CURRICULUM CONTENTS OF DIGITAL LIBRARY EDUCATION IN NORTH INDIA: A MODULE PROPOSED FOR THE DEVELOPMENT OF DIGITAL LIBRARY EDUCATION

Joginder Singh

Sr. Assistant Librarian , University of Jammu.

Abstract: *This article examines the existing digital Library contents introduced in LIS curricula in North Indian Universities/Institutes. The most of the LIS Schools have not integrated the concept of digital libraries into their departmental curricula. But few LIS schools have integrated digital library contents as a sub topic under Information Technology paper. The Results shows that Digital Library course contents in LIS syllabi are being offered by few University Departments/Institutions in North India. Even today most of the University Departments/Institutions have not introduced Digital Library course as a separate paper in their LIS curricula. The Library schools in Northern Indian Universities have insufficient infrastructure and unskilled technical personnel to develop Digital Libraries as a standalone course in their curricula. This article review and analyzed digital library course content of LIS curricula of selected University Departments/Institutions conducting LIS education in North India. The finding shows that there is a need to develop digital library course contents and a separate paper on digital libraries as a compulsory course in LIS curricula.*

Keywords: *Library and Information Science Education, Digital Library, LIS Curricula, Digital Library Course Contents.*

1.INTRODUCTION:

The Library Science as a course of study was initiated with the basic skills such as classification, cataloguing and organization of documents etc. Library education is a composite discipline, comprising the study of subjects such as Psychology, Computer and Communication Technology, Management, Statistics, Linguistics etc. LIS education underwent enormous changes due to social, economic, and technological progress in the 21st century. Information Technology has made substantial impact on Library and Information Science education in global level. The advent of Computer, Internet and Information Communication Technology stepped up flows of electronic information and practice of library services in digital environment. Asundi & Karisiddappa states that "Technological innovations in LIS began with the adoption of 'mechanization' in indexing and information retrieval techniques. Today it has entered into the era of 'virtual library' using digital technology. In the process of these contemporary changes are incorporated into the educational curriculum and course contents. The LIS professional has a greater role to play in content management in the IT environment". (Asundi & Karisiddappa, 2004).

2. OBJECTIVE AND METHODOLOGY

The purpose of this study is to design a digital library course model in view of the emerging needs in digital era. The objective of this article is to review and analyzed digital library course content of LIS curricula of selected University Departments/Institutions conducting LIS education in North India. There is a need to develop digital library course contents and a separate paper on digital libraries as a compulsory course in LIS curricula. The study suggested model syllabi. Data was collected from 32 LIS Universities/Institutes from seven states (J&K, Himachal

Pradesh, Uttrakhand, Punjab, Haryana, Uttar Pradesh and Rajasthan) and two Union territories (Delhi and Chandigarh) of Northern India.

3. LIBRARY AND INFORMATION SCIENCE EDUCATION

Library education began with the establishment of first school of librarianship at Columbia University in 1887 by Melvil Dewey. There was even no uniform pattern of education in the initial stages of its development. In UK, the apprentice method was best for imparting education and training to all professional fields. In 1885 the Library Association assumed the responsibility of conducting examinations. There are currently 16 Universities in the UK which have courses accredited by CILIP. Currently there are 14 undergraduate courses, 7 B.A. (Bachelor or Arts), 7 B.Sc. (Bachelor of Science), 29 M.Sc. (Master of Science) and 15 M.A. (Master of Arts) (Parker, Sandra, 2005). Library schools in Western countries moved so far away from teaching librarianship in a form needed by their employers, that they were attracting fewer and fewer students from the library side. Back in 1990 Michael Gorman lamented the drift of library schools away from librarianship when he wrote "now that many of the schools have abandoned all but the most cursory attempts to educate librarians, libraries are increasingly train and educate their new professional staff (Gorman, 1990: 463). The apprentice method was gradually replaced by proper university courses in the USA. As a result for the rest of the 19th century, and for the first half of the 20th century, the usual method of qualifying as a librarian was by first joining the staff of a library, and then preparing by part-time means of study for the examination held by the Library Association, USA (Bramley, 1975: 12). S.R. Ranganathan played a vital role in the growth and development of library education, libraries, and the library profession in India. Development of LIS education in India is completed nearly 100 years. The first one year postgraduate diploma course in library science, which in several ways served as the model for developing library science training programme in the country both before and after Independence, was established at the initiative of Ranganathan, at Madras University as early as 1937 (Mangla, 1998: 286). Today professional education of library personnel towards achievement of the highest wisdom in promoting utilization of modern techniques and knowledge for the benefit of mankind is a major concern (Bhargava, 1988: 65).

