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A REVIEW OF DIGITAL RESOURCES AMONG DIFFERENT TYPES OF

LIBRARIES IN BANGLADESH

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ABSTRACT

A library without digital resources is like a king without a kingdom. But sad stories continue in most of the developing countries specially the night mares is a reality for the libraries of Bangladesh. Most of the libraries (including national, public, academic, special) in Bangladesh have no electronic/digital resources or very limited resources. In this reality, aims of this paper is to explore the present status of digital resources in different types of libraries and as expected the findings were shocking. As this paper was based on secondary resources, the findings shows that there were no digital or electronic resources available at the collections of national and public libraries, some digital resources were found in case of special libraries and a notable number of resources were found in the academic and university libraries though still the collections need to be increased in numbers, in that regard this paper concludes with some specific guidelines to increase digital resources in university libraries.

KEYWORDS: Digital Resources, Electronic Resources, Libraries, Libraries of Bangladesh

INTRODUCTION

The rapid growth and uses of emerging technologies has changed the traditional library into automated, electronic, virtual and digital library. This revolution has completely changed the library scenario, especially in an academic setup. This revolution is the need of the hour to make research more productive, to disseminate information and to establish a strong network system among all university libraries to quench the information thirst of the clientele. It is the wish and desire of a modern library to apply and enjoy the benefits of emerging technologies in its library daily housekeeping routines and future developments.

Developments in emerging technologies have had a tremendous impact on all kinds of libraries and information resource centers over the last two and half decades. The concept of library automation in Bangladesh is not new, but the situation is still not leveled with developed nations.This study depicts the status of digital resources among different types of libraries in Bangladesh. The areas covered in this paper are: available library services and resources, digital library infrastructure, status of library automation in university libraries including national, public, academic, special and ways for their improvement.

Objectives and Methodology

The prime objectives of the study is to explore the status and availability of digital resources among different types of libraries in Bangladesh. More specifically the objectives of the study are:

- To have a look for the current digital information resources available to different types of libraries in Bangladesh.

- Identify specific problems related to digital resources.

- Give specific guidelines to overcome the problems related in this field.

This analytical research aims to explore the present digital information resources available at different types of libraries in Bangladesh,identifying problems related to digital resources and provide specific guidelines to overcome the probles.In analytical research, the researchers has to use facts or information already available.So,this study is based on secondary sources,primarily from literature review. Relevant articles,periodicals,reports also were reviewed. Available material on the Internet was also used.

LITERATURE REVIEW

Digital Information resources posses an advantage over the traditional sources with respect to access to information. The greatest benefits of digital resources are that the digital resources can be accessed from their desk tops. With the availability of digital resources the role of the librarians or information professionals become limited but shifts from simple providing resources to that of acquiring digital resources that are tailored to meet the exact needs of the user (Vinayagamoorthy, 2007). [1]

According to (Islam, 2010) [2] digital resources or digital information resource is, "Digital information resources are those resources whose deal with both born digital and digitized materials which can be either accessible from library's in house database or from the world-wide-web, in that case materials must have preserve the copy right law, for both the born digital and digitized format, some resources will be permissible to furnish information in full text and others will be limited to metadata and some resources will be freely accessible for anyone from anywhere in the world and others will have limited accessibility due to the library's policy and for cost related issues and also for the authentification."

Some other libraries and information centers working with computers and some related technologies are at the initial stage of 'automation process' and networking ;It is observed that about 55 special libraries and information centers of the country have either created or are in the process of creating databases by using personal computers. Most of the libraries and information centers use computers as stand alone devices .These libraries have installed microcomputers mainly for creation and maintenance of bibliographic databases and some word processing activities. Few libraries have CD –ROMs facilities, but no initiative has been taken to produce any indigenous information product on CDs. Some libraries have online connection and are providing external resources sharing facilities to a limited scale .Only a few specialized libraries use and information centers have started networking and resource sharing or telecommunication systems for inter- site data transfer (Alam,1998) [3]

It is a fact that there is no formal study on how many libraries and information centers have bought computers for initiation of automation .Approximately 82(24 public and private university ,2 national ,1 public and 55 special)libraries and information centers (covering research ,health ,agriculture ,science and technology ,departmental ,ministries ,missions, etc.)Use computers in their operations and most of these are concentrated in Dhaka, the capital of the country (Munshi and Ahmed, 2000). [4]

