Relevance and Adequacy of IT Skills of Librarians in Southern Nigeria in the Digital and Electronic Environment in Nigeria: A Survey

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Abstract

Libraries as gatekeepers of knowledge are rapidly witnessing the introduction of various information technologies (IT). One of the challenges facing IT/digital library projects in Nigeria has been inadequate or dearth of knowledge and skills to implement the digital and electronic library services. In this study, an audit of IT skills set of librarians in some Nigerian university libraries located in the southern region of the country was carried out with the aim of examining their relevance and adequacy to the digital environment.

The study used the survey approach. The stratified sampling technique was adopted to select 10 university libraries in the Southern part of Nigeria. The findings of the study revealed that many of the respondents had knowledge and skills in email use, word processing application, and use of search engines such as Google and Yahoo but lacked knowledge of search engines and directories other than Google and Yahoo respectively. Many of them did not know how to evaluate and catalogue e-resources; had no knowledge of subject gateways, specialized databases and some open access library databases; had no knowledge of database management, are not skilled in web design and are equally not familiar with web design applications. The study recommends management support for information technology skills training and/or improvement for librarians. Librarians are also challenged to explore the range of training resources available over the Internet for self development.

Keywords: IT Skills, Digital Environment, Professional Development

Introduction

In recent years, libraries and librarians have had to adapt to the growth of information and communications technology. Today people use the Internet

as a primary source of information, often relying on books as a last resort due to the issues of time and money. In terms of infrastructure, libraries now devote space to public computer facilities and librarians undergo additional training in order to be well-equipped to deal with queries related to modern research techniques and online resources as well as the traditional questions relating to finding and borrowing books. Library archives and records are also now computerised, meaning a more efficient and effective borrowing and returns system and a faster method of locating resources and assessing availability of items. In terms of administration, running a library is now much simpler than before, thanks to the aid of computerised systems. Modern systems are also beneficial to customers who are able to reserve and renew items online as well as being able to explore the extensive library catalogue. In terms of ecological impact, the new system of computerised records saves using a considerable amount of paper, which, on a national scale could contribute significantly to helping the environment (South West Museums and Libraries Association Champion, 2009). Aina (2004) also alluded to information and communications technology (ICT) impact on libraries. He further reported that ICT had radically transformed most of the services provided by a library. It is heavily utilized in the storage, processing and dissemination of information and has made the organization of information very efficient, the delivery of basic information services more effective and the dissemination of information to users easier. It has eliminated a lot of routine and repetitive tasks in the library. In other words, many libraries either have gone electronic or are going electronic.

In Nigeria are particularly fast assuming the status of an electronic library - a library consisting of electronic materials and services, and can include all digital materials, as well as a variety of analog formats that require electricity to use e.g. video tapes (Ojedokun and Moahi, 2007). For university libraries in Nigeria, the pressure to go electronic has never been more apparent and much more so in this era of globalisation. Nigerian universities as knowledge creators and their libraries as gatekeepers of knowledge are rapidly witnessing the introduction of various information technologies. Some have moved to implement integrated library systems, to build digital collections, institutional repositories (IRs), and to provide electronic services such as access to: Internet, online journals, e-mail, and workstations for general computing like word processing, spreadsheet, data analysis and a host of other computer-based applications. In other words, libraries are now putting more emphasis on electronic and digital information resources. Thus, specialised job responsibilities are daily emerging to handle resources. This development calls for new skills and knowledge acquisition relevant to the information technology environment by librarians. For example, the development of a digital collection or an institutional repository requires the traditional skills of collection development as well as new skills of server setup and maintenance, while developing and managing a web site may require knowledge of programming languages (such as JavaScript and Perl) and networking concepts (such as IP addressing and server operating systems). The objective of this study is to audit the IT skills set of librarians, the relevance of such skills, and their knowledge to implement digital and

electronic library services. Tyson (2007) cited in Batool and Ameen (2010) corroborate the objective of this paper when he suggested that skills audit of librarians can be a solution to addressing 21st century library issues.