Gladney (1994) emphasized the fact there is vital need for curriculum design and development in the field of Digital Libraries (DLs). More amount spent in digital library research but since 1990s there has been no parallel investment to support teaching and learning about DLs and these investment is of ongoing importance in the USA, Australia, China, Europe, India, and Japan, where significant DL research is being conducted. Without investment in education related to DLs, we face a future with many digital libraries, but few digital librarians to ensure their success (Jeffrey Pomerantz and Barbara M. Wildemuth, 2006). Spink (1999) revealed that systematic support for developing DLs courses and curricula, and no coordinated effort in library and information science to provide DLs. Skilled LIS professionals lacking and technical experts demanded to play the role of digital Librarian. Emerging jobs market demand for digital librarians and digital libraries essentially warrants the restructuring of the LIS curricula.

4. ICT COMPONENTS IN LIBRARY AND INFORMATION SCIENCE CURRICULA

The UGC Model Curriculum has given a lot of freedom to the LIS departments to design their syllabus with modifications as per the local needs. LIS was also influenced by the impact of ICT by the end of the twentieth century. Due to information explosion, information revolution, exponential growth of knowledge, changes in the information scenario as like multimedia, CD-ROM, on line Information Retrieval Systems, Web via the Internet were the buzz words. LIS professionals feel that they must be equipped with the new technology to handle the challenges and they should be familiar with existing knowledge, tools and techniques (UGC Model Curriculum, 2001). The Table 1 & Table 2 shows fundamental of computers and IT to give the overview of nomenclature of ICT papers offered.

Table: 1: ICT papers offered at BLIS level

NOMENCLATURE OF ICT PAPERS OFFERED AT BLIS LEVEL	TOTAL	%
Information Technology : Basics	24	75
Library and Information Technology	4	12.5
Computer Applications in libraries	2	6.3
ICT Applications in LIS	2	6.3
Information Communication Technologies: Basics	1	3.1
Computer Basics and Applications	1	3.1
Information Technology and Library Automation	1	3.1
Elements of Information Technology	1	3.1
ICT: Library Automation, networking	1	3.1
Computer Applications in Library and	1	3.1

Table-2: ICT papers offered at BLIS level

NOMENCLATURE OF ICT PAPERS OFFERED AT MLIS LEVEL	TOTAL	%
Information Technology	18	56.3
Information Technology Applications	6	18.8
Information & Communication Technology: Applications	2	6.3
Advanced ICT Applications in LIS	2	6.3
Information Technology Applications in Libraries	1	3.1
Information Technology: Basics & Applications	1	3.1
Information & Communication Technologies Applications in LIS	1	3.1
Application of ICT in Libraries	1	3.1
Advanced Computer Applications in LIS	1	3.1
Library Automation & Networks	1	3.1

5. DIGITAL LIBRARY COURSE CONTENTS INTRODUCED IN UGC MODEL CURRICULUM

The digital library contents covered under "Information Technology" paper recommended by UGC Model Curriculum 2001.
- ❖ Genesis, Meaning, Definition, Objectives, Scope of Digital libraries
- ❖ Image formats, Audio formation
- ❖ Storage media formats
- ❖ Software and Hardware for digital libraries, OCR, Image Editing software
- ❖ Interoperability Standard, Input capture devices, scanners, digital, movie cameras
- ❖ Digital Preservation, Data Warehousing, Data Mining and metadata.