There is no recent institutional statistics supporting neither the actual number of libraries and information centers in Bangladesh nor ICT usage in the existing library systems. According to different personal investigation and survey it has been evident that there exists neither digital library nor any integrated automated library system in the country in true sense of the term (Alam, 2007) [5]

The need and importance of digital information resources has been realized by a few number of libraries in Bangladesh. The theoretical frame work and beginning to acquire the digital information resources has been started though the rate of adopting ICT & modern technology in library is very low. However, the scenario of digitization and digital collection maintenance is obscure. Based on the literary evidences, it is assumed that the initiatives for bibliographic database, full-text database, hosting indigenous information product over the internet, technology based information communication activities are at the elementary level at the maximum number of the university libraries of Bangladesh (Islam, 2010) [6]

Chandel, Mezbah-ul-Islam and Gupta (2003)[7] paid attention to the use of resources by research scholars in university libraries. The analysis was focused to determine the use of basic information sources in research particularly electronic resources. The result of the survey indicates that, traditional sources are still dominantly used with little use of electronic media except the use of some commercial subject databases on CD-ROM. Internet use is much below the expectation. They suggest that enhancing the usability of available resources by way of adapting user to the systems and services seems to be more viable.

Majid (2001)[8] carried out a survey where he includes 39 academic libraries from three South Asian countries; Bangladesh, Pakistan and Srilanka, his objective was to find out the trends of using CD-ROM in academic libraries. He founds that only 51.3% surveyed libraries used CD-ROM technology.

Accept these there were not more research work has been done to find out the status of digital resources and users orientation towards them in the libraries of Bangladesh. In true sense this is the first complete attempt to find out the existing digital resources condition in the country.

State of Digital Resources in Bangladesh

There is no uniformity in the Library practice in Bangladesh. There are different types of library systems are active in Bangladesh with their own personal rules and regulations. From the urban area to more developed cities and even in the capital city there are different types of libraries which are providing their services among different types of users with their diverse levels of resources and services according to the nature of the library. From the observation of library practice, libraries of Bangladesh can be categorized in the following broad areas: (i) National library, (ii) Public libraries, (iii) Academic libraries, (iv) Special/Research libraries (Islam, 2010) [9].

National Library

The National Library of Bangladesh is currently run by the Directorate of Archives and Libraries under the Ministry of Cultural Affairs. The National Library is the legal depository of all new books and other printed materials published in the country under the Copy Right Law of Bangladesh (Islam, 2010). [10]

Currently, National Library of Bangladesh has only 03 workable computers with internet facility. Automation Section of National Library was set up in 1996 with 6 computers. Users are not fully satisfied with the traditional services provided by National Library of Bangladesh.

ICT status in National Health Library and Documentation is better than National Library of Bangladesh. According to Shuva,(2010) [11] there are not any kind of digital resources available in the national library of Bangladesh which can be fall in the following categories; E-journals, Electronic books, E-Dictionaries, E-Reference books and Reference databases.

Public Library

Central Public Library of Bangladesh is the largest public library in Bangladesh. It also houses the Public Library Department which, with 68 public libraries including the Central Public Library in its jurisdiction, is managed by the Directorate of Public Libraries under the Ministry of Cultural Affairs. Beside this there are 1608 non government public libraries in the country running with government assistance (Islam, 2010). [12]

Among the 68 government public libraries only 14 public libraries have computers for administrative use. Bangladesh Central Public Library has 18 computers and the other 13 libraries have one computer each (Shuva, 2010). [13] It is a matter of sorrow no internet service is available and it is needless to say that any sort of digital resources was not found among the public library of Bangladesh.

Academic Library

There are different types of academic libraries exist in Bangladesh. According to Hand Book, University of Bangladesh (2009) there is 31 public, 51 private and 2 International universities are currently in operation including their libraries for the execution of the required resources and services to run the university properly. According to BBS,2006 (Bangladesh Bureau of statistics) there are 2288 colleges(private and public), 24 medical colleges, two dental colleges, 24 polytechnic institutes and engineering colleges, 42 law colleges, 4 agriculture colleges and two home economics colleges in Bangladesh.

