Computer skills set of librarians in Nigeria: Confronting the stereotype

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Despite the importance of information and communication technologies to the present day information delivery, most reports and studies ascribe low computer literacy to librarians in Nigeria. The present research sought to reexamine computer skills of librarians in Nigeria. Questionnaire was used to collect data for this research. One hundred and eighty four librarians participated in the study. Results show an improved computer literacy level for librarians in the study when compared to results obtained in previous studies. On a self-assessment basis, computer literacy for the various facets of computer and software use ranges from 60% to 98% literacy levels. Although the findings of the research show an improvement over previous studies' levels, there is still need to ensure that every librarian in the country is equipped with all necessary information and communication technology skills to enable the individual function effectively in the present age.

Keywords: Computer literacy, Computer skills, Attitude to computers, Librarians, Nigeria

Introduction

Information and communication technologies (ICT) have transformed services in most libraries in the world. Currently, technology adoption by libraries has moved from the early stage of automating selected library operations to the stage where ICT have permeated into almost all spheres of library services and routines. This development entails that a large part of the librarian's responsibility in the 21st century involves working with computers. This has led to additional skills requirement. Librarians are now required to have skills in ICT use in addition to the traditional information and library science skills. Content analysis of job advertisement for librarian's positions in recent times, affirms to this development[1]. Librarians are using these new skills to provide and maintain electronic collections, develop their web presence, maintain on-line catalogue, digitize their content and meet their users in the social media, it is therefore expedient that to function effectively, one needs to acquire the necessary literacy. This is important for all librarians irrespective of the sector, be it academic or public. Khoo[2] posits that it is important that information professionals are also IT professionals to some degree. This blending will help them to harness technology and information products for greater efficiency in their service delivery. Having some IT skills will aid information professionals to also oversee and make constructive contributions to any IT project being executed in their libraries, develop databases and web applications that might be relevant in their services and for their personal use.

Computerized Manufacturing Automation[3] defined computer literacy as the knowledge and ability to use computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving. Some writers[4,5] have projected some technology skills as being essential for library and information science professionals in the contemporary age. These skills can be categorized into two broad classes.[4] First are skills required to use computer and information technological tools. These include skills for using software application programs e.g. word processing tools, graphic design tools, presentation software, web page development, scanning techniques, database creation and maintenance, software installation skills and knowledge of hardware basics and troubleshooting. The second category includes skills for using the Internet and computer communication networks such as skills to search, and retrieve data effectively on the web environment, networking skills, and Web 2.0 skills. The authors emphasized that competency in these skills is necessary for the continued existence of the library profession in this technology age.

Review of literature

Despite the importance of information and communication technologies to the present day information delivery, most reports and studies ascribe low computer literacy to librarians in Nigeria. In the year 2005, Ani, Atseye and Esin[6] wrote, "Suitably qualified personnel are required for the application of ICT in the library sector of the Nigerian economy in support of national development. Presently, there is a low level of ICT skills among librarians in the country; most librarians have little or no skills to work with computers and the Internet." This statement tends to be corroborated by empirical reports.

Adeyoyin[7] in a study involving 268 professional librarians in Nigerian University Libraries, found out that only 87 (32 per cent) were ICT-literate. Kari[8] in a study of 100 academic librarians in Nigerian Universities and their attitude to the Internet revealed that most academic librarians' knowledge of the Internet do not extent beyond the basic of e-mail and web searching. Most librarians have not created or maintained a web page or any programming. Ajidahun[9] in a related research, found out that of 276 professional librarians working in 20 University Libraries in Nigeria, only 89 (32.24 percent) of them were computer-literate. The result also shows that out of 306 paraprofessional staff members in 20 of the Nigerian university libraries, only 34 (11 percent) of them are computer-literate. In addition, the results reveal that there were 1,163 staff in other categories in the 20 Nigerian university libraries surveyed, out of which only 95 (8.16 percent) are computer-literate. The researcher in summary stated, "Result shows that most of the staff of Nigerian university libraries are not computer-literate. This is rather shocking."

