Journal of Information and Knowledge Management
Information Impact
ISSN: 2141 - 4297 (PRINT)
ISSN: 2360 - 994X (ELECTRONIC)
Vol 5, No 2
December 2014

Implications of Information Technology on the Training of Library and Information Science Professionals in Nigeria: An Analysis of the Curricula of some Selected Library Schools

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Abstract

The advancement in information and communication technology has brought a lot of changes not only on the library and information services but also on the roles and expectations of the professionals. As a librarian one is expected to do more and more with fewer and fewer people. Therefore, it is important that there is a new change in perspective. As the saying goes, change or perish. This paper attempts to understand what a successful, relevant and dynamic library and information professionals must be in this Information Age. It also focuses on the issues, trends and challenges in preparing new era professionals. Curriculum pertaining to the development of the 21st century library and information professionals is also discussed.

Keywords: information technology, information architecture, curriculum, professional training

Introduction

Change is the major factor of human life. There is great importance to change in the present era and it is the cause of human progress. The Library and Information Science profession is no exception to this. Rubin (2004: 79) observes that "the scope and rapidity of change within our profession has never been as great as it is now and the growth of electronic information technologies has challenged [the role of libraries] and resulted in considerable instability and uncertainty among librarians." Thompson (2009) provides an overview of the changes in libraries related to technology in the last five decades and explains the present situation as being different from the past because of three factors: the pace of changes in technology, the breadth of technological tools that are involved in the job of a librarian, and the depth of technical knowledge expected of librarians in the 21st century. Thomason (2009) further states that the librarian's job has become more challenging and requires librarians to be information technology (IT) experts. Today, librarians are expected to be aware of a wide variety of tools,

proficient at troubleshooting, able to create content using IT, and able to change rapidly with the technological environment of their users. Librarians are discovering that their IT departments are no longer able to handle all of the demands stemming from the many different types of technology now available in the area of library and information science. Therefore, librarians are increasingly expected to provide some level of technology support for themselves. Libraries have traditionally played a key role in providing access to information and disseminating it across the community. That role has now extended to include facilitating access to innovative technologies (Thompson, 2009).

As a result of change, new concepts are coming up. In the age of information society, the task of fulfilling the reader's expectations depend upon the skillful librarian. To prepare skilled library and information science professionals, the library and the curriculum is very important. In the present environment, the library is not only confined to the transaction of books but it has become a centre of information. Therefore, it is very necessary to apply these new trends in the curriculum. The current trends in library and information science can be considered in the following ways:

- Knowledge of Computer: Today's age is termed as 'computer age'. One who has no knowledge of computer is regarded as illiterate. That is why the content of computer is included in Library and Information Science curriculum.
- Internet: The knowledge of Internet is the need of the time because Internet is an important factor of today's life. The future Librarian must be given the knowledge of this technique.
- Use of Computer Cataloguing, Metadata etc: With the use of computer old topics like classification and cataloguing is taught in a new fashion nowadays.
- Library Security: In order to make the Librarian cautious regarding the library security, they are to be made acquainted with the new techniques. These include magnetic security system, CCTV and RFID, etc.
- The Library and Information Science Education is imparted through distance education mode: The distance education has made it possible for many people to take education while doing a job.
- Information Literacy Programme: It is really very difficult to reach up to the expectations of readers. Therefore, it became the need of the time to arrange information Literacy programme. It will ultimately equip the librarian with some specific skills.

Objectives of the Study

The main objectives of this study are:

- To show the integration of IT in the LIS curricula in Nigerian library schools to meet the present requirement.
- To propose the restructuring of LIS courses to integrate the IT.

Literature Review

Advancement in Information technology has brought about tremendous progress in university education across the globe. This is because it has brought about dramatic and dynamic changes in the global system of education to which LIS education belongs. Olatokun (2007) who quoted Jacobsen (1998) observes that ICTs are rapidly affecting the way university education is delivered and research conducted. They are also currently being used effectively in higher education for information access and delivery in libraries, for research and development, for communication, and for teaching and learning.

In the same vein, Igwe (2005) noted that the advent of electronic mail, PCs on every desk, the Internet and its application to education have produced amazing results. Today Information and Communication Technologies are integral part of LIS practice and training at the global level. Mohammed (2008) asserts that "Information and Communication Technologies (ICTs), particularly the Internet, Intranet and other network technologies have continued to impact positively on the methodologies of library and information service delivery, education and training of information providers as well as the information needs and seeking behaviour of the information seekers and users".

