital democracy in the country can only be achieved by reducing this gap between digitally rich and digitally poor i.e. digital divide in the country.

4. Reasons for Digital Divide

In India, illiteracy, poverty, population, etc. are the reasons to have digital divide in the country. In the academic environment, students of some disciplines like sciences and some of the disciplines of social sciences are more comfortable to use the technologies and have better access to digital resources, whereas students of some other disciplines of Arts have not comfortable with technology and digital resources. Some students are having broad band connections and they can access internet resources from their houses, but others are having access of resources just for two hours a day to their departments. So the available internet and digital resources are being accessed not equally, but generally access in varying degrees by the students.

The Internet is used by only 35% of the world's population and that some 85% of all uses and 90% of all hosts are in developed countries. Internet penetration in India is only 10% of total population. The lack of localization efforts is another reason to have low impact on use of technology even in areas wherever the technology has been accessible. Fear of technology and fear of change in technologies have also been large contributing factors, which in turn has lead to an increased isolation of those who are even information literate.

Apart from above, some other reasons for digital divide are (http://www.uneca.org, 2007):

♦ Economic status

♦ Lack of appropriate ICT infrastructure and internet connectivity

♦ Lack of political will in governments to do what is needed to enable the integration of technology throughout society;

♦ Lack of awareness of technology and what they can offer;

♦ Poor computer and general literacy (like the barrier of language)

♦ Lack of interest and aspirations of individuals

♦ Lack of confidence and skills necessary to use the Internet, lack of training and orientation for use and access the online resources;

♦ Lack of intellectual capital having appropriate skills in understanding how to make use of technology and resources in digital environment

♦ Unsustainable, inconsistent and partial funding to community-based initiatives; and lacking the focus on local requirements

The above reasons may lead to social exclusion, economic stagnation and technological isolation of a country. Even the plan to achieve the 8 Millennium Development Goals (MDGs) in 2015 will be affected. And this social exclusion, economic stagnation and technological isolation have also affected our academic environments or the academic community and for achieving our Millennium Development Goals, the academic community will have to recognize and play their leading role and responsibility as strong pillars in establishing the building of all academic affairs.

5. Information Literacy

The facilitation of lifelong learning and the development of more collaborative and applied opportunities would be the top priorities in the higher education. Therefore, there is a need for strong link between discovery and learning through appropriate opportunities for students. In the ICTs environment, modern methods have been emerging in the class room teaching and learning, so the instructional needs of users have changed noticeably. There has been a growing pressure to rethink academy's approaches to teaching and learning. The needs in the digital environment are to prepare students in different ways like- making them comfortable with technology and digital environment, and working with different people and ideas collaboratively.

In view of this, while libraries would still concentrate on developing information resources and helping users through searching techniques for finding information in digital environment, however, for successful information enquiry and its proper use, libraries, academic in particular need introduced information literacy programme for the users. Information literacy according to American Library Association (ALA), 'to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information'.

Chartered Institute of Library and Information Professional (CILIP) (2005) 'Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an

ethical manner. This definition implies several skills that are required to be information literate require an understanding of (Macgregor & McGill, 2005):

♦ A need for information

♦ The resources available

♦ How to find information

♦ The need to evaluate results

♦ How to work with or exploit results

♦ Ethics and responsibility of use

♦ How to communicate or share your findings

♦ How to manage your findings

(Ref: http://www.cilip.org.uk/policyadvocacy/learning/informationliteracy/definition/)

In the digital environment two dimensions of information literacy are prominent- firstly, the need for skills to exploit technology to use information effectively and secondly, the need for conceptual understanding of information knowledge processes.

6. Information Literacy Education

Information literacy education is instrumental to keep the society intact in a digital environment by reducing the gap perceived due to segregation of population into information haves and have-nots. It is not only the ICT literacy which is required and responsible for this fragmentation in the society, but, in the present environment all type of literacy including- media literacy, computer literacy, visual literacy, tool literacy, resource literacy, social-structure literacy, research literacy, publishing literacy, critical literacy and emerging technology are important to understand the information literacy.