Ademodi and Adepoju[10] examined computer skill among academic librarians in Ondo and Ekiti States of Nigeria and the level of ICT implementation in libraries in the two states. The authors wrote, 'It is obvious that academic libraries in Ondo and Ekiti states have very few computers and these computers are used more for administrative duties and Internet browsing than library routines. Most of the librarians are computer literate, but have no computers to use. The rate of computer skill and competence is low." Ugwuanyi[11] studied information and communication technology literacy of 49 academic librarians in Enugu State using self-assessment questionnaire; he also reported that the level of ICT skills among academic librarians is low.

Implications of low computer literacy for librarians in Nigeria

If one considers the importance of ICT to the information profession in the present age, then librarians in Nigeria should be concerned on these persistent reports of low computer literacy of professionals in the country. As noted by Mazumdar[4], librarians require various IT skills in the technology age such as computer operation, database creation and maintenance and updating of web pages. Assessment of their competencies on these required skills will indicate the standard of services offered to users. In addition, Sreekumar[12] wrote that users demand the latest Internet based resources and services. Internet skills of the information professionals need to improve drastically, to meet the challenges being posed by these technologies, as well as to explore their possibilities, opportunities, and benefits.

Many questions are raised by the implication of low computer literacy reports of librarians in Nigeria; how competent are these librarians in meeting the information needs of the users in an age where ICT have become a major tool for information delivery? There are reports of computer acquisitions, e-library and digital library developments in various libraries in the nation[13], who are operating these computers? With the reported low computer literacy levels, one wonders if libraries employ other IT professionals to operate their computers or if the few competent ones as reported in the literature do not mentor well and therefore do not pass down their skills.

Wide spread poor literacy in information and communication technology use will be detrimental to the continued growth of the library profession in Nigeria. It will also reduce the relevance of librarians and libraries to the society they serve and their capability to participate in the transformation agenda of the Federal Government of Nigeria through ICT. The Nigerian National Policy for Information Technology (IT)[14] posits that Information Technology (IT) is "the bedrock for national survival and development in a rapidly changing global environment. The policy challenges the citizenry to devise bold and courageous initiatives to address a host of vital socio-economic issues such as reliable infrastructure, skilled human resources, open government and other essential issues of capacity building." It is expedient that library professionals be part of this national vision which is only possible by having the requisite computer skills. It is therefore important to find out how far librarians in

Nigeria have grown in mastering the use of technological innovations which have assumed pivotal importance for the performance of their duties.

Objectives of the study
The objectives of this research were to
- To examine the present level of computer literacy of librarians in Nigeria;
- To find out the perception of librarians on the importance of various computer skills to their professional duties; and
- To determine various avenues through which librarians acquired computer skills.

Methodology
Questionnaire was used to collect data for this research. Data was collected through traditional form and online form of data collection. Two hundred and fifty copies of the questionnaire were first distributed to attendees of the 48th National Conference of Nigeria Library Association held in Abuja in July 2010. Ninety four usable copies of the distributed questionnaire were received. This represents 37.6% response rate. To increase the response rate, the questionnaire was thereafter hosted on NLA online Forum (nla-online-forum@yahoogroups.com) as an e-mail attachment through SurveyMonkey online survey software basic account (http://www.surveymonkey.com/). NLA Forum is an Internet based professional interactive and discussion network hosted by Nigerian Library Association. SurveyMonkey basic account allows for a maximum of 100 respondents in a survey. Librarians were requested to complete the questionnaire by following the link on the e-mail. An

explicit instruction was posted that those who attended the conference and filled the questionnaire should not fill the online version. Ninety librarians completed the questionnaire online from July to November 2010. Total respondent for the study is therefore 184 librarians. For data analysis, Responses from the two groups were merged and analyzed using simple percentages and mean scores.