Literature Review

In order to facilitate digital age's demanding clients, libraries must be equipped with the desired technology and human expertise (Batool and Ameen, 2010). This suggests that the skills of librarians should link to the technological infrastructure. APLEN (2008) cited in Batool and Ameen (2010), identified technological core competencies for library professionals "as a combination of skills, knowledge and behaviours related to library technology and are important for organizational success, personal performance and career building". A survey of an international group of senior academic librarians indeed revealed that, with regard to skills of future academic librarians, "IT and communication skills remain at the top" (Feret and Marcinek, 2005 cited in East 2007).

Michael Malinconico (1989) cited in Mathews and Pardue (2009) in his study concluded that librarians need to understand how to manage technology and how to harness it for their own ends. Penny Beile and Megan Adams also cited in Mathews and Pardue (2009) in their content analysis of library position announcements indeed found that "as information sources in academic libraries are delivered increasingly via an electronic medium, the degree to which computer skills are sought by libraries becomes an important concern." Yuan Zhou's (cited in Mathews and Pardue 2009) in-depth analysis of computer skills for academic librarians offered a definition of computer skills. He listed experience with bibliographic utilities such as OCLC or RLN; automated library systems including general knowledge of library automation, online database searching, microcomputer applications, mainframe computer applications, CD-ROM products, computer languages or programming, computer hardware, networks such as LAN or WAN, Internet searching, resources in electronic formats, and image technology or multimedia.

Studies by Babu, Vinayagamoorthy, Gopalakrishnan, 2007; Mathews and Pardue, 2009; Batool and Ameen, 2010; etc, have particularly identified IT skills sets for librarians. For example, Mathews and Pardue (2009) in their study examining the IT skills employers deemed essential for librarians to have found a substantial need for Web development, project management, systems development, and systems applications. Their study analysed for specific skills which is of concern because these skills help to define the library profession. These specific IT skills set are as indicated: Programming languages (e.g. Visual basic, Java, C#, C, C++, SQL, etc), Networking (LAN administration, Network Design, Network Security, and Network Management), Web Development (HTML/XML, FrontPage, Dreamweaver, authoring Web pages, maintaining Web sites, Web 2.0), Project Management (Managing IT projects, production scheduling, and supervising personnel), Systems Development (Systems design and analysis, object modelling/UML, CASE tools, database creation) and Systems Applications (Installation of software, upgrading software, maintenance, installation and troubleshooting

of hardware, performing systems maintenance and backups). While Mathews and Pardue based their investigation on job content analysis, Babu, Vinayagamoorthy, Gopalakrishnan(2007)   and Batool and Ameen (2010 studied librarians on the job. In their study, Babu, Vinayagamoorthy, Gopalakrishnan (2007), investigated the level of ICT skills among librarians in engineering educational institutions in Tamil Nadu, India. The study focused on operating systems, software packages and programming languages, library automation software, web awareness and online facilities/services, besides the technical skills and managerial skills. Their study revealed the following: that a majority of the library professionals were conversant with DOS and Windows while only a few possessed skills in the UNIX and LINUX; possessed skills in as many as eight software packages and programming language, but with varying degree of skills; had fair knowledge of library automation software; were aware of OPAC/Web OPAC followed by CD ROM search; e-mail; Internet surfing and search engines. In terms of technical skills, however, respondents indicated knowledge of creating a catalogue and metadata, optical character recognition (OCR), user interface design and image technology. Only about 55 percent had fair knowledge of all managerial skills.

Batool and Ameen (2007)   investigated the type and level of technological skills possessed by university librarians. They addressed the following categories: computer hardware (expertise includes awareness about the physical parts, their installation, troubleshooting and replacing), word processing (including proficiency in formatting, inserting and applying different styles to documents), internet (expertise meaning one has knowledge to logon, enter web address, familiarity with different search engines, know basic internet terminology and emailing etc), troubleshooting (expertise enables to identify "why my keyboard is not responding" etc.) and integrated library systems (ILS) (used to track items owned, orders made, bills paid, and patrons who have borrowed. The findings demonstrate that though these skills are very essential, respondents only demonstrated significant proficiency in computer hardware and word processing.

This review established the importance of IT skills in providing effective and efficient library and information services. Conclusively therefore, librarians need IT skills to implement digital and electronic library services.