Information Literacy Education is a collective responsibility of all educators and information providers. Therefore, it also requires collaboration and co-operation between teaching faculty, administrators and library & information science professionals. Information literacy needs to be integrated into courses at all levels to enhance the skills aptly for the best results. For strengthening information literacy in digital era, the training programmes, courses, workshops and tutorials need to be designed and implemented by the experts, including-librarians and subject specialists, faculty. This would be a major step in providing information literacy education in digital environment (Konnur & Rao, 2009).

7. Role of Academic Community in Bridging Digital divide through Information Literacy

It is required to make effective and efficient use of ICT and able to handle digital tools, along with to understand conceptual, methodological, and cultural issues in relation with the digital environment by the students. For this purpose students should understand the concepts of digital literacy and information

literacy. All the players have a specific role to play in reducing the digital divide in the academic environment through information and digital literacy.

Information literacy commonly described as the ability to access, evaluate and use information. It is essential for 21st century and is seen a key to pursuit of lifelong learning, and central to achieving both personal empowerment and economic development. It empowers the users' community to have relevant information according to their needs. In the perspective of the digital divide, however, IT literacy is very important which not only allows access to digital information, but also make learner to learn how to use information technology.

Libraries always think to satisfy users' needs and discourse about information literacy, search strategies, Boolean operators, information seeking & use behaviour and information resources. The faculty talks about academic competencies, methodology, problem definition, research, the use of resources and argumentation. The students talk about writing a project report, the need for relevant material, their problem definition and how to move forward in their process and about frustrations in their writing process and information seek. Thus, we should facilitate to provide an encouraging environment in libraries to have collaboration among all the stack holders to satisfy their requirements (Skagen, et. al., 2006).

8. Role of Teaching Faculty

Empowering the student through digital and information literacy education has now become a gradually more explicit goal. Both, faculty and library have responsibilities to help students how to learn information literacy. In this context, academic staffs have acknowledged the value of the librarian's facilitating role of counselor in the student's process of constructing meaning (Kuhlthau, 2004). Thus, faculty along with library can allow the students to develop learning skills.

Now it is becoming important to know how to use information, rather just finding information in the library. The fundamental goal of information literacy is to develop critical users of information and teachers have an important role in developing the students' information literacy skills by which students can become information literate. In the universities, a provision in the curriculum itself may be made to learn about information literacy by the students to become lifelong learners and also to fulfill the specific needs, both professional and personal.

Therefore, collaboration between faculty and library is a critical factor for developing information literacy programmes by tailoring according to the students' specific learning needs satisfactorily. Information literacy education based on faculty-library collaboration will also help students intellectually access the information they need and use it critically, creatively and ethically. It can reduce the faculty staff's burden of having to deal with issues such as plagiarism, referencing and critical evaluation of information (Torras and Skagen, 2006).

9. The Role of Library & Information Science Professionals

Libraries are committed to make information available freely to their users and also to advocate life–long learning to all regardless of age, race or language which lead to bridge the digital divide. Libraries, no exception in India, are now transforming from traditional role of storing resources in the four walls to more active in providing access to information available within library and outside as well. Although digitization process has been a slow in the country, however, several digitization projects initiated by the government and other organizations have been pushing to bridge the digital divide in the country (Singh, 2007).Today the professional librarians are more considered as information disseminators or communicators rather than custodians of information.

The role of librarian has changed to more proactive information provider. Librarians should think of designing digital resources guides on various subjects, which include search strategies for locating e-resources, a list of useful reference books, and some high-quality websites. While conducting and teaching information literacy, the focus should be on: the value of information needs in learning activities, along with concepts and process of information literacy in digital environment. For making such programmes more effective, librarians' collaborations with computer professionals and information scientists would essentially be required in the design, organization, development, and maintenance of digital library, interfaces required, and networks according to the need and utility of users.