Analysis

Background information
Demographic data of respondents show that **77** (41.8%) respondents were males while 100 (54.3%) were females. Seven (3.8%) did not state their gender. In terms of academic qualifications, the highest percentage 104 (56.5%) of the respondents had Masters Degree, 60 (32.6%) had Bachelors degree. Nine (4.9%) had Post Graduate Diploma while 11 (6.0%) had PhD. The highest share of the respondents 54 (31.2%) had practiced librarianship for between 1-5years, 34(19.7%) had practiced for 6-10 years, 32 (18.5%) for 21 years and above and 31(7.9%) for 16 – 20 years. The least number of 22(12.7%) had practiced librarianship for 11-15 years.

Computer skills of librarians
Respondents were asked to rate their skills in using various software application programs and Internet/Web technologies on a four point scale of no skills to very proficient skills. Table 1 shows percentage distribution and mean score of librarians' rating of their computer literacy levels. Result shows that librarians rated their proficiency highest on use of word processing tools, with a mean score of 3.14. The librarians rated their skills lowest on technical skills

Computer skills	No skill	Little skills	Proficient	Very Proficient	Rating Average	Response Count
Basic computing i.e. word-processing	1.2% (2)	17.2% (30)	47.7% (84)	33.9% (59)	3.14	175
Web page development	51.8% (91)	14.5% (25)	19.2% (33)	14.5% (25)	1.95	174
Research Skills i.e. Internet information retrieval	4.8% (8)	17.4% (30)	47.9% (83)	29.9% (52)	3.03	173
Digitization skills i.e. Scanning & uploading	59.4% (101)	16.5% (28)	15.9% (27)	8.2% (14)	1.73	170
Presentation skills i.e. PowerPoint	20.1% (35)	25.6% (44)	37.2% (64)	17.1% (30)	2.51	173
Graphic skills i.e. Corel Draw	39.2% (68)	46.4% (81)	9.0% (16)	5.4% (9)	1.81	174
Web 2.0/Lib 2.0 skills i.e. Blog creation, etc	31.9% (55)	38.6% (67)	22.3% (39)	7.2% (12)	2.04	173
Statistical application skills i.e. SPSS, Excel	35.7% (63)	41.5% (73)	16.4% (29)	6.4% (11)	1.93	176
Technical skills i.e. Repair & maintenance	69.9% (122)	26.5% (46)	3.6% (6)	0.0% (0)	1.33	174
Software installation skills	48.8% (85)	33.5% (58)	11.6% (20)	6.1% (11)	1.75	174

Table 1—Librarians rating of their computer skills

Note: 'Some skills' is a round up of Very Proficient, Proficient and Little skills

in the area of repair and maintenance with a mean score of 1.33. Based on the definition of computer literacy as the knowledge and ability to use computers and related technology efficiently, with a range of skills covering levels from elementary use to programming and advanced problem solving[3], a round-up of the ratings of the respondents from little skills to very proficient skills was calculated.

Figure 1 presents the Summary of computer skills of the respondents. Result indicated that a large majority 173(98.8%) rated themselves as having some skills in basic computing which is the use of word processing software. In addition, large majority 165(95.2%) had some Internet information retrieval skills. A high percentage of 79.9% (138) rated themselves as having some skills in use of presentation software. More than half of the respondents 118 (68.1%) had Web 2.0/Lib 2.0 skills, 113 (64.3%) had statistics package usage skills, 106 (60.8%) had graphic skills and 89 (51.2%) had software installation skills.

Results also indicated that respondents rated their skills low in some areas of ICT use. Majority, 122 (69.9%) had no technical skills in repair and maintenance of equipment. More than half 101 (59.4%) also had no digitization skills, and slightly above half the respondents 91 (51.8%) had no web page development skills.

