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Network Literacy Skills of Academic Librarians for Effective Services Delivery: The Case of University of Nigeria Library System

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Introduction

The use of Information Communications Technologies (ICTs) in the Library and Information Science profession has been widely reported. Ezeani and Ekere (2009); Ozioko R; Ezeani C; Omeje E (2009) Adebisi, O (2009) Ahiauzu B (2008) Armah, A. (2009). Ezeani and Ekere (2009) have further established that Librarians and information professionals presently operate within a professional climate that is characterized by change. Ezeani (2005) furthermore, has posited that in developing countries such as Nigeria, libraries have had their budgets steadily on the decline. As a result most Nigerian libraries have had to perform their services within a reduced purchasing power. Knowledge of the use of these new skills will ensure that services are rendered more creatively and ensure the effective discharge of duties even within a reduced budgetary allocation.

From the twentieth century need for computer literacy we have gradually migrated to a more advanced use of the Internet known as Network literacy. There has therefore, been a move over time from print literacy, to computer literacy and recently to network literacy. Network literacy therefore, is distinct from the forms of technological literacy present during the first generation of Internet communication. This is because it goes beyond the responsibility of knowing how to access information on the web, to critically reading web content and determining the credibility of online sources. This is often recognized as the critical literacy for the twenty-first century. Adrian (2007) has defined Network Literacy as the ability to participate as a peer within the emerging knowledge networks which are now the product of the Internet and to have a 'deep' understanding of the logics or protocols of these networks as we do of print. It therefore, requires an understanding of the means of participating on the web by writing and connecting to the public sphere. Librarians in the twenty-first century need to be abreast of these emerging skills in order to be able to deliver their services effectively. They need to be able to have an understanding of the ways in which people read, write, and participate actively in the distributed, collaborative environment of the Internet in its current form Benson and Reyman (2009). The Internet offers a uniquely rich resource for authentic inquiry and librarians must learn to orchestrate sophisticated strategies to become literate in this complex environment. This work therefore, seeks to examine the network literacy skills of librarians in the university of Nigeria, library system in recognition of the fact that these are critical skills needed for optimal service delivery within the 21st Century.

Research Questions

The following research questions formed the major basis upon which this study was hinged:

1. What is the level of proficiency of the use of the Internet by Librarians in The University of Nigeria, Library system?
2. What is the level of proficiency of the use of Web 2.0 tools by Librarians
3. What is the extent of use of Library 2.0 by Librarians
4. What are the factors that encumber the level of Network Literacy of librarians.
5. What strategies are proffered for improving the Network Literacy skills of Librarians in the University of Nigeria, Library system.

Scope

This work deals primarily with Network Literacy which according to Slavonien (2002) is one of the four important aspects of literacy needed to become effective life-long learners. In terms of content scope the work is delimited to the examination of the level of skills possessed by Librarians in the university of Nigeria library system with respect to the use of the Internet, the frequency of use of the Internet, the web browsers used for surfing the Internet. Other areas examined are the different uses of some web2.0 and library 2.0 tools which are seen as new Internet tools. The geographic scope is the University of Nigeria, library system in Enugu State Nigeria.

Conceptual Framework

Scholars have variously examined and defined Network literacy. The term means several things to several authors but the underlining factor acceptable to all is that this is a twenty-first century critical skill needed by scholars generally and Librarians in particular to function effectively within the emerging technological environment. The term 'Cyberliteracy, Computer literacy, Internet literacy, Medialiteracy, Technological literacy and Network literacy are

replete in Library and Information science literature. Often times these terms are used interchangeably however, a deeper examination of these terms shows that they are not exactly the same. There is therefore a need to clarify certain basic concepts.

Table 1: Conceptual definitions of Network Literacy.