6. NORTH INDIAN UNIVERSITIES/INSTITUTES ARE OFFERING DIGITAL LIBRARY COURSE CONTENTS IN THEIR DEPARTMENTAL COURSE CURRICULA

The Northern Indian Universities/ Institutions are adopting digital library contents in "Information Technology" paper in their Departmental course curricula are as given in Table 3:

Table -3: Northern Indian Universities/Institutes are Offering Digital Library Contents

Northern Indian Universities/Institutes are Offering Digital Library Contents:	18	56.3
Digital Libraries: Genesis, Definition, Objectives, Challenges, Opportunities.	13	40.6
Digital Library Design, Content Creation & Management.	7	21.9
Virtual Libraries	7	21.9
Basics of Artificial Intelligence (AI).	7	21.9
Expert System with referance to Library & Information Centres.	7	21.9
Software & Hardware for Digital Libraries, OCR, Image Edition Software, Open Access, Standards & Open source in Libraries, digital & movie cameras.	6	18.8
Metadata	6	18.8
Digitization & Tools: Techniques of Digitization, Resolution, Imaging.	5	15.6
Data-warehousing, Data mining & Semantic web:- Basic concepts.	5	15.6
Digitization: Concept, Need, Method & Equipments.	3	9.4
Digital Preservation: Brief Concept & Importance.	3	9.4
Files & Formats of Documents, Images, Video, Audio etc.	3	9.4
Management Information System, Data Warehousing, Data Mining, e-bulletins, e-journals, subject gateways, video text, tele-text, tele-facsmile, tele-conferencing.	3	9.4
Digital Library Softwares: D-Space, Greenstone.	2	6.3
Digital Content Management System.	2	6.3
Hybrid Libraries.	2	6.3
Data Mining, Data Migration & Data Conversation.	2	6.3
Institutional Repositories: Greenston Digital Library, D-space & E-Prints.	2	6.3
Overview of major digitization projects in India, Hypermedia organization & Searching.	1	3.1
Evaluation of Prominent Digital Initiatives at National & International Level.	1	3.1
Electronic Libraries	1	3.1

Most of the universities (62.5%) followed the basic contents digital library such as Digital Libraries: Genesis, Definition, Objectives, Challenges, Opportunities; Digital Library Design, Content Creation & Management; Virtual Libraries; Basics of Artificial Intelligence (AI) and Expert System with reference to Library & Information Centres.

7. SUGGESTION AND DISCUSSION

The main lacuna found in the above table that hardware and software part of digital library curricula not given that much importance by most of the universities. Lacunae identified in the infrastructure of LIS Departments pertaining to availability of state-of-the-art classrooms and efficient education need to be taken care. There are lacking of web-based technologies including hardware and software both need to be investigated further and ameliorated to provide the best education and training to the students. A gradual shift from the current status of 'developing' to the position of 'developed' at some future date can be brought about in a phased manner taking care of the priorities such as design and development of digital library, web based LIS courses, e-contents creation etc. Following Digital Library Module is suggesting for LIS Schools of Northern India, keeping in view their need of the emerging digital era.

Module-: Digital Libraries and Digital Library Management

Course Module Name: igital Library and Digital Library Management
Credits Allocated: 6 credits

This module aims
- ❖ To provide knowledge on concept of Digital Library, technology for organizing and digitizing library documents and concept of security, content creation and its management.
- ❖ To develop the Knowledge of hardware and software of Digital Library.
- ❖ To train the students for digital library management and creation of digital Library software.

Course Contents
Unit-1: Digital Libraries
- ❖ Digital Libraries- Concepts, Definition, need, Genesis, nature, Objectives, and scope
- ❖ Digital Library models and theory
- ❖ Issues, Challenges, and Opportunities of Digital Library
- ❖ Impact and evolution of Digital Library
- ❖ Role of Digital library in knowledge Organization, accessibility and agencies for the development of Digital Libraries- Digital Library Conferences(JCDL, ECDL and ICADL)
- ❖ National and International initiatives towards designing digital Libraries
- ❖ Digital library projects and best practices
- ❖ User interfaces, protocols and standards

Unit-2: Collection Development of Digital Libraries
- ❖ Digital library resources- e-books, e-journals, multimedia resources and other resources
- ❖ Collection development process
- ❖ Digitization process, technical issues, file formats

Unit-3 Digital Library Technology and Security
- ❖ Content creation: Creating electronic documents, files and file formats
- ❖ Digital representation and compression
- ❖ Digital imaging technology and trends
- ❖ Publication Format: audio and image, File formats eg PDF
- ❖ Born digital and legacy documents
- ❖ Digitization-Scanning, OCR, editing, publishing and Conversion to PDF
- ❖ Network platforms, architecture of LAN, server