Daniel (2000) affirms that Information Technology (IT) can be described as the main grand hero of the century. Driven by extreme courage and unlimited ambition, IT replicates itself like a virus sweeping and overshadowing everything on its path. Today, the siren of the Information Technology is being heard loud and clear and in every sphere of human endeavor. Information Technology in Library and Information Science Schools in Nigeria is a recent phenomenon. Mohammed (2000) observes that the history of Information Technology in Nigerian Library and Information Schools cannot be divorced from the state of the art of computer education in the country when the Federal Government decided to introduce computer in the country, particularly at the higher educational institutions. In line with this

Dike (2000) notes that if Nigerian libraries and librarians are to be relevant in this information age, surely they must join the Information Technology revolution and fully incorporate IT in both theory and practice.

According to Rugambwa (2001), the common core competencies identified in Information Science education can be broadly classified to include : (1) information resources and services (sources and users) ; (2) research (quantitative) methods ; (3) information systems analysis, design and evaluation ; (4) information systems and services in individual sectors (e.g. health, agriculture, etc.) ; (5) information technology modules ; (6) information retrieval systems; and (7) management of information systems and services.

Ocholla and Bothma (2008) points out that LIS education in Africa focuses on management, information seeking and retrieval, knowledge organisation, knowledge representation and user studies, with increased use of technology. Moreover, the curricula also increasingly provide core courses or electives / auxiliaries in knowledge management, multimedia, publishing, records management and ICT. Furthermore, training is offered through various modes such as contact (full-time or part-time) and distance learning that is predominant at the University of South Africa.

Ocholla (2001) has confirmed findings in his earlier studies emphasising sound education in management, ICTs, information searching, analysis and synthesis, as well as the ability to do practical work. He defends the teaching of cataloguing and classification on the basis that they provide knowledge about the analysis and synthesis of information, as well as knowledge of the nature and structure of a given collection. Snyman (2000) asserts that LIS professionals need to have a sound theoretical background, good interpersonal and teamwork skills, the ability to think analytically and critically and ICT competencies.

Research Method

According to the National Universities Commission (2013), there are 25 accredited Schools of Library and Information Science in Nigerian universities. Due to limited time, the authors cannot review all Library and Information Science programmes (LIS). The authors selected four LIS undergraduate programmes that have their curricula on their websites: University of Ibadan, Ahmadu Bello

University, Zaria, Modibbo Adama University of Technology, Yola and Evans Ewerem University, Owerri. The aim of the authors' review is to examine the number of information system and technology courses covered by these LIS programmes. As a reference for LIS educators and students, it only intends to measure the IT content of these four Nigerian LIS undergraduate programmes. More detailed evaluations could be conducted in future studies.

Analysis of Curriculum of some Nigerian Library and Information Science Schools

Library and information professionals are increasingly working in a networked environment, dealing with library automation packages and web based information resources and services. Every LIS professional irrespective of his future place of work must have knowledge and skills for handling information technology and the competency for creation and collection of information using the Internet. However LIS schools in Nigeria are not able to adequately respond to emerging information scenario created by electronic publishing and dynamics of the knowledge society. The course revisions if any are undertaken with some patches here and there, whereas the present courses are required to be completely redefined and re-casted keeping in view the contemporary information systems, global technological developments and local needs.

Generally, traditional LIS programmes focus on library administration, cataloging and classification, archives and manuscript collections, children's librarianship, records management, public and reference services, acquisitions and collection management, special collections, etc. Information science, information systems, and information technology programmes, instead, focus on databases and data warehouses, digital libraries, emerging technologies, instructional technologies, multimedia, social media, web design and development, etc. As an interdisciplinary subject, library and information science has been more closely associated with computer programming, information systems and technology in today's information society.