Methodology

The study used the descriptive survey approach using a self constructed questionnaire for data collection. The skill sets in the questionnaire are those currently in demand in academic libraries. They are however, not exhaustive. The questionnaire was pilot tested for errors using a branch library of University of Nigeria, Nsukka. The necessary corrections were made before the questionnaire was administered to the subjects and/or respondents. Respondents were from the federal, state and private universities in the three geo-political zones in Southern Nigeria – South-East, South-South and South-West. The sample selection of universities for the study was by stratified

sampling. The sampling frame was the approved list of universities as recently released by the National Universities Commission (NUC). The authors used census for the subjects/respondents.

The selected universities (libraries) from the zones indicating the number of questionnaire administered and returned respectively were: Obafemi Awolowo University, Ife (13, 8); University of Ibadan, Ibadan (15, 8); Osun State University, Osogbo (7, 4); Bowen University, Iwo (6, 6); University of Nigeria, Nsukka (40, 28); Nnamdi Azikiwe University, Awka (8, 4); University of Calabar, Calabar (10, 6); Bishop Okoye University, Enugu (2, 2); Caritas University, Enugu (2, 2) and Madonna University, Elele (12, 8). Of the 115copies of the questionnaire distributed, 76 usable copies of the questionnaire were returned given 66.1% response rate. Of the 76 respondents, 36 (47.4%) were from the South-East, 26 (34.2%) from the South-West, and 14 (18.4%) from the South-South. The Statistical Package for the Social Sciences (SPSS) was used for data analysis. The results were expressed as frequencies and percentages.

Presentation of Results

Twelve (15.8%) of the respondents had either the Bachelor in Library Studies or Science, 55 (72.4%) had either Master of Library or Information Science, 7 (9.2%) have the Doctor of Philosophy, PhD, 1 (1.3%) had Master of Philosophy, M.Phil, and 1 (1.3%) had National Diploma, ND in Library Science. The study also note that of the 75 respondents that responded to the question on years of librarianship practice, 33 (44%) had spent 1-5 years in practice, 10 (13.3%) 6-10 years, 10 (13.3%) 11-15 years, 14 (18.7%) 16-20 years, 3 (4%) 26-30 years, and 5 (6.7%) over 30 years.

Use of E-mail

The study revealed that although majority of the respondents (to a large or very large extent) were able to create and compose emails, forward and reply to an email and attach files to e-mails, only a few were able to set signature, holiday/vacation, filter, create folder, block an address, customise email, spam mails and tag or flag a mail (Table 1).

Table 1: Extent of Use of Email (N=76)

Use	Very large extent		large extent		Small extent		Not at all	
	No.	%	No.	%	No.	%	No.	%
Creation of account	39	51.3	23	30.3	7	9.2	2	2.63
Compose and send	49	64.5	16	21.1	9	11.8	1	1.32
Attachment	41	53.9	17	22.4	13	17.1	3	3.95
Forward reply	44	57.9	24	31.6	6	7.9	1	1.32

Set signature	16	21.1	12	15.8	29	38.2	15	19.7
Set holiday/vacation	13	17.1	14	18.42	21	27.6	28	36.8
Set filter	15	19.7	9	11.8	24	31.6	25	32.9
Create folder	21	27.6	16	21.1	32	42.1	7	9.2
Block an address	14	18.42	14	18.42	23	30.3	24	31.6
Customise e-mail	12	15.8	10	13.2	27	35.3	24	31.6
Spam mail	11	14.5	12	15.8	29	38.2	15	19.7
Ta/flag mailg	14	18.42	7	9.2	27	35.3	27	35.3

Word Processing

The study findings show that more than half of the respondents (to a large or very large extent) could perform word processing tasks and had knowledge of: 'how to save documents', 'difference between save and save as', 'saving documents in different version of word processor', 'setting margins and orientation', 'how to print document', 'working with tables', how to mail-merge', 'how to password a document', 'how to use grammar and spelling tool', and 'how to use thesaurus'. Surprisingly, though insignificant is the fact that there were two or three respondents who could not perform any of these word processing tasks. It was also found that 21 (28.8%) did not know how to password a document (Table 2).