Author	Conceptualization
Selfe C.(1999)	This author makes a distinction between computer literacy which she defines as the mechanical skills of using computers, software, or the web and technological literacy which she defines as a complex set of socially and culturally situated values, practices, and skills involved in operating linguistically within the context of electronic environments. The author further delineates that technological literacy focuses on effective and appropriate communication within online spaces, not just the technical know-how necessary to access them.
Benson and Reyman (2009)	The authors see network literacy as a skill that goes beyond technical skills and computer literacy but a skill that involves the understanding of the ways in which people read, write and participate actively in the distributed, collaborative environment of the Internet in its current form
Walker (2005)	To this author Network Literacy means linking to what other people have written and inviting comments from others, it means understanding a kind of writing that is a social, collaborative process rather than an act of an individual in solitary
Hu, (1996)	This author has linked Network Literacy to the library practice. He posits that Librarians are asked how to use information rather than just retrieve it and are asked to assist and train users to locate , evaluate and use information effectively as information navigators rather than traditional bibliographic instructors. Librarians act not only as the intermediaries in connecting users with networked resources but as partners with teachers to educate the target groups for network literacy.
Savolainen,(2002)	According to this author traditional; computer; media; and network literacy are the four important aspects of literacy needed to become effective life-long learners, however, the concepts differ in information content and the level of utilization of information tools in the various types. The researcher is concerned with network literacy which has been relatively under-researched.

Literature Review

Several studies have investigated Network Literacy and its value for librarians. Globally so much has been written on this subject matter which lends credence to the fact that this is a twenty-first century core enabling skill for Librarians. Steiner (2009) lucidly delineates the reference utility of social networking sites in the library profession. The researcher discussed in specific terms how social networks such as Face book; My space; twitter which is a microblogging site; blogs; and wikis can be effectively used for library reference services. Libraries according to the author should make their social networking sites on the Internet widely known to patrons and encourage library patrons to use it for sharing of information and for provision of wider access to knowledge. The author opines that social networks are mostly beneficial if there is a targeted use and the site continuously updated.

Hu (1996) Contributing to this discourse asserts that Network Literacy for library users consists of two important aspects: Knowledge of Networked information and skills to locate, select, evaluate and use the networked information. According to him knowledge of networked information includes:

- To recognize the range and uses of global networked information resources and services
- To understand the role and use of networked information in problem solving and in performing basic life activities and
- To know the system used by which networked information is created, managed and made available.

Network skills include:

- Identification of information needed for specific purpose
- Locating information needed from networks with efficient information retrieval methods, skills and tools
- Selecting and evaluating information gained from networked information on a given topic
- Manipulating and organizing networked information with other resources to enhance its values, and
- Using analyzing and presenting networked information for problem solving and life-long learning.
- He also stated that to acquire network literacy users should first of all possess other basic literacy such as traditional notion of literacy which is to read and write,; Computer literacy which involves understanding and operating computers which are interfaces between networked information and end-users; Media literacy which to him is the ability to understand different media storing networked information and use them and finally, the traditional information literacy which is to locate ,select, evaluate and use information effectively.

Some empirical studies have been conducted dealing with Network literacy and the use of the Internet in several countries. One of such contributions is the study conducted by Mudawi (2005) on the use of the Internet and e-mail among Sudanese librarians: a survey report. The salient points of his findings include that in Sudan the major patterns of Internet use were chat sessions; checking e-mails; and surfing professional sites. However, majority of the sample did not utilize e-mail for library services. The author observed that the low use of Internet resources for library services was due to inadequate access and time that can be devoted to Internet activity. He in addition observed a felt need for the training of the use of the Internet for library services.

Ngulumbe (2009) explored the level of network literacy among theological students at St, Joseph's Theological Institute in South Africa. His study revealed that the major problems facing Internet users at St. Joseph's were the shortage of computers and lack of training in the use of Internet facilities. In addition, students did not use a wide variety of Internet resources, had limited skills and knowledge to access networked information resources and made limited use of computer mediated communication tools. The gloomy picture presented by Mudawi and Ngulumbe two African scholars is understandable because of the low penetration of Internet in Africa. An examination of the Internet usage statistics of the world shows that Africa with 6.8% in the table

below has the lowest Internet penetration in the world. The table further shows that out of a total population of 991,002,342 of Africans only 67,371,700 are Internet users. However, from the year 2000-2009 a growth rate of 1,392.4% is recorded which is appreciable and one of the fastest growth rates in the world.