Table 1: University of Ibadan library school courses

Course Code	**Course Title**	**Status**
LSE 101	Society, development and libraries	Comp
LSE 105	Library visits	Comp
LSE 111	Library resources and their roles in education	Required

LSE 113	Reference sources and services	Required
LSE 115	Introduction to conservation	Required
LSE 121	Rural community development and libraries	Elective
LSE 122	Information and development	Elective
LSE 123	History of books and printing	Elective
LSE 201	Introduction to cataloguing and classification	Comp
LSE 202	Library routines: technical and readers services	Comp
LSE 211	Introduction to bibliographies	Required
LSE 213	Serials librarianship	Required
LSE 214	Oral information	Required
LSE 218	Environmental studies	Required
LSE 219	Children's literature	Required
LSE 222	Information science	Required
LSE 221	Introduction to book publishing	Elective
LSE 225	Literacy, adult education and libraries	Elective
LSE 301	Cataloguing and classification I	Comp
LSE 303	Collection development	Comp
LSE 311	Information sources in science and technology	Required
LSE 306	Information science II	Required
LSE 312	Information sources in the social sciences	Required
LSE 313	Information sources in the humanities	Required
LSE 314	The library in education	Required
LSE 315	Indexing and abstracting	Required
LSE 317	Conservation and preservation of library resources	Required
LSE 321	Library services to target group	Elective
LSE 322	Publishing, book distribution and sales	Elective
LSE 323	Archives and record management	Elective
LSE 401	Cataloguing and classification of special materials	Comp
LSE 402	Library automation	Comp

LSE 403	Library practice (12 weeks at the end of year 3)	Comp
LSE 405	Library survey and independent study	Comp
LSE 411	Public, rural and community libraries and information science	Required
LSE 412	Academic and research libraries	Required
LSE 416	Computers in libraries	Required
LSE 417	Audio-visual librarianship	Required
LSE 421	Book indexing and editing	Elective
LSE 422	Africana	Elective

At the University of Ibadan's Department of Library and Information Science, (the first library school in Nigeria) there are forty-two courses in the Practicing librarians' BLIS programme. Table 1 shows that out of the 42 courses in the practicing librarians programme, only one course (LSE 416) deals with computers and technology. The programme is heavily traditional in nature for it has no courses covering information technology, subjects like database, data modeling, digital libraries, network management, systems analysis and management, Web design, etc.

Table 2 ABU Zaria library school courses

Course Code	**Course Title**	**Credit Units**
LIBS101	Foundation for Information Studies	2
LIBS102	Introduction to Information Systems and Services	2
LIBS201	Information Organisation I	3
LIBS202	Information Organisation II	3
LIBS203	Reference and Information Systems and Services	3
LIBS204	Management of Information Systems and Services	2
LIBS205	Sociology of Information Systems and Services	2
LIBS206	Bibliographic Information Systems and Services	2
LIBS207	Information Users	2
LIBS210	Introduction to records and Archives Management	2
LIBS211	Introduction to Telecommunication	2

LIBS212	Library Services for Young People	2
LIBS214	Rural Information Systems and Services	2
LIBS215	Public Information Systems and Services	2
LIBS216	Introduction to Computer Operating Systems	2
LIBS217	Computers in Information Work	2
LIBS218	Media Resources and Services in Information Work	2
LIBS219	Agricultural Information System and Service	2
LIBS220	Business Information Systems and Services	2
LIBS301	Introduction to Information Science	3
LIBS302	Technical Services in Libraries and Information Centres	3
LIBS303	Information Technology	2
LIBS304	Quantitative Methods in Library & Information Science	2
LIBS306	Library and Information Resource Development	2
LIBS307	School Information System and Service	2
LIBS308	Information Representation	2
LIBS309	Social Science Information System and Service	2
LIBS310	Academic Information Systems and Services	2
LIBS311	Humanities Information System and Service	2
LIBS313	Science and Technology Information Sys and Service	2
LIBS315	Research Methodology	2
LIBS316	Specialised Information Systems and Services	2
LIBS317	Serial Management in Libraries and Information Centres	2
LIBS318	National Information Systems and Services	2
LIBS320	Introduction to Application Packages	2
LIBS321	Marketing of Libraries and Information Centres	2
LIBS322	Serial Editing and Publishing	2
LIBS323	Financial Management in Library and Information Centres	2
LIBS329	Health Information Systems and Services	2
LIBS400	SIWES in Libraries and Information Centres	9

LIBS402	Introduction to Digital Information Systems and Services	2
LIBS403	Intro to Digital Information System & Service	2
LIBS404	Information Management in Libraries & Information Centres	2
LIBS405	Projects in Library and Information Work	3
LIBS412	Personnel Management in Libraries & Info Centres	2
LIBS414	Publishing and Advertising Industries	2
LIBS420	Oral Tradition and Oral Information	2
LIBS424	Preservation & Security of Info Resources & Serv	2
LIBS428	Ethics in Library and Information Work	2