Table 2: Word Processing Task (N=76)

Task	Very large extent		large extent		Small extent		Not at all	
	No.	%	No.	%	No.	%	No.	%
Perform word processing	34	44.7	29	38.2	9	11.8	2	2.63
Save documents	48	63.2	19	25.0	7	9.2	1	1.32
Difference between save and save as	46	60.5	19	25.0	6	7.9	3	3.95
Save doc in different version	34	44.7	19	25.0	17	22.4	4	5.30
Setting margins	32	42.1	12	15.8	28	36.8	3	3.95
Print document	45	59.2	17	22.4	11		1	1.32
Working with tables	26	34.2	20	26.3	26	34.2	3	3.95
Mail merge	21	27.6	18	23.7	25	32.9	11	11.8
Password docs.	20	26.3	15	19.7	17	22.4	21	27.6

| Spell check and grammar | 28 | 36.8 | 29 | 38.2 | 15 | 19.7 | 3 | 3.95 |
| Use of thesaurus | 24 | 31.6 | 21 | 27.6 | 23 | 30.3 | 7 | 9.2 |

Formatting Operations in Word Processing

The study findings with regards to formatting operations in word processing revealed that very many of the respondents could not perform the following formatting operations: 'set bold' 61 (80.3%), do 'underline' 61 (80.3%), do 'line-spacing' 63 (82.9%), set 'page number'49 (64.5%), 'insert image' 45 (59.2%), set 'alignment' 43 (56.6%), do 'columns' 42 (55.3%) and do 'headers & footers' 39 (51.3%). However, only a few could 'hang paragraphs' 32 (42.1%), do 'bookmark' 28 (36.8%), do 'referencing' 24 (32%), do 'footnote and pagenote' 23 (30.3%), do 'drop-cap' 22 (28.9%), and do 'watermark' 14 (18.4%) (Table 3).

Table 3: Formatting Operations in Word Processing

Operation	No.	%	Operation	No.	%	Operation	No.	%
Set 'bold'	61	80.3	'italics'	61	80.3	'underline'	64	84.2
'line spacing'	63	82.9	'alignment	43	56.6	'hang paragraph'	32	42.1
Do 'bookmark'	28	36.8	Do 'watermark	14	18.4	'headers & footers'	39	51.3
Set 'page number'	49	64.5	'referencing'	24	32.0	'footnote & pagenote'	23	30.3
'insert image'	45	59.2	'drop-cap'	22	28.9	Do 'columns'	42	55.3

Internet & Database Searching

On the Internet and database searching, the study found that many of the respondents knew how to formulate search query 65, (87.7%). It was also revealed that 51 respondents (76.1%) did know how to refine search during search operations. Only 37 (59.7%) of the 62 respondents could use search features of different search engines. What is however surprising in the findings of the study is that only 36 (83.7%) of the 43 respondents could evaluate resources retrieved from the Internet and other online resources (Table 4a). It is known however, that the major source of information today was the Internet, which is not policed and have contents ranging from 'not' or 'not so' relevant to 'highly' relevant contents. It is expected that librarians, as information professionals would be aware of this.

Table 4 (a): Internet Search (N=76)

Task	No.	%
Formulate search	65	85.5
Use features of different search engines	37	48.7
Refine search	51	67.1
Evaluate resources	36	47.3

What is also surprising is that many of the respondents did not know any other search engines other than 'Google' 73 (96.1%). Only a few had knowledge of other search engines such as 'alltheweb', 'Altavista', 'Hotbot', and 'Excite' (Table 4b). Two respondents in addition to google indicated knowledge of 'Dogpile'. In some of the responses, it was also discovered that some did not know the difference between a 'search engine' and a 'web directory'. This is however, not too surprising as some web directories include search engine in their page. A few could also not differentiate between a 'search engine', 'portal' and a 'web browser' as they indicated Mozilla firefox, and MSN (a Microsoft portal) as search engines.

Table 4b: Familiarity with Search Engines(N=76)

Search engine	No.	%	Search engine	No.	%	Search engine	No.	%
Google	73	96.1	Alltheweb	11	14.5	Altavista	27	35.5
Hotbot	13	17.1	Excite	17	22.4	Other search engines	22	28.9

Similarly, many of the respondents also did not know any other 'web directories' other than 'Yahoo' 66 (86.8%). Only a few were familiar with 'Librarians' Index to the Internet' 22 (28.9%), 'Britannica' 22 (28.9%), 'About.com' 21 (27.6%), 'Go directory' 18 (23.7%), 'Open directory' 14 (18.4%), 'Looksmart' 8 (10.5%), and 'BUBL link' 7 (9.2%) (Table 4c).

