Extent of use of Electronic Information Resources for Reference and Information Services in Nnamdi Azikiwe Library University of Nigeria, Nsukka

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Purpose: This study examined the extent of use of electronic information resources for reference and information services in Nnamdi Azikiwe Library, University of Nigeria Nsukka.

Design/Methodology/Approach: The Descriptive research design was employed for the study and four objectives and four research questions were formulated to guide the study. The population consisted of all the nine hundred and seventy five (975) registered postgraduate students of the University of Nigeria Nsukka and 4 reference staff of the University Library respectively. The purposive sampling technique was adopted to select 98 respondents from the postgraduate students while there was no sampling for four (4) reference staff working in the library making it a total of one hundred and two (102) respectively. The instruments used for data collection were questionnaire and interview. Descriptive statistics including frequency tables and mean were used to answer research questions.

Findings: The result revealed that both staff and students used most of electronic information resources in reference information service to a great extent. The reference staff and students sampled agreed that out of the eighteen types of electronic information resources in use in the university library, only six (6) were mostly used. However, both staff and students agreed that power outage, lack of information technology skills, inadequate subscriptions in the user field of study, low bandwith, low speed connectivity and lack of user awareness of new electronic resources among others were the problems hindering the use of electronic information resources for reference and information services in the library.

Implications*:* Some of the strategies for improving the use of electronic information resources based on the challenges encountered by its use for reference and information services includes; provision of affordable infrastructure to promote e-learning, information policies that will attract donors, creation of awareness for opportunities offered by the use of electronic information resources, provision of constant power supply among others.

Originality/Value: Based on the findings, the researcher recommended that the Government should provide steady or alternative power supply to checkmate the epileptic power supply in the university library; development of curriculum by the management in such a way that will create instructional material for an increasing digital world and the development of e-learning content and so on.

***Keywords*:** Use of Electronic Information Resources; Reference information services; Nnamdi Azikiwe Library; UNN

Paper type: Empirical Research

Introduction

The development of higher education in Nigeria is primarily enshrined in the effective use of the resources and services of university libraries. Academic libraries according to Kont (2010) are libraries attached to universities, colleges of education, polytechnics and other institutions of higher learning, serving the teaching, learning and research needs of the staff and students. In the absence of libraries an institution cannot realize its general and specific aims and objectives which include teaching, learning, research, publication and conservation of knowledge. The main purpose of university libraries is to provide their clientele with books and other information sources. The university library provides various services in order to make these resources accessible**.** The traditional method of information delivery can no longer meet the demands of today's sophisticated library users. It is very clear that today's university library services provision in the 21st century is highly sophisticated and predominated by the dynamic electronic information resources so as to meet up with the sophisticated

information needs of its patrons. In the view of Ekwelem, Okafor, and Ukwuoma, (2009) electronic information resources are information sources that are available and can be accessed electronically through computer network facilities, such as online library catalogue, the internet, the world wide web, digital libraries, government portals and websites, CD-ROM databases such as Medline, online, or commercial bases such as LexisNexis. Electronic information resources are important to librarians because they need to have access to timely, accurate and relevant academic information to relay to students especially in direct questions, ready reference questions, specific search questions as well as long range questions respectively. Electronic information resources offer many advantages. According to Nnadi, and Okafor, (2014) an advantage of electronic information resources is that the information needed can be delivered from the most appropriate source to the user. The user can re-specify his or her needs dynamically. Electronic information resources also generate opportunities to find new interests, activities and friends which might be positive in terms of one's quality of life. Electronic resources provide an access to unlimited sources of information through search engines, which are continuously being upgraded to provide efficient ways to help users find what they want. The electronic equivalent offers the ability to integrate text with charts, graphs, photographs, sound, video, and other forms of multimedia (Dadzie, 2005).

The reference services in academic libraries can be regarded as a series of library services which seek to satisfy the need of the user in teaching and learning. Mole (2004) believed that efficient use of electronic information resources is a key to providing access to information and reference services. He further stated that a big challenge is now facing reference librarians in the area of utilizing these electronic information resources to provide reference and give library users improved access to the world's reference sources. Mutala and Ojelokun (2008) defined online services (virtual reference) as the reference service that is initiated electronically, often in real-time, where patrons employ computers or other internet technology to communicate with staff without being physically present. Aina (2004) stated that computer has greatly improved the provision of library and information services to users. Through the use of electronic information resources a user is able to access information, both bibliographic and full-text, in several million documents over a long distance.