Table 2 shows the number of courses in the Department of Library and Information Science of the Ahmadu Bello University, Zaria. The table shows that LIS students are offered 7 information technology based courses out of the total of 49 undergraduate courses. It represents the ratio of 0.63% of its current LIS undergraduate-level courses focusing on telecommunication, computer operating systems, and computers in information work, application packages, digital information systems and services. There is nothing on areas such as databases, information security, information tools, metadata architectures and applications, network management, system analysis, web design and development. However, it is better than the University of Ibadan programme which is still largely traditional.

Table 3: MAUTECH Yola library school curriculum

Course Code	**Course Title**	**Credit Units**
LS 101	LS 101: Foundation of Library and Information Science	2
LS 102	Introduction to Information System and Service	2
LS 103	History of Book Production	2
LS 104	History of Libraries and Information Centers	2
LS 201	Information Organization I	3
LS 202	Information Organization II	3
LS 203	Introduction to Reference & Bibliography	3
LS 204	Introduction to Telecommunication	2

LS 205	Rural Information System and Services	2
LS 206	Management and Libraries & Information Centers	2
LS 207	Education and Libraries	2
LS 208	Collection Development	2
LS 209	The Library in it Social and Cultural Context	2
LS 210	Information Users	2
LS 211	History of Nigerian Libraries	2
LS 212	Literature and Library Service to Children & Adolescents	2
LS 214	Public Information System and Services	2
LS 216	Introduction to Records and Archives Management	2
LS 301	Introduction to Information Science	2
LS 302	Technical Service in Library & Information Center	2
LS 303	Information and communication Technology	2
LS 304	Information Representing and Packaging	2
LS 305	School Information System and Service	2
LS 306	Specialized information systems and services	2
LS 307	Science and Technology Information System and Service	2
LS 308	National Information System & Service	2
LS 309	Academic Information System and Service	2
LS 310	Social Science Information System and Service	2
LS 315	Research Method	2
LS 316	Quantitative Method in Library & Information Center	2
LS 319	Serial Management in Library & Information Centers	2
LS 401	Data Processing in Libraries and Information Centres	2
LS 403	Information Management in Library & Information Center	3
LS 405	Oral Tradition and Oral Information	2
LS 407	Publishing and Book Trade	2
LS 409	Government Publication	2
LS 411	Computers in Information Work	2

LS 413	African Bibliography	2
LS 501	Automation in Libraries and Information Centers	3
LS 502	Preservation & Security of Information System, Res. Serv	3
LS 503	Media Resources & Services in Information work	2
LS 504	Personal Management in Libraries & Information Center	2
LS 505	Humanities Information System & Services	2
LS 506	Promotion of Information System & Service	2
LS 507	Financial Management in Libraries and Information Centers	2
LS 508	Legal aspect of information and copyright	2
LS 509	Introduction to Comparative & International Librarianship	2
LS 510	Computer In Society	2

At the Department of Library and Information science at Modibbo Adama University of Technology (MAUTECH, Yola), there are 48 courses for the undergraduate programme. Out of these 48 courses only six deal with information technology, focusing on the fields of telecommunication, information and communication technology, data processing in libraries and information centres, computers in information work, computers in society and automation in libraries and information centres. Such issues as digital libraries, database design and management, information systems analysis, information technology architecture, network security, telecommunication and network management, web design, wireless network, etc are not carted for.

Table 4 Evans Ewerem University Library School curriculum

Course Code	**Course Title**	**Credit Units**
LBS 101	Introduction to Librarianship	3
LBS 103	Introduction to Information Science	3
LBS 105	History of Books and Printing	3
LBS 102	Library and Society	3
LBS 104	Multi-Media Libraries	3

