ICT Knowledge and Skills Among Students of Library and Information Science in Umaru Musa Yar'adu University, Nigeria

By
Muhammad Kabir Abubakar

Abstract
The aim of the study is to investigate Information and Communication Technology (ICT) knowledge and skills amongst the students of library and information science in Umaru Musa Yar'adua University, Katsina, whether the courses taught in the department were adequate enough to provide students with ICT knowledge and skills, whether there were adequate ICT infrastructures needed for students training and whether the students had adequate knowledge and skills on ICT. Survey technique was adopted for the study and questionnaire was the main instrument used for data collection. Descriptive statistics using simple percentage was used in analyzing the data collected. The results of the study showed that the department had adequate courses with ICT components and also had adequate ICT infrastructures. The study further revealed that students of the department did not have significant knowledge and skills on search engines, computer applications, using and cataloguing e-resources as well as media resources. Recommendations for improving the students' ICT knowledge and skills include making the department's information technology and audio visual laboratories more functional by providing laboratory attendants and practical hours in the departmental lecture time table. The department curriculum should be reviewed to include more ICT related core courses.

Introduction

Information and communication technology is a concept that attracts a number of views from different scholars and professionals. ICT is a term used to describe the items or equipment (hardware) and computer programme (software) that allow user to access, retrieve, store, organize, manipulate and present information of different kinds and for different purposes by electronic means. Information centres as reservoirs of knowledge are now greatly challenged by the introduction of ICT in running their activities from selection, acquisition, organization, storage and dissemination. The traditional ways of providing services in the centres are paving way for a more sophisticated means that requires technological skills and knowledge on computers, telecommunication, microelectronic facilities, internet surfing and search engines, networks such as LAN and WAN as well as knowledge of library automation software etcetera. The increasing growth of documented literatures globally and the ever increasing demand for such information as well as the emergence of specialized job responsibilities have made it imperative for students of library and information science to acquire the basic knowledge of ICT to be able to provide effective and efficient services to their clients. This has necessitated a shift in the method of teaching from the traditional approach to resource-based approach, requiring the development of information literacy skills of students (Imo and Igbo, 2011).

In Nigeria, library schools, having realized the challenges posed for future librarians for organizational success, personal performance and career building are now reviewing their curricular to provide students with all the necessary knowledge and skills on ICT. Corroborating this assertion a survey of international group of senior academic librarians revealed that with regards to future academic librarians, "IT and communication skills remain at the top" (Ojedokun and Okafor, 2011). In a recent study carried out to investigate the level of ICT knowledge among librarians working in different field of human endeavour as well as the knowledge and skills employers deemed essential for librarians to have, the study concluded that librarians have knowledge of DOS and windows, possess skills in at least eight software packages and programming languages, have fair knowledge of automation software, CD-ROM search, e-mail, internet surfing and search engines. Employers on the other hand require librarians with knowledge in programming language, networking, web development, project management, system development and system applications (Mathews and Pardue, 2009).

With the growing demand for ICT knowledge and skills from information professionals and librarians, library schools are therefore seen as the building block for this transformation and their roles are quite essential. According to Okorafor and Iheaturu (2005), library education programmes in Nigeria should be restructured for the realization of greater opportunities as, the present structure of the curricular lacks the basic fundamental skills with which the graduates of our library schools and departments can work effectively in non-conventional library settings. Because of the pace ICT is changing the way we work, communicate and

learn as well as opening new possibilities and opportunities for students, it has become highly essential for students of library and information science to acquire ICT knowledge and skills relevant to their field of study to enable them meet the demands of the rapid technological changes going on in libraries and information centres. Hence, this study is designed to examine ICT knowledge and skills among students of Library and Information Science of Umaru Musa Yar'adua University, Katsina.

Literature Review

Information and Communication Technology Knowledge and skills are now seen as a key resource and crucial tools for development of any society. It is in this regard that students of library and information science are expected to be model towards acquiring these knowledge and skills. In recent years many scholars have written on the need for ICT knowledge and skills among librarians and information scientist. Ugwuanyi and Ejikeme (2011) observed that, "librarians need some skills, knowledge and attitudes to survive and flourish in the new era of librarianship… the information landscape is changing and is requiring some skills different from the traditional skills of librarianship of acquisition, organization, dissemination and preservation of library material".