According to the rule of the government for affiliation, any college must have a library with minimum 500 collections. Besides this there are about 1150 high school libraries in Bangladesh. ICT statuses of some private university libraries are quite satisfactory. They are offering time befitting services to its users. ICT status in public university libraries in-comparison with some private university libraries are not satisfactory (Shuva, 2010). [14]

Islam, 2010, [15]conducted a elaborative thesis work on university libraries of Bangladesh where he investigate 20 university libraries (12 govt. 7 private & 1 international), he found   95% University library of Bangladesh have computers among the sample libraries, 80% have internet connections in their library, 55% library has scanners, only 20% sample libraries have digital camera, 25%   libraries use modem. 75% has UPS or generator facilities,95% provide printing facilities, 45% library use barcode technology.100% library has telephone facilities. 50% has fax in their library,90% have e-mail address, only 5% library use telex, 5% has teleconferencing device, 25% library has television, VCP or VCR in their library, 60% has CD/DVD player and *25%* sample library have projector. He also found that 20% University libraries of Bangladesh does not have any sort of digital information resources, Except that rest of the library has any sort of digital information resources. In case of college libraries except a few most of the colleges do not have any proper library facilities with them.

Special Library

There are around 1000 special libraries in Bangladesh. The exact number of special libraries functioning is not known since no one has taken this initiative up to now. Notable special libraries includes: ICDDR-B Library, BIRDEM, SAARC Agricultural Information Center, CIRDAP Library, Community Development Library etc. Special libraries of Bangladesh offer good number of ICT based services to its users. Special libraries based in Dhaka offer time befitting, up-to-date library services to its users (shuva, 2010). [16] No specific literature support was found regarding the uses of digital resources at special libraries of Bangladesh.

Encounter Difficulty at Libraries by Librarians in Developing Countries

New tools of information technology have absolutely changed the role & responsibilities of librarians. A number of studies have been conducted to explore the problems faced by librarians. Given section reviews the studies conducted at International level in general and particularly in developing countries to investigate the problems confronted by the librarians.

Ademodi & Adepoju (2009) [17] investigated the computer skill among librarians in academic libraries on Ondo and Ekiti State in Nigeria. It was found the shortage of computers and computer skills among professionals. The study recommended that more attention and funds should be provided for training and procurement of ICT infrastructure in Nigerian University libraries. For computerization purpose, library administration should solicit funds and assistant from foreign agencies and foundations who are interested for the cause.

Adomi & Anie (2006) [18] in their research on computer literacy skills of professionals in Nigerarian University libraries concluded that most of the professionals do not posses high level of computer skill and their use of computer and technology is still maturing. They recommended that library management and leaders should organize and offer inhouse computer training programmes for librarians and enough computers should be provided in this regard.

Trushina (2004) [19] discussed the issues related to the internet as well as the correlation of professional codes and their implementation in library practice. He stated that libraries depend on ethical principles more than any other institution because library services are essentially human-oriented. He stressed that librarians must follow the intellectual freedom principle and they have a moral responsibility to the patrons.

Hashim & Mokhtar (n.d) [20] studied the trends and issues in preparing new era librarians and information professionals. They reported that the following trends are essential for new era librarians' i. e. a vision towards information and knowledge rich society, globalization of information, integrated and widespread ICT applications, growth of electronic/internet resources, role of digital/electronic/virtual library, access role replace custodial role, strategic alliances, partnership and collaborations, librarians need new management knowledge and skills, specialized knowledge & skills in library and information management, trend to develop digital contents to facilitate access. It was concluded that new era librarian will become a guardian of digital information and digital librarians with newly acquired skills can play a meaningful and leading role in the networked information society of the millennium.

Sreenivasulu (2000) [21] studied the role of a digital librarian in the management of digital information systems. He stressed that the multimedia nature of the next generation of digital libraries requires the digital librarians (DL) to be essentially a type of specialist librarian who has to manage and organize the digital library, handle the specialized tasks of massive digitization, storage, access, digital knowledge mining, digital reference services, electronic information services, search co-ordination, and manage the archive and its access. He should be well-versed in markup languages, cataloguing, metadata, multimedia indexing and database technology, user interface design, programming, and Web technology.

Johnson (2007) [22] viewed library and information science education in developing countries. He concluded that LIS programs in developing countries continue to suffer from lack of financial support by governments.