The new situation is that libraries begin to regard themselves as a part of the learning environment and librarians begin to look upon themselves as partners in the student's learning process. Both library and faculty are aware of the fact that physical access to information alone does not make students information literate. Academic libraries have come to realize that they have a double goal to achieve: to make electronic resources available for students and to assist them in their learning process (Torras & Vaagan, 2006). Most of the time, students are in trouble in understanding the materials available in digital form, however, they cannot use it in a right context, so they just copy the contents. Therefore, in the present environment, students should have be academically skilled, methodologically competent, team worker, creative and information literate. The library, as an active partner in the higher education environment, can contribute to student empowerment by promoting information literacy and other ways. The librarian, therefore, has a critical role in the digital library of the future as educator and consultant. The librarian's duties will not only library management, but will also have considerable emphasis on teaching, consulting, researching, preserving intellectual and access freedom, and collaborating in the design, application, and maintenance of information access systems. Working together to break the information and institutional barriers is the need of the hour. The partnership empowers individuals to know of and where expertise and resources exist (Skagen, et. al., 2006).

Apart from the teachers and librarian's role, the role of administrators and the information learners itself is also very important in reducing the gap among digital information user and the advancements of digital information society and bridging the digital divide.

10. Conclusion

In the present digital environment, the digital divide is not only created in the developing world, but it is a global occurrence due to some or other reasons. The Government of India has made many initiatives in form of projects and programmes , even for rural and remote areas, to reduce the gap in digital divide, but still a lot has to be done for making ICTs and information society's outgrowth to the benefit of the maximum population of the country. The library and information centers have a distinctive role to play in the present democratic society in order to reduce the gap between those who haves and those who have-nots through information literacy and other programmes, particularly in digital environment.

Today users or learners have internet as their first choice for seeking information, but most of them are not having the basic skills to navigate the information super highway. The information seeker should have the basic knowledge for making search strategies, critical thinking and decision making skills for proper use of digital information. Such skills can be developed by the learner through information literacy training programmes through the collaborative efforts between LIS professionals and faculty and others. In the present environment, library professional should also acquire some other multiple skills right from technology to marketing, instructing and many more. Moreover, one of the most important qualities, library professional should have- to work as team member and always seek to work in collaboration, not only within library, but also outside the library.

Now the libraries should think of making a direct impact on the learning and teaching environment. It is possible only by information literacy through collaboration with relevant partners throughout institution. Such efforts would be helpful in empowering the students and making them improved information seeker in the digital environment. Therefore, we recommend as follows:

♦ The libraries should initiate to take necessary steps to collaborate with others in the information literacy programme to empower the students to harness appropriate information and use it critically. A regular monitoring system should be evolved to know the utility as well as the quality of programme. Such cultures would empower libraries to initiate research based new approaches in information literacy programmes in digital era. Another significant issues relating to digital library would be flexible to incorporate the changing demands of learners as and when required, so it should be friendly enough to provide effective services. For making digital environment more conducive, an information literacy assessment programme would be helpful to improve the ability to access digital information by the users.

♦ For proper use of digital information i.e. critically, creatively and ethically by the students, information literacy education based on faculty-library collaboration would be necessary. Such collaboration would also help to deal with the issues such as plagiarism, referencing and critical evaluation of information.

♦ Collaborative research projects on information literacy programme design should be taken by the library staff in collaboration with faculty so that the right kind of strategies may be developed in conducting these programmes in digital environment successfully. The capacity building opportunities may be created for all library professionals and faculty in the different related fields relating to information literacy. Library associations and organizations like INFLIBNET must offer a leading role in supporting

these programmes and proper and effective use of technology in the libraries. More workshops and training programmes must be conducted on role of collaboration in the digital environment and on basic techniques of conducting information literacy programmes for students.

♦ For running information literacy programmes successfully, library should have an Information literacy department with dedicated team of staff. The authority must determine if such programmes are worth the investment and help the library's mission. For establishing programme accountability, use assessment on regular basis should be monitor in order to report the results. This would also help to ascertain the visibility of the programme.