To successfully exploit ICT for full benefits, Ugboma (2006), citing Marmwin (1998) observed that information professionals must develop knowledge or expertise in an established programme of knowledge, cultivate the technical capability and subject knowledge. According to Ikpanhindi (1999), skill acquisitions requirements are in the basic areas of the knowledge of computers; how it functions, imputing and retrieval of information from it, ability to choose appropriate software, ability to capture and use ICT based resources. It also includes ability to carry out searches on CD-ROMS. Other skills considered very relevant for graduates or students of library and information science can be captured in the words of Morgan (1998), elementary programming in one or two web languages, communication skills, database creation and the basic knowledge of how to use Fax, e-mail equipment as well as downloading of mails from the internet.

Because of the lot of opportunities available to new era librarians in the ICT world, Kumah (2010) stated that in the digital environment librarians are needed more than ever before to acquire knowledge and skills in providing services that are expected of them by the clientele of the new environment. Furthermore, Gbaje and Ukachi (2011) asserted that, information technology has fundamentally affected the operations of library and information services and this has also had great impact on the skills and training requirements for librarians.

The implementation of ICT in libraries has demanded new forms of knowledge and skills among librarians in order to meet the expectations of the present era. Because of the lack of ICT knowledge among professional librarians as reveled by the study of Adeyoyin (2005) that has prompted many scholars to advocate for a serious re-examination and possible overhauling of Library School Curriculum to include ICT study. In her contribution, Hadiza (2004) lamented that, "the fundamental challenge before the Nigerian library and information centers, library and information science schools, and of course information professionals in the electronic age is principally centered around their capacity to educate, train and produce qualified information professionals capable of utilizing ICT infrastructures to maintain a competitive edge in all spheres of human endeavours. For the students to remain relevant in the ICT driven world the library schools must be in the forefront in these monumental changes by re-shaping their curricula to meet the expectations of the 21st century". In addition Hashim and Mukhtar (2005) found justification for this position in a statement that the library school does not have much choice but to take account of the changes and development while developing the program of studies and the curriculum.

Furthermore, Gullati (2006) pointed out that, "library and information science courses must focus on training on IT applications in libraries". In addition to the need for library schools to champion this cause Etim (2010) observed that "the major trends that must emerge in the curricula of Nigerian library schools are: addressing broad information environments and problems, increasing the infusion of ICT, structuring specialization in Major LIS areas and targeting specific user population".

The need for students of library and information science to acquire the requisite knowledge as well as develop the needed skills on ICT cannot be overemphasized. Hence, this forms the focus of this study. A self-evaluation survey is designed to ascertain the level of ICT knowledge and skills among students of the Department of Library and Information Science of Umaru Musa Yar'adua University, Katsina.

Objectives of the Study

The objectives of this study are to find out students' knowledge and skills on ICT in the Department of Library and Information Science of Umaru Musa Yar'adua University, Katsina. The survey is set to answer the following questions:

1. To find out whether the courses run by the Department of Library and Information Science Umaru Musa Yar'adua University are adequate enough to expose the students to acquire the requisite ICT knowledge and skills?
2. To find out whether there are adequate ICT infrastructures that will provide students with the needed skills in ICT?
3. To find out whether the students of the Department have adequate knowledge and skills in ICT?
4. To make recommendations based on the outcome of the study.

Significance of the study

The findings of this work will be useful for students in their quest for knowledge and skills in ICT. It will also reveal the state of ICT infrastructures in the department and how they are being used for students training. This study will equally avail the university management with the situation of ICT infrastructures in the department and how to improve on them. The study will equally help the department to improve on its curriculum with regard to ICT composition. Finally it is hoped that this study will help other library schools to recognize the state of ICT knowledge and skills of their students and find an effective means of improving on it.