Methodology

The survey design was used for this study. The survey design according to Aina (2004)

is the commonest way to gather information by seeking the opinions of individuals, the consensus of which is expected to provide a solution to the problem. The choice of this design was made because of its appropriateness to this work. The area of study was the University of Nigeria, library system which comprises the Nnamdi Azikiwe library, U.N.N; the Enugu Campus Library and the Medical Library at University of Nigeria Teaching Hospital (UNTH) Enugu. The population of Academic librarians in the three campuses according to the nominal role is 53. Because the population was relatively small, all 53 academic librarians were sampled. A structured questionnaire was used as the instrument for data collection. The questionnaire covered all the aspects of the Research Questions. In addition, it was designed to be somewhat provocative, with a view to exploring respondents' opinions as well as gathering information. In this regard, some Open-ended questions were included. Differences in Network literacy skills could be generational and this prompted some personal questions on age of respondents and how long they had worked in the library. Copies of the questionnaires were administered directly to the respondents and collected thereafter. A professional colleague administered and returned questionnaires from the Enugu Campus and Medical Libraries respectively. Out of the 53 members sampled 50 useable questionnaires were returned giving a return rate of 94.3%. The researcher used both descriptive and inferential statistical methods to analyze the data collected. Specifically, frequencies, percentages (%) mean scores and standard deviation were used for analyzing data. For responses on a four point Likert-type scale, a mid point mean of 2.5 which is the criterion mean was accepted as a positive response while any point below 2.5 was regarded as a negative score.

Discussion of Findings

The first research question dealt with the level of use of the Internet by the respondents.

Graph 1 above: Use of e-mail by librarians

Out of the 50 respondents 43(86%) had valid e-mail addresses and only 7(14%) did not have e-mail addresses. This shows that the vast majority of librarians in the Nnamdi Azikiwe library system have e-mail addresses. This is important because of the great link between ownership of e-mail address with the use of the Internet. In addition, almost all the respondents who have e-mail addresses can search mails effortlessly (100%), can send mails with ease (96%); can attach mails (90%); can bookmark mails (82%) can download documents from the Internet (96%); can use flash to download resources (90%) and can send Instant Messages(IM)(82%). From the above analysis one can affirm that Librarians within the University of Nigeria, Library system fare well with the use of basic Internet applications. The question posed on how often the Internet was used by these librarians revealed the following:

Graph 2 above: Frequency of the use of the Internet by librarians.

A total of 16 librarians (32%) responded that they surf the Internet daily; while 17(34%) librarians affirmed that they use the Internet weekly; 13(26%) responded that they use the Internet monthly and 3(6%) acknowledged the quarterly use of the Internet. However 1(2%) person has never used the Internet as shown in the graph above.

A further probe to ascertain the level of skills in the use of 'deeper' Internet applications such as the use of web 2.0 yielded the following result.

Graph 3 above: Use of web 2.0 for Scholarly Communication.

The results above show that 78.3% of librarians can not use RSS feeds & readers while only 21.7% can use this application. While 44.8% can use wikis, 55.2% can not; 40% of librarians can use blogs while 60% cannot. Only 34.6% can use online videos against 65.4%; while 19% can use podcasts, 81% cannot; for virtual worlds 31.8% against 68.2% can use this while only 33.3% against 66.7% can use social bookmarking tools. What this result portends is that while librarians in the Nnamdi Azikiwe Library system can use what is classified as first generation Internet applications effectively, they are yet to embrace the second generation surfing skills that constitute the 'deep' web.

Librarians were further asked where they felt that web2.0 tools could be used to enhance their performance. This elicited the following response: while 34% agreed that web 2.0 would enhance file sharing 66% thought otherwise; 38% agreed that it would enhance marketing of library products while 62% disagreed; Again 46% agreed that web2.0 would enhance public relations while 54% thought otherwise; while 44% responded that it would enhance collaboration 56% responded in the negative. Again 48% against 52% agreed it would improve communication; while 56% against 44% agreed it would enhance professional networking of librarians as shown by the graph below.

Graph 4 above: Perceived use of web 2.0 on the job

From the findings on the web browsers used by librarians, it showed that Internet explorer (92%) is the highest used; followed by Google Chrome(66%) and Mozilla Firefox(46%). This shows effective use of web browsers. To be able to elicit the proficiency of librarians in the use of social networks which is a significant aspect of web 2.0, librarians were asked the social networks they belonged. From the analyses of the responses it was observed that 60% belong to face book; while 90% belong to my space and 82% to Hi 5 and 66% to library thing. Ostensibly, librarians belong not only to one social network and this is an important revelation. They do not only know about social networks but also belong to several. However, Librarians' response to the use of web 2.0 to send or retrieve information was not impressive as only 34% use face book; 8% use twitter; 12% use you tube; 34% use blogs and 18% use wikis to send or retrieve information. This further probe shows that even though some librarians are in facebook and some other social networks they have not been using these media optimally either for personal improvement or for effective library services delivery.