♦ Language obstacle is one of the most important barriers in using the technology for fulfilling the individual's information needs. Therefore, one of the most important initiatives to reduce the digital divide would be through localization activities. It is important to have information in local languages as most of information in available in English.

Finally, for making digital libraries more useful, it is important to run information literacy programmes in collaboration with teaching academics and computer professionals to make students more information literate so that they can access information properly, select carefully and evaluate critically and use creatively and means accurately. To make sure they become independent learner in a democratic way, about the economic, legal and social issues relating to the use of ICTs would also explained to the learners through such programmmes. At last, actual meaning of information literacy will really work when they would also understand the use of information ethically by acknowledging the works of others, giving credit aptly, citing information properly and in turn, they would also understand the feeling of sharing information with others, which is actually needed in the present academic environment.

References

1. American Library Association Presidential Committee on Information Literacy. Available at http: // www.ala.org/ala/acrl/acrlpubs/whitepapers/presidential.htm

2. Avery, Beth and Allen, Virginia. (2003). The Impact of the Digital Divide on Scholarly Communication. (pp. 85-94). Available at www.vims.edu/GreyLit/IAMSLIC/proc02085.pdf (accessed on 11/02/2013)

3. CILIP. (2004). Information Literacy: Definition. CILIP, London. Available at http://www.cilip.org.uk/ professionalguidance/informationliteracy/definition/ (Accessed 12 February, 2013).

4. Digital Libraries Development: imperatives and best practices: The Need for Capacity Development in the Use of Online Resources, the Case of Funded Online Resources for Africa. (Oct. 2007). Available at http://www.uneca.org/istd/resources/digital%20libraries%20development%20-%20en.pdf (accessed on 13 February, 2013).

5. Kennedy, Gregor [et, al.]. (2008). First year students' experiences with technology: Are they really Digital Natives? Australasian Journal of Educational Technology, 24(1), 108–122. Available at http:// www.ascilite.org.au/ajet/ajet24/kennedy.html.

6. Konnur, P.V. and Rao, K. Kavita. (2009). Promoting Information literacy in the Digital Library Environment: The Collaborative Role of the Library and Information Science Professionals. Presented in Seminar on Library and Information Management in the Digital Era, Kanchi Krishna College of Arts & Science, Kancheepuram, October 2009.

7. Kuhlthau, Carol Collier. (2004). Seeking Meaning: A Process Approach to Library and Information Services. 2nd edition. Westport, Connecticut: Libraries Unlimited.

8. Macgregor, George and McGill, Lou. (2005). Digital Libraries and Information Literacy Issues within Virtual Learning Environments: An e-Learning Impasse. Presented in Librarians' Information Literacy Annual Conference 2005, Imperial College, London, 4-6 April 2005.

9. Sims, John W. and Solomonides, Ian P. (2008). Digital Infrastructures, Higher Education and the Net-Generation of Students. Asian Social Science, 4(3), 10-16.

10. Skagen, Therese [et. al.]. (2006). Empowering Students through Information Literacy in the Physical and Virtual Classrooms: Cross-institutional Collaboration between Library and Faculty and between two Scandinavian University Libraries. Creating Knowledge IV. Copenhagen, 16-18 August 2006. Available at http://www.ck-iv.dk/papers/SkagenBlaabjergTorrasHansen.

11. Singh, Neena. (2007). Bridging the Digital Divide in India: Some Challenges and Opportunities. World Libraries, 17 (1), Spring 2007.

12. Torras, Maria-Carme and Skagen, Therese. (2006). User Education at the Digital Library: Physical and Intellectual Access to Information through Digital Literacy. Available at https://bora.uib.no/bitstream/1956/1827/2/SkagenTorras.pdf.

13. Torras, M.C. and Vaagan, R.W. (2006). Websites and Internationalisation: A Survey of Norwegian Academic, Research and Special Libraries. Libri, 56 (1), 28-37.

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