Wallis (2005) [23] found that information literacy is vital skill set for citizens of information societies. They suggested that the librarian must support learning at all levels. They are needed to pass skill set of technological and media literacies to citizens at all levels of society for economic, social and personal empowerment.

Rahman, Khatun & Islam (2008) [24] reviewed the library education in Bangladesh. The study found that majority of institutions in Bangladesh do not have well-equipped computer labs or sufficient numbers of computers for students. A sufficient number of classification and cataloguing tools (DDC, LC, Sears list of subject headings for practical were not present. Many institutions either have no library or inadequate collection of textbooks. Professional's status was also found very low, low pay scale and limited opportunities for promotion.

In Sri Lanka, Wijayaratne (n.d) [25] probed the challenges encountered by the librarians of developing world in providing library services to support open and distance learning. It was concluded that the attitude of the government towards libraries in Sri Lanka has been changed during the last few years and the government has made several approaches to develop the libraries particularly University libraries. Government also identified the capacity of distance education to accommodate the huge number of A/L completers who cannot gain admission to learn. It was found very important for the OUSL to boost the process of achieving its development goals to upgrade the quality and maintain the standards of distance education in Sri Lanka.

In Nepal, Siwakoti (2008) [26] found that there was no government agency to control, monitor and evaluate the school libraries activities. There was lack of awareness programs, budgetary constraints, inadequate space, inadequate library materials, lack of trained and skilled manpower and lack of appropriate government policy and lack of information literacy.

In Malaysia Lee, Brown, Mekis & Singh (2003) [27] investigated that there was lack of full-time teacher librarians and selected teachers are asked to take charge of the school resource center as one of their administrative duties. There was no uniform current syllabus for the training of teacher librarians. The biggest problem which was found is that in Malaysian teacher librarians are facing professional isolation.

In Iran Gavgani, Shokraneh & Shiramin (2011) [28] concluded that librarians do not have traditional skills and sufficient background knowledge to meet the changing needs of their customers. They need to be empowered by new skills and information before going to empower their patrons. So there must not be a gap between librarian's professional/technological knowledge and their societies informational need that to be answered by librarians. Need for changing the syllabus of medical library and information science education in Iran was also felt.

In India Jestin & Parameswari (2002) [29] explored the challenges for library professionals in the new millennium. It found that library professionals in India were subjected to various challenges. The introduction of computers and new technology was a challenge to all librarians. It was conclude that librarians should be ready to participate in the process of generating and distributing information and knowledge for quality of life and education for all. Librarians must unite to withstand the revolutions that will occur in the information and communication fields. Similarly, Dasgupta (2009) [30] searched out that in India there is non-existent of norms and standards for the education of librarians. Problems for Indian librarians discovered in his study were emergence of new LIS schools, insufficient faculty strength, lack of accreditation bodies, lack of proper library facilities, inadequate physical facilities, little attention for selection criteria, and lack of apprenticeship programs. Study suggested that the Government of India should play a leading role in promoting LIS education in India, by creating more job opportunities for LIS professionals and removing disparity in pay scales among LIS professionals.

Recommendations

The libraries of bangladesh can increase digital resources with minimum efforts and expenditure by the following ways:
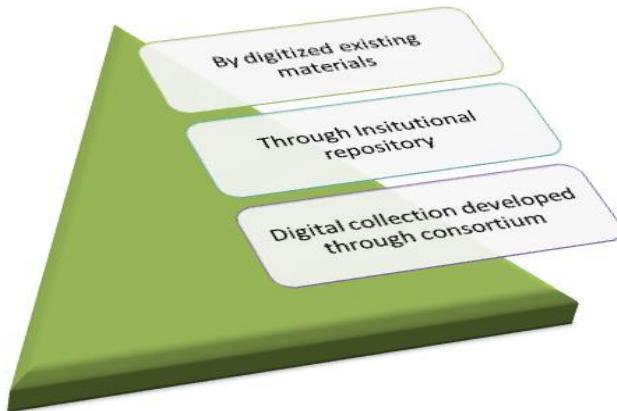
Figure 1: Ways to Increase Digital Resources