LBS 211	Organization of Knowledge	3
LBS 223	Introduction to Library Management	3
LBS 235	Collection Development and Use	3
LBS 251	Library Automation	3
LBS 261	Reference Sources and Services	2
LBS 271	Practical Laboratory Work	2
LBS 212	Cataloguing and Classification I	3
LBS 254	Information Storage and Retrieval	3
LBS 262	Reference Sources and Services	2
LBS 272	Practical Laboratory Work	2
LBS 311	Cataloguing and Classification II	3
LBS 321	Personnel Management	3
LBS 331	Resources and Services in the Humanities	2
LBS 333	Library Building	3
LBS 341	Critical Bibliography	2
LBS 371	Practical Laboratory Work	2
LBS 365	Library Services to Special Groups	2
LBS 314	Indexing and Abstracting	3
LBS 332	Resources and Services in Social Sciences	2
LBS 356	Research Methods	3
LBS 372	Practical Laboratory Work	2
LBS 374	Students Industrial Work Experience Scheme	3
LBS 324	School Media Resource Centre Management	3
LBS 411	Advanced Library Management	3
LBS 421	Academic Library Management	3
LBS 431	Resources & Services in Science & Technology	3
LBS 451	Research Methods	3
LBS 453	Library Technologies	3
LBS 471	Practical Laboratory Work	3

LBS 422	Special/Research Library Management	3
LBS 432	Practical Bibliographic Project	3
LBS 450	Library Project	6
LBS 452	Issues and Themes in Librarianship	3
LBS 482	International and Comparative Librarianship	3

Table 4 shows the curriculum of Evans Ewerem University Library School curriculum.

Out of the 50 courses making a total of 171 credit hours offered by the department only two courses are related to information technology, (application of computer and library technologies) totaling 5 credit hours. Two other courses that can be grouped as having elements of information technology are library automation and multi-media libraries. This library school just like the University of Ibadan's Library School is still largely traditional in content. One can deduce from this that Nigerian library schools are not yet ready to take up the challenge that information technology has posed to libraries.

Conclusion and Recommendations

In few words, the mission and function of the library have been greatly changed in the digital age. A library is no longer recognized only as a warehouse to store printed archives and resources. The library information technology architecture over the Internet platform has provided LIS professionals with the best roadmap to follow the developing trends in information technologies applicable to dynamic and interactive library environments. Using this evolving web-based library information technology architecture as a reference, academic administrators, executives, LIS faculty members, librarians, and other professionals worldwide will be able to produce a new generation of LIS professionals in the coming years of the 21st century.

The inclusion of ICT components is important in LIS curricula for better information management, yet several other conventional components such as user education, community information service, knowledge organization, marketing of LIS education and services, nature and growth of universe of knowledge, etc. are equally important for developing learners as competent and confident professionals to manage the new information environment.

Information technologies have changed the way of information delivery and dissemination in the digital age. LIS professionals need to know how and what information technologies are impacting library information resources and services on the web. LIS undergraduate programmes in Nigeria are expected to spark creativity and promote innovation in future library automation and digitization.

From the review, the Department of library and Information Science at University of Ibadan covers all the traditional areas in Library and Information Science but lacked heavily in the information technology areas that grossly impact the library profession. Now it is being challenged to combine the modern computer and information technologies with traditional LIS courses. On the other hand, the Department of Library and Information Science of the Ahmadu Bello University, Zaria and that of Modibbo Adama University of technology , Yola are ahead to merge more information system and information technology courses with traditional LIS teaching contents. However, they need to offer more computing and information system courses to enhance and promote the essential competency of its future LIS professionals in the digital age.

The evolution and revolution in information technologies is still under way. Over the platform of the evolving web-oriented Library Information Technology Architecture, broadband networks, digital libraries, e-books, mobile computing, smart-phones, streaming video, touch screen technologies, wireless communication, etc. will impact on the future information technology applicable to library settings. Therefore, it is right time for academic administrators, LIS educators and students, librarians, and other professionals to take action. A series of new creations and innovations are needed to adjust missions and strategic plans. Current LIS programmes need new reforms. LIS lecturers need to explore more innovative practices and unconventional approaches to combine computer and information system courses into LIS core courses. New LIS graduates need to understand how and where multi-format information is delivered and disseminated across heterogeneous applications, databases, networks, platforms, and systems over the web.

However, the greatest challenge for current LIS educators is not only about teaching LIS students how to learn better than what they have already known regarding dynamic and interactive library information resources and sources in the pervasive computing environments, but also about fostering librarians' competency in utilizing unfamiliar information media which LIS educators and students never have had a chance to work with today. In fact, the ultimate goal of the LIS programmes in the

world is how to ensure that new LIS professionals could possess new skills to meet the challenges of the digital world.

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