Graph 5 above: use of web 2.0 for sending and retrieving information by Librarians.

The use of library 2.0 which is a user-centred mode of serving the library community and which in addition, makes services between library workers and patrons more interactive was elicited. The respondents were asked which methods were used in serving the library patrons. Findings revealed that only 38% of librarians used 'alerts' by e-mail to get patrons know about new collections. It was observed that 50% used Selective Dissemination of Information; while 40% use Current Awareness and 60% use library 'consultancies' to disseminate information to clients. This is expected as the library within the last couple of years created faculty consultancies as an avenue used by librarians to filter information to members of the faculties.

Table 1 Above: factors that affect the level of Network Literacy skills of Librarians.

The table above clearly delineates the factors which librarians have earmarked as encumbering their Network literacy skills these are scores that are above 2.50 in the table. They are lack of constant power supply; Lack of constant Internet access; not many agreed to lack of training as many librarians have recently undergone different types of In-house and external training. Other parameters such as lack of enabling environment, phobia for technology and being too old to learn all received negative scores.

Table 2 Above: Strategies for improving network literacy.

Among the strategies proffered for improving Network Literacy skills of librarians are to enhance networks to improve hands-on ; self learning; use of train-the trainers technique; creating training collaboration with institutions abroad ; learning through group influence and government intervention with release of funds for improving bandwidth and other applications needed to enhance and encourage librarians to acquire more network skills.

Conclusion and Recommendations.

From the results of the findings of this study one can conclude by asserting that librarians in the University of Nigeria,(UNN) library system can send mails effortlessly and with relative ease. A vast majority surfs the Internet daily and weekly respectively. Lack of Internet access is a major encumbrance to its use. The UNN library system has limited access and at the time of this investigation had no access as a result of a problem that ensued. This no doubt would have affected the frequency of the use of the Internet by librarians. A very limited number of librarians can use web 2.0 effectively for scholarly communication. The librarians from their responses also saw the use of web 2.0 mainly as a social network for social communication rather than a media to enhance professional practice and many belong to several social networks such as Face book; My space; Hi 5 and library thing. Majority of librarians also used more than one web browser even though the use of Internet explorer was more used than other browsers such as Google Chrome and Mozilla firefox.

With regard to the examination of librarians use of library 2.0 it was observed from the responses that Library 'consultancies', Selective Dissemination of Information(SDI) and Current Awareness in the following order of importance were used to filter information to the users and library consultancies was also used as a feedback technique to the library. The value of this study to the Library and Information Science profession lies in the fact that in the past there was not enough online content however presently there is an explosion of content online necessitating that librarians must be knowledgeable in globally recognizing and serving networked information and services (Hu, 1996). Knowledgeable in different subject fields online to match users with the needed information which is what the library consultancy often tries to achieve. Factors that encumber the effective use of these new Internet skills are mainly Lack of constant power supply, lack of constant Internet access. These were the two cardinal responses made. Some strategies for improving Network literacy skills such as enhancing networks to improve hands-on , self-learning, creating training collaboration with institutions abroad, learning through group influence, use of train-the trainers technique and government intervention with release of funds for improving bandwidth were proffered. The following further recommendations arising from the results of this study are proffered such as collective procurement of electronic information through the building of and sustaining consortia in Nigeria. There is also a need for sharing of professional skills of librarians which can be encouraged through sabbatical leaves and exchange programmes of librarians within and without the country. Because of the huge capital outlay involved in ICT infrastructure, collective advocacy is encouraged to be able to attract government intervention in university libraries in Nigeria.

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Appendix

Use of web 2.0 for scholarly communication.

Perceived Use of web 2.0 on the job

Use of web browsers

Social Networks belonged by librarians.

Web 2.0 tools used to send or retrieve information

By librarians.

Library 2.0 tools used in serving patrons