By Digitized Existing Materials

Digitization is primarily the process of converting written and printed records into electronic form. The content may be text, image, audio or a combination of these (multimedia). The output of digitization process is an electronic document that can also be hosted on Internet/Intranet. The electronic document may be in Portable Document Format (PDF) or Tagged Image File Format (TIFF). PDF format is usually used to store information on the Web, as the file size is relatively small and easily downloadable and transferable. PDF is also has a unique print/display format that is the same on any platform and can be read using Acrobat Reader (downloadable freely from the internet). TIF Format is mainly used for storing records of archival value (Murthy, 2005). [31]

To increase digital collections /digital information resources/electronic resources among the libraries of Bangladesh, digitized existing materials can be a good idea. Because most of the university libraries of Bangladesh especially public university libraries has a good number of rare collections, which they can digitized easily, most of the cases copy right law will not be a obstacles here. University libraries also can digitized their own publications, report, manuscripts, magazine, brochure etc. some guidelines mentioned below:

- At first library have to established a written policy about what kinds of materials they want to digitize.

- Whereas all the library materials cannot possible to digitize, in that case university libraries of Bangladesh can digitized their rare materials and whose those are in a danger of lost like old manuscripts, photo images, maps, old news papers and magazines, these, reports, liveries and universities own publication, and other pieces of history.

- Technical and financial need assessment have to be done and according to them proper policy have to be established.

- University library can take assistance from the IT and computer science department for their expert opinion and assistant, Information science and library management department also can help in this regard. Other types of libraries also can contact with this kind of organizations.

- The library has to collect the necessary equipments for digitizing materials and they also have to be making sure the necessary finance available.

- Extra manpower can be needed, in that case they have to appoint experienced and eligible person for digitizing materials.

- Finally the library have to be established a work flow of the whole digitizing process, the work flow must be simple and free from unnecessary complexity, so that it can work smoothly. The simple work flow can be like this; scanning, OCR, PDF, store in CD-ROM and also in server, process materials (cataloguing, classification etc.) and finally uploading.

Through Institutional Repository

Another possible solution for the libraries of Bangladesh to increase their digital collections/digital information resources is to create "Institutional repository". A digital Institutional repository can be any collection of digital material hosted, owned or controlled or disseminated by an academic institution. A particular type of Institutional Repository is; a digital archive of the intellectual product created by the faculty, research staff and students of an institution and accessible to end users both within and outside of the institution. Some guidelines to create and maintain institutional repository are as follows:

- At first the university library should establish an effective plan to initiate digital institutional repository with assistant from computer science and IT department. Information science and library management department also can a play a crucial part in this regard.

- University libraries can store all their own publication, like annual reports, journals, and other publications in digital form.

- Universities can request their researchers to give a digital copy of their research work, later that can be placed in the institutional repository.

- Universities also can deposit thesis and other research work from the students in digital form.

- All the digital collections should be well organized and have to make provision to find them in online environment by using a standard software. For example Dspace can be an ideal solution for the university libraries of Bangladesh and more importantly it is open source software and free from cost.

Digital Collection Developed through Consortium

Library consortium is not any more a new concept in library and information science field though the libraries of Bangladesh are still unable to make an effective and fruitful library consortium. A Consortium could be described as a group of organizations who come together to fulfill a combined objective that usefully requires co-operation and the sharing of resources. And need to have a clear mutual goal in order to ensure their success. The aim should be to deliver "more than the sum of the individual parts". A library Consortium formation can be local,regional,state,national and inter institutional level. [32] Library consortium can help the university libraries of Bangladesh to increase the digital resources/electronic resources by the following ways:

- It is not possible for the university libraries of Bangladesh to collect and acquire all the necessary digital information resources all alone, in that case consortium is a good idea for the university libraries of Bangladesh.

- A comprehensive collection building is possible through consortium.

- Library can avoid duplication of core collection especially for core journals.

- It provides the scope of electronic archives.

- Through consortium easy access of digital resources is possible on internet by developing common resources database.

- So, all the university libraries of Bangladesh should make a better consortium to enhance their digital collection which will be ultimately money and time saving and able them to provide modern library facilities and services.

Apart from this, the following recommendations also should consider to increase the digital information resources among the university libraries of Bangladesh

- An exhaustive survey should be carried out to analyze existing resources; infrastructural facilities and users needs regarding digital information resources among the university libraries of Bangladesh, from the findings action plan should be formulated.