Unit-4: Mark up Languages Use in Digital Libraries
- ❖ Creating web documents
- ❖ Creating Web documents-Mark up languages-SGML, HTML and XML
- ❖ Document creation in HTML
- ❖ HTML editors and tools
- ❖ Front page and Dream Weaver
- ❖ Features of XML and its tools

Unit-5: Digital Library Management and Creation of Digital Library:
- ❖ Digital Library Architecture, Interoperability, Compatibility
- ❖ Element of Digital Library, Digital Object Identification (DOI), Persistent Uniform Resource Locator(PURL)
- ❖ Digital Library creation, content management, metadata and searches
- ❖ Access control and DRM
- ❖ Security and preservation processes
- ❖ Digital library economics: pricing models, finding and marketing

Unit-6: Digital Library Software
- ❖ Digital Library software
- ❖ Open source software-GSDL, D Space, E-Prints and Fedora
- ❖ Main features of DLS
- ❖ Installing and developing a prototype of DLS

8. CONCLUSION

The LIS Schools in Northern Indian Universities developed their own departmental curriculum. Almost all the LIS Schools in Northern Indian Universities developed their LIS Curriculum according to the UGC Model curriculum accommodating some minor changes. A great need is felt to bring in improvements and accommodate market demands and technological changes in course contents along with, addition and deletion in course contents to suit a digital environment. As Earlier library schools produced qualified library staff to perform duties assignment to them. However, the new approach required librarians to educate students in techniques of librarianship and

becoming accomplished practitioners. This could be accomplished when LIS schools incorporate practical work as an integral part of their curriculum.

REFERENCES

1.Asundi, A. Y., & Karisiddappa, C. R. (2004). Curriculum requirements for IT and electronic information environment: perspectives on a macro-structure. In Information Technology applications in libraries: a textbook for beginners, edited by M. Mahapatra & D. B. Ramesh, pp. 1, 590.

2.Bhargava, G. D. (1988). Recent trends in education for librarianship. In Singh, Sewa (Ed), Librarianship and library science education: a collection of essays in honour of Dr J. S. Sharma, Ess Ess: New Delhi, p. 57-65.

3.Bramley, G. (1975). World trends in library education. Clive Bingley: London, p. 12.

4.Gladney, H., Z. Ahmed, R. Ashany, N. Belkin, E. A. Fox, & Zemankova, M. (1994). Digital Library: Gross Structure and Requirements. IBM Almaden Research Center, Virginia Tech Department of Computer Science IBM Research Report RJ9840, pp. 94-25.

5.Gorman, M. (1990). A Bogus and Dismal Science; the Eggplant That Ate Library Schools. American Libraries 21 (May), 462–63. http://www.librijournal.org/pdf/1999-1pp1-10.pdf

6.Mahapatra, G. (2006). LIS education in India: Emerging paradigms, challenges and propositions in the digital era. Presented at the Asia-Pacific Conference on Library & Information Education & Practice, Singapore.

7.Mangla, P. B. (1998). National policy on libraries, information systems and services: an overview. In fifty years of library and information services in India, edited by M. K. Jain & Shipra, Delhi, Ibid, pp. 7-293. http://202.120.13.26/isal/isal_77.htm

8.Parker, S. (2010). Education for Library and Information Science in the UK. Visiting Research Fellow, Research Center for Knowledge Communities, University of Tsukuba. Retrieved from http://www.slis.keio.ac.jp/~ueda/liperfiles/england_parker.doc

9.Pomerantz, J., & Wildemuth, B. M. (2006). Curriculum Development for Digital Libraries. School of Information and Library Science, University of North Carolina Chapel Hill.

10.Spink, A., & Cool, C. (1999), Education for digital libraries, D-Lib Magazine, 5 (5). Retrieved from http://www.dlib.org/dlib/june99/spink/05spink.htm

11.UGC model curriculum, library and information science. (2001). New Delhi, University Grants Commission, Chairman: C. R. Karisiddappa.

12. Varalakshmi, R. S. R. (2009).Curriculum for Digital Libraries:An Analytical Study of Indian LIS Curricula. D-Lib Magazine, 15 (9/10).