Perception on the importance of computer skills

Respondents were asked to indicate how important various computer skills were to their professional duties on a five-point scale of uncertain to very important. Table 2 shows Internet information retrieval skills received the highest rating of 168 (98.2%) as being important and very important to the duties of the librarian. Basic computing, i.e. word-processing closely follows this with a rating of 167 (97.7%). Other highly rated important skills include digitization skills [157 (91.5%)] and Web content development skills [156 (90.9%)]. Other skill sets were also favourably rated by respondents as being important and very important to the professional duties of the librarian. Use of presentation software received a rating of [151 (88.5%)] and software installation skills [136(80.4%)], statistic skills [134 (78.2%)], Web 2.0 / Lib 2.0 skills [133 (78.1%)], technical skills i.e. Repair [113 (66.3%)], and graphic skills [101(59.3%)]. It can therefore be summarized that for performance of their professional duties, the librarians showed a favorable attitude towards all areas of computer literacy and skills.

Learning the computer skills

Respondents were asked to indicate various avenues through which they acquired computer skills. Table 3 shows that majority of the respondents 113(78.7%) acquired their computer skills in cyber café training centers. One hundred and three respondents (61%) acquired their skills through personal practice, 7.1% of the respondents obtained their computer skills from library school. The least percentage of 3 (1.7%) respondents acquired additional degree in computer sciences.
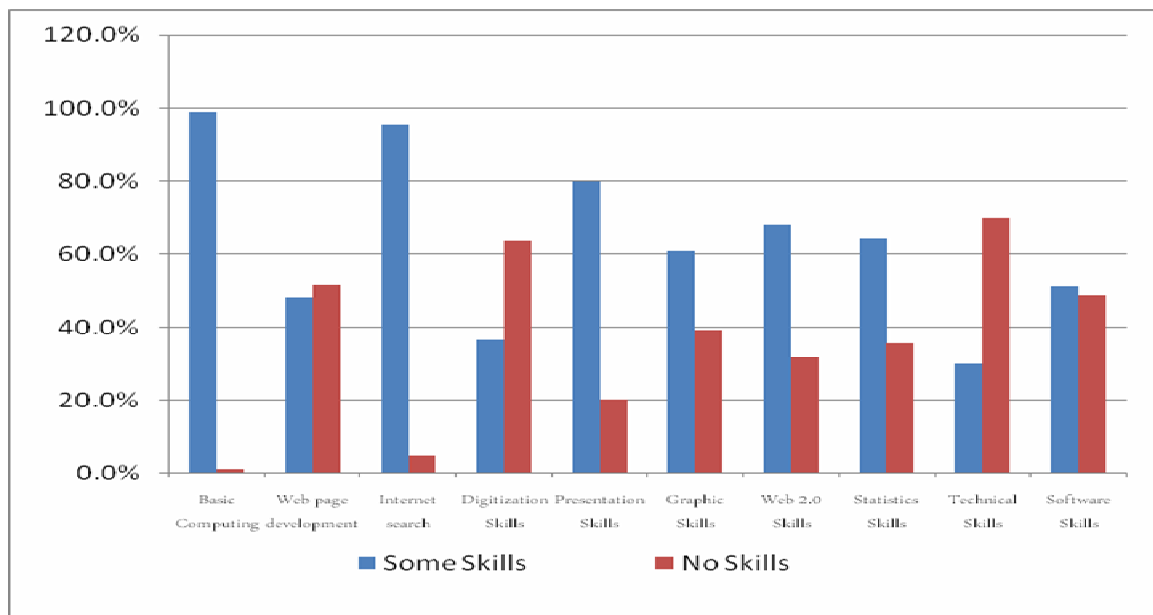

Fig. 1—Summary of computer skills set of librarians
Note: 'Some skills' is a round up of Very Proficient, Proficient and Little skills

Table 2—How important do you perceive these skills to the performance of your professional duties?