- The necessary administrative and financial measures needed for increasing digital information resources, should be taken by the government, for instance, University Grant Commission of Bangladesh should act as the concerning body in this regard.

- Librarians should influence administrators at the higher level of the importance of the use of computers and other related technologies in libraries in Bangladesh and convince them that digital resources will improve the effectiveness of information services and access to information which they need for decision making.

- From the findings it is clear that most of libraries do not have adequate infrastructural facilities, so ICT infrastructure should have to increase as soon as possible.

- The governments have to co-operate with the libraries and have to allocate them adequate fund so that they can increase digital information resources.

- The parent body that is university must have to co-operate with library authorities and have to give them some specific fund for building and increasing digital information reserves.

- National digital information resource task force should be created immediately; they will be monitoring the improvement in regarding the digital information resources collections improvement among the libraries.

- All the university libraries of Bangladesh should be united and should have to create digital resources consortium among them which will be give them unbound freedom to collect digital resources.

- Practical digital resource management course should be integrated in the LIS curriculum at the university level, so that the upcoming library professionals of Bangladesh gain some practical knowledge to handle and manage digital resources.

- Library and information science teaching and training institutions should introduce different types of training programs for unskilled library professionals. So that they can overcome their fear about digital resources and can enjoy the blessing of modern science.

- Different library associations of Bangladesh, such as LAB, BALID have to come forward and should organize seminars, workshops, etc. to create awareness among librarians about current developments in technology.

- International cooperation is a must in the library field. Without that library of third world countries, like Bangladesh will be far behind from the modern services and facilities.

- Librarians need to proactive in making e-collections decisions.

- The libraries must have to develop a collection development policy for digital resources.

- There should be developing specific criteria for adding and cancelling e-resources.

- Libraries have to join larger international, multi-national, regional and Trans –Continental digital library federations to further obtain leverage in gaining access to content.

REFERENCES

1. Vinayagamoorthy, P. (2007). Digital library initiatives in Engineering Educational Institutions in Tamil Nadu: an analytical study. An unpublished PhD. Thesis, University of Madras, India.

2. Islam, Shariful (2010). "Present status of digital resources and users perceptions towards them among the university libraries of Bangladesh: an exploratory study," M.A. thesis, University of Dhaka.

3. Alam, M. S. (1998). Automation trends in special libraries of Bangladesh, *Bangladesh journal of library and information science,* 1(1): 47-63.

4. Munshi, M. N. & Ahmed, S.M.Z. (2000). Status of library automation in Bangladesh: an overview of some existing problems and solutions, *Social Science Review,* 17(2).

5. Alam, Saiful (2007). Information system for health and population sector in bangladesh :evolution, structure, gaps and need based design (unpublished Phd thesis). Dhaka-department of Information Science and library management, 2007.

6. Islam, Shariful (2010). "Present status of digital resources and users perceptions towards them among the university libraries of Bangladesh: an exploratory study," M.A. thesis, University of Dhaka, 24.

7. Chandel, A. S, Mezbah-ul-Islam, M and Gupta, Sudhir (2003). Use of resources by research scholars in university libraries with special reference to electronic media. *Caliber,* 1-11.

8. Majid, Shaheen (2001). Trends in using CD-ROM in academic libraries of three South Asian countries-Pakistan, Bangladesh and Srilanka. *Aslib proceedings,* 53(2): 68-76.

9. Islam, Shariful (2010). "Present status of digital resources and users perceptions towards them among the university libraries of Bangladesh: an exploratory study," M.A. thesis, University of Dhaka.

10. Islam, Shariful (2010). "Present status of digital resources and users perceptions towards them among the university libraries of Bangladesh: an exploratory study," M.A. thesis, University of Dhaka, 24.

11. Shuva, Nafiz Zaman (2010). Promoting Use of Electronic Resources in Libraries of Bangladesh: A Developing Country Perspective. Paper presented at the Electronic Resources Librarians Conference held from February 1-3, 2010 at the Austin University, Texas, USA.

12. Islam, Shariful (2010). "Present status of digital resources and users perceptions towards them among the university libraries of Bangladesh: an exploratory study," M.A. thesis, University of Dhaka, 24.