Methodology

The population for the study comprised all lecturers and students of the department during the 2010/2011 academic session. Information obtained from the Department showed that the total population of staff in the department was 20 while that of the students was 225. All the staff of the department were involved in the research while 90 (40%) of the students' population was selected as sample for the study.

The data obtained for the survey was collected between October and November 2011. It was collected by issuing out questionnaire to the respondents. Close- ended questions were adopted which provide answers that are easy for interpretation and tabulation. A total of 20 copies were distributed to lecturers and all were returned, and another 90 copies of questionnaire were distributed to students of the department and a total of 80 were returned giving a response rate of 88.9%. The returned copies of questionnaire were analyzed using percentage and frequency count.

Data Analysis and Presentation

One hundred and ten (110) copies of questionnaire were distributed with the Head of Department and Lecturers of the Department returning 100% respectively, while the student response is 80, representing 88.9%. The combined total response was 96.3%.

The Department of Library and Information Science of Umaru Musa Yar'adua University, Katsina has 48 courses across all levels 27 (56.25%) are core courses and 21 (43.75%) are elective courses. Out of the 48 courses offered by the Department 39 (81.25%) are traditional library science courses with an insignificant component of ICT while 9 courses representing (18.75%) are significantly ICT related courses. From the 9 significantly ICT related courses, 5 (55.56%) are core courses and 4 (44.44%) are elective courses as indicated in table 1.

Table 1: Level of ICT components in the departments courses

S/N	**Courses**	**Level of ICT component status**	**High %**	**Medium %**	**Low %**
1	LIS1211History of library and information centres	Core			Low
2	LIS1212 Introduction to library and information resources	Core			Low
3	LIS1213 library services to young people	Elective			Low
4	LIS1214 Information user	Elective		Medium	
5	LIS1225 Libraries and society	Core			Low
6	LIS1226 Introduction to library and information centres	Elective		Medium	
7	LIS1227 Sociology of information science	Core			Low
8	LIS2211 Information organization 1	Core		Medium	

9	LIS2212 Reference and information services	Core		Medium	
10	LIS2213 Computer in information work	Core	High		
11	LIS2214 Introduction to telecommunications	Elective	High		
12	LIS2215 Public information systems and services	Elective		Medium	
13	LIS2216 Agricultural information systems and services	elective			Low
14	LIS2221 Information organization 11	Core		Medium	
15	LIS2222 Management of information systems and services	Core		Medium	
16	LIS2223 Bibliographic information systems and services	Core		Medium	
17	LIS2224 Introduction to records and archives management	Elective		Medium	
18	LIS2225 Media resources and services in information work	Elective	High		
19	LIS2226 Rural information systems and services	Elective		Medium	
20	LIS2227 Introduction to computer operating systems	Elective		Medium	
21	LIS3211 Introduction to information science	Core	High		
22	LIS3212 Research methodology	Core			Low
23	LIS3213 Marketing of library and information services	Core			Low
24	LIS3214 Information technology	Core	High		
25	LIS3215 School information systems and services	Elective			Low
26	LIS3216 Humanities information systems and services	Elective			Low
27	LIS3217 Serial management in libraries and information centres	Elective			Low
28	LIS3218 Promotion of information systems and services	Elective			Low
29	LIS3221 Technical services in libraries and information centres	Core			Low
30	LIS3222 Libraries and information resources development	core			Low
31	LIS3223 Information representation	Elective			Low
32	LIS3224 Academic information systems and services	Elective			Low
33	LIS3225 National information systems and services	Elective			Low
34	LIS3226 Introduction to application packages	Elective	High		
35	LIS3328 SIWES	Core			Low
36	LIS4212 Introduction to digital information systems and services	Core		Medium	
37	LIS4213 Financial management in library and information centres	Core			Low
38	LIS4214 Quantitative method in library and information centres	Core			Low
39	LIS4215 Science and technology information systems and services	Core		Medium	
40	LIS4216 Social science information systems and services	Elective			Low
41	LIS4217 Information management in library and information centres	Core			Low
42	LIS4218 Specialized information systems and services	Core			Low
43	LIS4219 Preservation and security of information resources	Core			Low
44	LIS4221 Personnel management in library and information centres	Core			Low
45	LIS4222 Publishing and advertisement industries	Core			Low
46	LIS4223 Oral tradition and oral information	Core			Low
48	LIS4225 Business information systems and services	Elective			Low
48	LIS4226 Ethics of library and information systems and services	Core			Low