	Uncertain	Not Important	Little Important	Important	Very Important	Rating Average	Response Count
Basic computing i.e. word-processing	1.7% (3)	0.0% (0)	0.6% (1)	21.1% (36)	76.6% (131)	4.73	171
Web page development	3.0% (5)	0.0% (0)	6.1% (10)	29.9% (51)	61.0% (105)	4.46	171
Research Skills i.e. Internet search	0.6% (1)	0.0% (0)	1.2% (2)	14.9% (26)	83.3% (142)	4.80	171
Digitization skills: Scanning & uploading	3.0% (5)	0.0% (0)	5.5% (9)	36.6% (63)	54.9% (94)	4.40	171
Presentation skills i.e. PowerPoint	2.4% (4)	1.2% (2)	7.9% (13)	38.2% (65)	50.3% (86)	4.32	170
Graphic skills i.e. e Corel Draw	5.6% (10)	8.6% (14)	26.5% (45)	38.3% (65)	21.0% (36)	3.60	170
Web 2.0/Lib 2.0 skills i.e. Blog etc.	4.3% (7)	3.0% (5)	14.6% (25)	47.0% (80)	31.1% (53)	3.98	170
Statistical appli. Skills i.e. SPSS, Excel	3.6% (6)	5.5% (9)	12.7% (22)	41.8% (72)	36.4% (62)	4.02	171
Technical skills i.e. Repair	6.1% (10)	7.4% (13)	20.2% (35)	41.1% (70)	25.2% (43)	3.71	171
Software installation skills	3.7% (6)	4.3% (7)	11.7% (20)	41.1% (70)	39.3% (66)	4.08	169

Table 3—Where did you acquire these computer skills

	Response Count N =169	Response Percentage
Library School	12	7.10%
On the job Staff Training	85	50.30%
Computer training centers (cyber café)	113	78.70%
Personal Practice	103	60.95%
Additional University qualification in Computer sciences	3	1.78%

Discussion

As duties of the librarian becomes increasingly dependent on computers, and as their work environment continues to develop and change, the importance of learning basic computer skills as well as advanced skills increases. Rao and Babu[15] noted, "A beneficial way for librarians to break out of their insularity is to become much more closely involved and collaborate in the work of computer and information scientists in tasks such as design, organization, development, and maintenance of digital library repositories, interfaces, search engines, networks and Web documents." The findings of this study show an improved computer literacy level for librarians in Nigeria than was reported in the past literature. On a self-assessment basis, a good percentage of the respondents rated themselves as having some skills in the use of various software applications tools. However, the percentages varied between 60% to 98% literacy levels. Majority (98.8%) of the respondents had some basic computing skills. Proficiency in computer technology begins with basic computing skills which includes word

processing skills. Another basic skill requirement of librarians is the information retrieval skills. This skill is highly needed to meet the information needs of users. A good proportion of respondents (95.2%) rated themselves as having some information retrieval skills.

Important to the expanding role of librarians as trainers are computer and web skills needed to present information literacy tutorials in the digital environment. Skills such as the use of graphic software, multi–media applications as well as web development skills are highly needed in preparing and enriching presentations. Current research reports show a good level of utilization of these skills. Su and Kuo[16] examined multimedia application on the content of web-based information literacy tutorials contributed by academic libraries in a peer-reviewed database, PRIMO. Most tutorials applied multimedia to a certain extent. Twenty-eight (76%) tutorials applied graphs and pictures to illustrate concepts, procedures and objects described, 17 tutorials, (46%) were enlivened with Flash animation, fifteen tutorials (41%) provided voice-over narration. Many tutorials used screen-recording software to produce films with voice-over narration for teaching OPAC or database search. Fourteen of them (38%) incorporated short films. There is therefore, need for librarians in Nigeria to acquire these skill set that will enable them deliver user education in a most vivid form. In the present study, a high percentage of 79.9% rated themselves as having some skills in use of presentation software i.e. PowerPoint. More than half of the respondents (68.1%) had some Web 2.0/Lib 2.0 skills and 60.8% had Graphic skills.

These high percentages of between 60% to 98% computer literacy levels found in this study are in contrast to the findings reported in previous studies. For the research carried out by Adeyoyin,[7] only 32 per cent of the respondents were ICT-literate. Equally, in the study carried out by Ajidahun[9] results indicated that only 32.24% of the professional were ICT-literate. However, some aspects of skills in this study had similar low literacy levels. These areas include Technical skills (30.1%) and digitization skills (36.5%).