13. Shuva, Nafiz Zaman (2010). Promoting Use of Electronic Resources in Libraries of Bangladesh: A Developing Country Perspective. Paper presented at the Electronic Resources Librarians Conference held from February 1-3, 2010 at the Austin University, Texas, USA.

14. Shuva, Nafiz Zaman (2010). Promoting Use of Electronic Resources in Libraries of Bangladesh: A Developing Country Perspective. Paper presented at the Electronic Resources Librarians Conference held from February 1-3, 2010 at the Austin University, Texas, USA.

15. Islam, Shariful (2010). "Present status of digital resources and users perceptions towards them among the university libraries of Bangladesh: an exploratory study," M.A. thesis, University of Dhaka, 24.

16. Shuva, Nafiz Zaman (2010). Promoting Use of Electronic Resources in Libraries of Bangladesh: A Developing Country Perspective. Paper presented at the Electronic Resources Librarians Conference held from February 1-3, 2010 at the Austin University, Texas, USA.

17. Ademodi, D.T., & Adepoju, E. O. (2009). Computer skill among librarians in academic libraries on Ondo and Ekiti States, Nigeria. *Library Philosophy & Practice*.

18. Adomi, E. E., & Anie, S. O. (2006). An assessment of computer literacy skills of professionals in Nigerian University libraries. *Library Hi Tech News*. 23(2): 10-14.

19. Trushina, I. (2004). Freedom of access: Ethical dilemmas for Internet librarians. *The Electronic Library*. 22(3): 416-421.

20. Hashim, L. B. & Mokhtar, W. N. H. W. (n.d). Trends and issues in preparing new era librarians and informationprofessionals.Available:http://www.lib.usm.my/elmuequip/conference/Documents/ICOL%202005%20Paper%203%20Laili%20Hashim%20&%20Wan%20Nor%20Haliza.pdf

21. Sreenivasulu, V. (2000). The role of a digital librarian in the management of digital information systems (DIS). *The Electronic Library* 18(1): 12-20.

22. Johnson, C.A. (2007). Library and information science education in developing countries. *The InternationalInformation & Library Review*. Vol. 39, Pp. 64-71.

23. Wallis, J. (2005). Cyberspace, information literacy, and the information society. *Library Review*. 54(4): 218-222.

24. Rahman, A. I. M. J., Khatun, M., & Islam, M. M. (2008). Library education in Bangladesh: Strengths, problems and suggestions. *Library Philosophy & Practice*. Available: http://unllib.unl.edu/LPP/rahman-khatun-mezbahulislam.htm

25. Wijayaratne, A. (n.d). Challenges encounter by the librarians of the developing world in providing library services to support open and distance learning: The Open University of Sri Lanka library experience. Available: http://pcf4.dec.uwi.edu/viewpaper.php?id=184&print=1

26. Siwakoti, S. (2008). Status of school library development in Nepal. *Sri Lanka Journal of Librarianship & Information Management*. 1(1): 13-19.

27. Lee, S., Brown, G., Mekis, C., & Singh, D. (2003). Education for school librarians: Trends and issues from selected developing countries. World library and information congress: 69th IFLA general conference and council. Available: http://archive.ifla.org/IV/ifla69/papers/069e-Lee_Brown_Mekis_Singh.pdf

28. Gavgani, V.Z., Shokraneh, F. & Shiramin, A.R. (2011). Need for content reengineering of the medical library and information science curriculum in Iran. *Library Philosophy & Practice*. Available: http://unllib.unl.edu/LPP/gavganishokraneh-shiramin.htm

29. Jestin, J., & Parameswari, B. (2002). Challenges for library professionals in India in the new millennium. *Library Philosophy & Practice*. 4(2). Available: http://unllib.unl.edu/LPP/jestin1.html.

30. Dasgupta, A. (2009). Preparing future librarians in India: A vision for LIS Schools of Indian Universities in the 21st Century. *IFLA*. Available: http://www.ifla.org/files/hq/papers/ifla75/126-dasgupta-en.pdf

31. Murthy, Sudha S. (2005). Digitization: a practical experience at the National Tuberculosis Institute, *Bangalore. Information studies,* 11(2): 109-110.

32. (http://www.isical.ac.in/~serial/consortia/CBSOR-11.pdf).