Table 4c: Familiarity with Web directories

Directory	No.	%	Directory	No.	%	Directory	No.	%
About.com	21	27.6	Yahoo	66	86.8	Go Directory	18	23.7
Librarians' index to the Internet	22	28.9	BUBL Link	7	9.2	Looksmart	8	10.5
Open Directory	14	18.4	Britannica	22	28.9	Other Directories	2	12.5

The study also found that only few respondents were familiar with 'subject gateways'. Only 38 of respondents (50%) were familiar with the 'WWW Virtual Library', 29 of respondents (38.2%) are familiar with 'academic

information', 20 of the respondents (26.3%) were familiar with 'Living Web Library' and 'Infomine' and only 3 of the respondents were familiar with 'PINNAKES' (Table 4d).

Table 4d: Familiarity with Gateways

Gateway	No.	%	Gateway	No.	%	Gateway	No.	%
Academic information	29	38.2	Internet Public Library	20	26.3	Living Web Library	5	6.6
PINNAKES	3	3.9	My Virtual Reference Desk	20	26.3	Infomine	11	14.5
WWW Virtual Library	38	50.0	Other library gateways	1	7.1			

Many of the respondents were unfamiliar with specialised databases. Only 27 (35.5%) were familiar with 'ERIC Clearinghouses' – a specialised database for Education, 4 (5.3%) with Voice of Shuttle – a Humanities Research database, 6 (7.9%) with 'Expedia (travel)', and 14 (18.4%) with 'News directory'. Although, 3 (18.8) of the respondents indicated familiarity with other specialised databases other than those mentioned, they were not mentioned (Table 4e).

Table 4e: Familiarity with 'Specialised databases'

Database	No.	%	Database	No.	%	Database	No.	%
ERIC clearinghouses	27	35.5	WebMed	18	23.7	Expedia (travel)	6	7.9
Voice of Shuttle	4	5.3	Jumbo Software	7	9.2	News directory	14	18.4
Other specialised databases	3	3.9						

The study also found that many of the respondents were also not familiar with library databases providing open access to journal articles. The findings however revealed familiarity of over 50% of the respondents with Ágora' 55 (72.4%), 'Google Scholar' 52 (68.4%), 'OARE' 49 (64.5%), 'JSTOR' 49 (64.5%), 'HINARI' 46 (60.5%), 'Ebscohost' 45 (59.2%), 'African Journal Online' 45 (59.2%), and 'National virtual Library' 43 (56.6%) (Table 4f).

Table 4f: Familiarity with some Common Library Databases

Database	No.	%	Database	No.	%	Database	No.	%
Agora	55	72.4	JSTOR	49	64.5	Google Scholar	52	68.4
Data-World Bank	10	13.2	UN Data	8	10.5	ALUKA	14	18.4
National Virtual Library	43	56.6	African Journal Online	45	59.2	National Library of Medicine	18	23.7
HealthMap	3	3.9	HINARI	46	60.5	Biomedical Central	19	25.0
BMJ Journal	23	30.3	PubMed Central	18	23.7	POPLINE	13	17.1
Research Papers in Economics	9	11.8	MathSciNet	11	14.5	Ebscohost	45	59.2
Web of Science	15	19.7	OARE	49	64.5	DOJA	32	42.1
Highwire Archive	9	11.8	OER Africa	3	3.9	TEEAL	12	15.8
Social Science Library (SSL)	11	14.5	Other databases	3	3.9			

The findings of the study revealed that not many of the respondents knew how to catalogue electronic resources. Only 32 (42.1%) of the respondents knew how to catalogue DVDs, CDs and VCDs, 24 (32%) catalogue video tapes, 27 (36%) otcatalogue audio tapes while 13 (17.1%) of the respondents knew how to catalogue microform (Table 5).

Table 5: Cataloguing E-Resources

Ability to catalogue	No.	%	Ability to catalogue	No.	%	Ability to catalogue	No.	%
DVDs, CDs & VCDs	32	42.1	Video Tapes	24	31.6	Audio Tapes	27	35.5
Microform	13	17.1	Others	17	22.4			

Database Management

Database management is the skill required in the creation and maintenance of a database. The findings of the study equally revealed that many of the respondents were not familiar with database management. Few (to a large or very large extent) have knowledge of database management (Table 6a & b).