Table 2: Type of ICT infrastructures in the Information Technology and Audio Visual Laboratories

Audio visual laboratory					
S/no	**Description of items**	**quantity**	**S/no**	**Description of items**	**quantity**
1.	Computer set	30	1.	Slide projector	1
2.	Computer tables	30	2.	Overhead projector	1
3.	Computer chairs	30	3.	Power point projector	1
4.	Inverter batteries	8	4.	Opaque projector	1
5.	Inverter cyber	1	5.	Video projector	1
			6.	Slides	8
			7.	Loudspeakers	2
			8.	Tape recorder	1
			9.	Projector screen	1
			10.	Radio cassette	10
			11.	Wireless adaptor	1
			12.	Sony NPL camera	1
			13.	Sony T.V	1

ICT infrastructures in the Department

Data collected revealed that the department had two laboratories namely, the Information Technology Laboratory and the Audio Visual Laboratory. The researcher went further to find out the type of ICT infrastructures available in the two laboratories and the response from the HOD is shown on table 2.

Table 2 shows that the Department of Library and Information Science of UMYU, Katsina has one Information Technology Laboratory and one Audio Visual Laboratory. Findings from the department further reveals that the laboratories are not always open for students use in their free time because the department does not have staff to take care of the laboratories.

All the lecturers sampled for the study indicated that both the Information Technology Laboratory and the Audio Visual Laboratory have adequate ICT infrastructures. When asked if the laboratories were used for practical activities all the lecturers (100%) indicated that they do not use the information technology laboratory for practical while only 10% of the lecturers indicated they used the Audio Visual Laboratory for practical activities. The researcher also sought to find out the provisions for practical session on the departmental lecture time table and all the respondents indicated that neither Information Technology nor audio visual sessions were provided any place on the departmental time table.

The adequacy of the courses taught in the department to provide the requisite knowledge and skills on ICT were also sought for and all lectures indicated that the courses taught in the department were adequate enough to provide students with the requisite knowledge and skills on ICT.

Table 3: Assessment of student's level of ICT knowledge and skills

Level of ICT components	Frequency (%)
Excellent	0 (0%)
Very good	0 (0%)
Good	15 (75%)
Fair	5 (25%)
Poor	0 (0%)

The lecturers were asked to assess level of ICT knowledge and skills with respect to the courses taught in the Department. The findings in table 3 shows that 15 (75%) of the respondents are of the view that the students level of ICT knowledge and skills is Good, 5 of the respondents representing (25%) indicated fair.

Students knowledge and skills on ICT according to their level were also identified as shown in table 4

Table 4: Students Knowledge and Skills on ICR according to level

Students levels	Response
200	8 (40%)
300	11 (55%)
400	13 (65%)
Spill over	15 (75%)
Total	47 (58.75%)

The results of the finding in table 14 reveals that 8 (40%) of 200 level respondents do have computer skills, 11 (55%) of 300 level, 13 (65%) of 400 level and 15(75%) of spill over respondents respectively. On the other hand 12 (60%) of 200 level respondents of the same department indicated that they do not have computer skills, 9 (45%) of 300 level, 7 (35%) of 400 level and 5 (25%) of spill over respondents respectively. The result therefore shows that 47 (58.75%) of the respondents do have computer skills while 33(41.25%) do have such skill.

Table 5: Place where skills are acquired the

Place	Frequency (%)
Causes taught in the department	26 (32.5%)
Computer school	12 (15%)
University e-library	0 (0%)
SIWES	7 (8.75%)

Table 5 reveals that 26 (32.5%) of the respondent did acquire their skills from courses taught in the department while 12 (15%) from computer schools and 7 (8.75%) from SIWES exercise.