The catalogue of skills needed by the contemporary librarian is varied and evolving, what is important is that librarians should remain abreast of developments and focus on acquiring those skills that are relevant to the performance of their duties. Librarians need to select from these technology skills, those that are relevant to their duties. Librarians were asked to rate how important various computer skills are to the performance of their duties. Findings show respondents recognized the importance of most of the skills set to the performance of their professional duties. Internet information retrieval skills received the highest percentage of 98.2 % as being very important to the duties of the librarian. Basic computing i.e. word-processing closely follows this, with a rating of 97.7%. Other skills set were also favaourably rated by respondents as being important and very important to the performance of their professional duties. These include digitization skills (91.5%), presentation skills (i.e.) PowerPoint software (88.5%), and Web 2.0 / Lib 2.0 skills (78.1%). A large percentage (78.2%) of the respondents also considered skills in use of statistics software as being important and very important to the duties of a librarian. Skills for use of statistics software can be considered important to the research-oriented librarian. The knowledge is will be beneficial for effective involvement and contributions in the research process. This is especially important for academic librarians who are required like other faculty members of tertiary institutions in Nigeria to be deeply involved in research and publication activities. The importance of acquiring technical skills for repair and maintenance of hardware may not be considered an absolute requirement. This is because system breakdown or major repairs may need the full involvement of expert IT professionals. Positive attitude to use of ICT in the library as recorded in this research was also reported by Adekunle, Omoba, and

Tella[17] and Eguavoen.[18] The researchers found out that generally library staff have a positive attitude toward the use and implementation of ICT in the library.

Computer skills are acquired through various means. Findings of the study show that the predominant mode by which the respondents acquired their computer skills is through private computer training centers or cyber café. 113 (78.7%) of the respondents acquired their computer skills in these establishments. In addition, 103 (60.95%) acquired their skills through personal practice. Only 7.1% indicated that they obtained their skills from library schools. This result shows that library schools may not be playing the expected role of equipping potential librarians with the requisite skills needed to survive in the technology age. The advantage of library schools offering vibrant computer training programs is that instructions will be customized to the needs of the profession. The present curriculum of library and information science schools in Nigeria therefore needs to be scrutinized for possible updating to meet the present needs for IT skills. Saroja, and Ambedkar[19] noted that there are grand opportunities in library schools to impart essential technology skills that will help Library and Information Science graduates adapt to the requirements of the new age information society. Library schools should therefore run a curriculum that is capable of inculcating future librarians with the technical skills needed to work in modern society.

Computer use is a fragmented process with different skills for different software use as they relate to the work process. Most of the studies emanating from Nigeria assessed computer literacy as a composite skill. The present study examined skills in the use of different application programs as well as web technology relevant to library and information services in the technology age. The research has shown there are improvements in computer skills of librarians in Nigeria. It equally showed areas that librarians rated themselves low in having skills to harness the emerged technology. Being versatile means that these librarians need to improve their knowledge on these areas. This knowledge will help them meet the challenges of the ever-evolving ICT tools in all ramifications of their duties as information professional.

Conclusion

Information and communication technology skills are essential for information professionals.

Librarians have a lot to offer users through ICT in the current dispensation. It is therefore imperative that they have commensurate skills in the use of these technologies. Many past reports assign low computer literacy to librarians in Nigeria. The present research portrays increased computer literacy level for respondents in the study. The increased computer skills recorded in the present research could be a result of increased awareness and diffusion of ICT in many areas as witnessed in the last few years. Although the findings of this research indicate an improvement of computer literacy levels over previous studies, some percentages of librarians still rated themselves as deficient in vital areas of computer skills. The target should be that every librarian in Nigeria should be equipped with all the necessary skills to enable him or her function effectively in the present age. This is highly expected considering that ICT is the current tool for information delivery and librarians can only harness these tools by equipping themselves with the necessary skills and competencies.

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