Table 6a: Database Management

Extent	Diff. between RD & FFD		Familiarity with SQL statement		Able to query a database		Able to store info. In a db.		Able to create a db form	
	No.	%	No.	%	No.	%	No.	%	No.	%
Very large extent	3	3.9	6	7.9	10	13.2	15	19.7	12	15.8
Large extent	16	21.1	10	13.2	12	15.8	17	22.4	16	21.1
Small extent	23	30.3	28	36.8	23	34.3	27	35.5	25	32.9
Not al all	25	32.9	24	31.5.	22	32.8	12	15.8	16	21.1

Table 6b: Database Management

Extent	Able to report a db for mgt use		Knowledge of ODBC use to connect forms to db.	
	No.	%	No.	%
Very large extent	5	6.6	2	2.6
Large extent	16	21.1	13	17.1
Small extent	26	34.2	22	328.9
Not al all	20	26.3	31	40.8

Web Design

Web design is the skill of creating presentations of content (usually hypertext or hypermedia) that is delivered to an end-user through the World Wide Web, by way of a Web browser. The study revealed that many of the respondents had no knowledge of web design. Few (to a large or very large extent) knew something about web design (Table 7a & b).

Table 7a: **Familiarity with Web Design**

Extent	Word 'web server'		Difference between http and WWW		Word URL.		Word 'html'		Word 'html tag'	
	No.	%	No.	%	No.	%	No.	%	No.	%
Very large extent	14	18.4	12	15.8	20	26.3	19	25.0	14	18.4
Large extent	21	27.6	28	36.8	27	35.5	24	31.6	15	19.7
Small extent	22	28.9	19	25.0	16	21.1	17	22.4	24	31.6
Not al all	14	18.4	14	18.4	10	13.2	13	17.1	18	23.7

Table 7b: Familiarity with Web Design

Extent	Word 'dynamic HTML'		Difference between ASP and PHP		Word CMS.		Word 'DNS'		Difference between 'website, 'homepage', 'domain name	
	No.	%	No.	%	No.	%	No.	%	No.	%
Very large extent	13	17.1	5	6.6	10	13.2	10	13.2	19	25.0
Large extent	11	14.5	8	10.5	11	14.5	9	11.8	20	26.3
Small extent	24	31.6	27	35.5	21	27.6	24	31.5	24	31.6
Not al all	22	28.9	30	39.5	30	39.5	27	35.5	9	11.8

The study further revealed that only a few (to a large or very large extent) knew how to use the following web design applications: Frontpage 14 (18.4%), 'Dream weaver' 14 (18.4%), 'Note page' 10 (13.2%) and 'Komodo' 1 (1.3%) (Table 8).

Table 8: Use of other Applications

Application	No.	%	Application	No.	%	Application	No.	%
Frontpage	14	18.4	Komodo	1	1.3	None	31	40.8
Dream weaver	14	18.4	Notepage	10	13.2			

Summary of Findings

A summary of our findings from the survey follows:

❖ Many of the respondents did have skills and knowledge of email use and word processing tasks although many were lacking in some skills such as pass-wording document, mail-merging, setting signature, holiday/vacation, filter, creating folder, blocking an address, customising email, spamming mails, tagging or flagging a mail, hanging paragraphs, bookmarking, referencing, footnote and pagenote, drop-cap, and watermarking.

❖ Many of the respondents lacked knowledge of search engines and directories other than Google and Yahoo respectively. Although many of the respondents claimed to know how to formulate search query and how to refine search during search operations, they did not know how to evaluate and catalogue e-resources.

❖ Many of the respondents had no knowledge of subject gateways, specialised databases and some open access library databases.

❖ Many of the respondents had no knowledge of database management, are not skilled in web design and were equally not familiar with web design applications.

Discussion of Findings

Electronic mail is an important skills requirement by librarians. Some of the services that libraries offer over email include, requesting items to be borrowed (ILL) or suggestions for purchase. Some libraries have email accounts set up so that patrons can ask a reference question electronically. This implies that in addition to the skills' usefulness for service provision, librarians also need these skills to be able to effectively instruct patrons in its use. According to Weise (cited in Still and Campbell, 1993) some of the benefits of email services include the ability to access the library from remote sites, at any time of the day or night, and the ability to produce a printed record of the reference request, thus allowing for record-keeping. One big difference that email has made according to the author is making the internal operations of the library invisible to the patron; they are unaware of which department handles each request. Indeed, a study conducted by Connell Library revealed an overwhelming majority (93.3%) of employers expecting e-mail experience (Davis, 1997).