Adequacy of ICT knowledge and skills among the students of the Department

The researcher sought to find out the adequacy of ICT knowledge and skills among the students of the department by asking them to indicate their familiarity with search engine; their skills in using computer application package; skills in using and cataloguing e-resources; and skills in using media resources. The responses collected are shown in table 6, 7 and 8.

Table 6: Familiarity with search engines

Search engines	Response
Hotbot	0 (0%
Excite	1 (1.25%)
Altavista	27 (33.75%)
Google	72 (90%)
Lycos	0 (0%)
Yahoo	72 (90%)
Others (please specify)	NIL

The analysis in table 6 indicates the respondent's familiarity with search engines. The finding shows that 1 (1.25%) of the respondents is familiar with Excite, 27 (33.75%) with AltaVista, 72 (90%) with Google and 72 (90%) with Yahoo. The finding further shows that 80 (100%) are not familiar with Hotbot, 79 (98.75) with Excite, 53 (66.25%), with Alta Vista, 8 (10%) with Google, 80 (100%) with Lycos and 8 (10%) with Yahoo.

Table 7: Skills in using computer applications

Operations	Response
Word processing	47 (58.75%)
Power point	37 (46.25%)
Desktop publishing	10 (12.5%)
Internet	69 (86.25%)

Table 7 has shown that 47 (58.75%) of the respondents have skills in Word Processing, 37 (46.25 %) in Power Point, 10 (12.5%) in Desktop Publishing and 69 (86.25%) in Internet.

Table 8: Skills in using and cataloguing e-resources

E-resources	Response
CDs, VCDs & DVDs	40 (50%)
Video tapes	39 (48.75%)
Audio	39 (48.75%)
Microform	37 (46.25%)
Others (please specify)	NIL

The findings in table 8 indicated the respondent's skills in using and cataloguing e- resources with CDs, VCDs and DVD recording 40 (50%), Video Tapes 39 (48.75%), Audio Tapes 39 (48.75%) and Microform 37 (46.25%) respectively.

Table 9: Skills in using media resources

Media resources	Response
Slide projector	12 (15%)
Overhead projector	0 (0%)
Power point projector	25 (31.25%)
Opaque project	0 (0%)
Video projector	27 (33.75%)
Digital camera	52 (65%)
Other (please specify)	NIL

Table 9 indicates that 12 (15%), 0 (0%), 25 (31.25%), 0 (0%), 27 (33.75%), and 52 (65%) of the respondents have skills in using Slide Projector, Overhead Projector, Power Point Projector, Opaque Projector, Video Projector and Digital Camera.

Conclusions and Recommendation

The purpose of the study was to investigate ICT knowledge and skills amongst students of the Department of Library and Information Science of Umaru Musa Yar'adua University, Katsina. The study has established that the Department has enough manpower with the requisite specializations to train students on ICT; it also reveals that there are adequate courses and infrastructures for students training although most of the courses are insignificantly ICT related. The study equally established that the Laboratories in the Department are not adequately put to use for students training, and there are no Laboratory Attendants in both Laboratories. It further revealed that a significant proportion of the students have knowledge and skills on ICT but with no significant familiarity with search engines, computer applications such as (desk top publishing, power point and word processing), using and cataloguing e-resources as well as media resources. Based on the findings of the survey the following recommendations are proffered

1. The University Management should employ more tenure staff that will always be on ground to teach and to conduct practical activities with the students.
2. The department's curriculum should be re-infused with new ICT related courses and by also changing the status of the ICT related courses from elective to core status. This will help the students to acquire adequate and the right knowledge and skills to be able to work favourably in any information environment.
3. The Laboratories should be provided with attendants who would in essence ensure that the laboratories are kept open for students use both during lectures and students free hours. This will give the students a lot of opportunities to acquire more skills in ICT.
4. Practical activities should be incorporated into teaching/ learning activities through the allocation of hours for practical sessions in the Departments Lecture Time Table. This will fundamentally expose students on knowledge and skills of the ICT equipment.
5. Students should be encouraged to register for more ICT related courses and to take computer training outside the regular classroom. This well help bridge the lost opportunity they could not utilize while at school.

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