Word processing is also a key skill requirement in libraries. It is particularly helpful in the production of useful library management reports. There are a variety of skills that librarians will need to have for even basic word processing. These are as stated in the study. For emphasis, they include the typing skill (called data entry), page formatting, and effective use of the tool bar. The highest form of word processing skill however, is being able to navigate the various toolbars that are part of the word processing program. These include the Tools menu (which has spell check, word count and other functions) as well as the various options for saving your document. In a study conducted by Cornell Library (Davis, 1997) for example, Word Processing

ranked the highest, with 144 (96%) of employers expecting at least basic word processing skills. If the skills are to be taught to undergraduates, what it suggests is that librarians should be adequately equipped with these skills. It is therefore good that many of the respondents possess these skills.

Training others to search the Web is simply an extension of the bibliographic instruction sessions by librarians. It is therefore important that they are sufficiently equipped for this service. Librarians are also expected to facilitate skilled information retrieval, intervene between the user and the information to help users evaluate what they retrieve, and assume greater responsibility for learning and research outcomes. They therefore need to possess web and database search and evaluation skills. It is common knowledge that even when undergraduate students turn to the scholarly electronic resources licensed by libraries, their search skills are poor. They seldom if ever use advanced search features, did not understand that result sets are not necessarily organized by relevance to their query, and look only at the first Web page of ten to twenty items retrieved. Even if they come into the library, they seldom consult a reference librarian. In response, librarians (reference service librarians in particular) should be prepared to develop Web-based and electronic database training materials to teach critical thinking skills and search techniques to remote or Web-enthralled users. In addition, acquisitions librarians should know that there is a lot of acquisition information available on the Internet -- publishers' catalogues, bookstore reviews, lists of book catalogues and book clubs. They can also place orders on the Internet. Cataloguers should know how to access other libraries' online catalogues via the Internet for downloading or uploading cataloguing records.

Knowledge of database management (creation and maintenance of a database) is equally very crucial to librarians for successful management and use of information. This includes: the ability to use data effectively to improve your programs; knowing how to use database software to find records, sort, print, and other functions and how to use built-in forms and reports in a database, exploring the software and learning new commands; understanding definitions, programme guidelines, and sources of data and developing clear channels of communication; knowing how to install files, import and export data, maintain backup files, make copies of files, create new folders, knowing how to email files and how to download files from email or from websites and understanding Windows concepts, including how to explore folders and file and how to create or remove shortcuts from the Desktop and/or the Start menu. Understanding database design concepts, including relational database design (table structure; one-to-many relationships), and the benefits and limits of various types of databases, including PC and online databases Experience in the use of SQL (Structured Query Language) to define, manipulate and access a database is very important. So also is thorough understanding of tools and utilities required to maintain a database such as image copy, unload, reload, and reorganization; detailed knowledge of performance thresholds and indicators in a database; and of application development requirements of a database such as levels of security. The requirement for MySQL database management skills for example, adds a significantly higher threshold for the would-be database administrator.

Web-design skills are other skills set allowing librarians to promote e-resource tips and updating their subject information pages. These are in high demand by libraries requiring holistic services delivery. A librarian with a web site can establish his or her expertise in a subject discipline with a resource list or provide more detailed information about his or herself.

Recommendations

No doubt that, many IT skills requirement will be driven by the way the library responds to wider developments in the university such as the need for institutional repository, web presence, etc. The authors therefore suggest management support for information technology skills training and/or improvement for librarians. Librarians are also challenged to be proactive so as to meet up with the demand for IT skills. A number of training resources abounds over the Internet which can be picked up by any librarian willing to develop himself/herself.

Conclusion

Clearly, many librarians in Nigeria are lacking information technology skills. Arising from the introduction, the review of the literature and the above discussion, it is equally clear that information technology skills of librarians will determine the future of academic and research libraries. Librarians will therefore be required to have more breadth and depth of IT knowledge and skills to be able to function effectively in the digital and electronic age.

This study is limited to the university libraries in the Southern part of Nigeria. Conducting a similar survey in the university libraries in the other geo-political zones of Nigeria would be useful to confirm our findings.

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