Information services on the other hand are the activities that involve the in-depth analysis of the intellectual content of literature of specialist subject area and its systematic organization and dissemination in form of bibliographies, indexes, abstracts and review journals. Reference section of the library plays an active role in displaying the services available in a particular library in electronic format Electronic information resources have much to offer but their utility depends on the users and the extent of use of this type of resource in the acquisition of new skills for effective reference and information services in the university library and without a better understanding, it is difficult for service providers to know if they are meeting the needs of the users effectively. Therefore, this research is important and will succinctly help in thorough understanding of various electronic resources in reference and information services in the library and extent of use of these resources to enable the service providers understand which available databases are currently being used and suggestions regarding the possibilities of improving usage of these resources to meet the needs of users effectively.

Statement of the Problem

The reference department of the university library provides all forms of information resources to support the objectives of the parent institution for teaching, learning and research. Preliminary investigation by the researchers shows that the reference unit of the university library is operating manually in some of the services they render to users and were unable to make use of electronic information resources as a major form of information retrieval.

This has resulted in the inability of the reference department to provide for use recently published materials for use, and also not creating enabling environment for its users to use electronic information resources in reference department. The inability of the users to use the electronic information resources in reference department has resulted in poor research output, poor teaching and learning and lowered the standard of education in the university.

However, some area of the information services make use of electronic information resources, but the extent to which electronic information

resources are used by the reference unit of the library is yet to be determined, hence the need for this study.

Purpose of the Study

The main purpose of this study is to examine the extent of use of electronic information resources for reference and information services in Nnamdi Azikiwe Library, University of Nigeria Nsukka.

Specifically, the purposes are to;

1. Ascertain the degree of use of electronic information resources for reference and information services in the university library.
2. Determine the types of electronic information resources in use for reference and information services in the university library.
3. Identify the obstacles to the use of electronic information resources for reference and information services in the university library.
4. Find solutions to the identified obstacles to the use of electronic information resources for reference and information services in the University of Nigeria library.

Research Questions

The study will be guided by the following research questions:

1. What is the degree of use of electronic information resources for reference and information services in the university library under study?

2. What are the types of electronic information resources in use for reference and information services in the university library under study?
3. What are the hindrances to the use of electronic information resources for reference and information services in the university library under study?
4. What strategies can be adopted to improve the obstacles to the use of the electronic information resources for reference and information services in the university library under study?

Literature Review

Concept of Electronic Information Resources

In the views of Reitz (2004), electronic resources are "materials consisting of data and/ or computer program(s) encoded for reading and manipulation of a computer by the use of a peripheral device directly connected to the computer such as CD-ROM drive, or remotely via a network such as the internet". According to her, the categories includes software applications, electronic texts, bibliographic databases, institutional repositories, websites, electronic books, collections of electronic journals etc. electronic resources not publicly available free of charge usually require licensing and authentication. Electronic resources are resources that can be accessed electronically via the internet or digital media. Electronic resources according to California State University (CSU) (2005) encompasses electronic databases both full text and abstract/citation, electronic journals, both individual and collections, electronic books, electronic articles delivery services, etc. Electronic resources can be accessed remotely via the internet or the world wide web (www) or delivered locally. Electronic information resources may be defined as information resources that are available and can be accessed electronically through such computer networked facilities as online library catalogues, the internet and the world wide web, digital libraries and archives, government portals and websites, CD-ROM databases, online academic databases such as LexisNexis as noted by Ekwelem, Okafor and Ukwuoma (2009). For the purpose of this study electronic resources can be defined as those resources that can be accessed through the use of some electronic devices specifically the computer which is connected to the internet. The internet can either be local or worldwide web.

Use of Electronic Information Resources in the University Libraries

The university library is the academic heart of the university system and its basic purpose is to provide university staff, students, and other researchers with materials, assistances and an enabling environment that would facilitate teaching, learning and research. It is important for library services to focus more on the use of resources provided for their patrons.

According to Joseph (2010) academic library resources are considered a good measure of an institutional excellence and quality. Liyi (2011) affirmed that the information resources and services available in institutional information system must be capable of supporting research activities among the students and faculty members. Ezeji (2008) in his study identified

accessibility as one of the pre-requisites of information use. Hemminger (2007) opined that the more likely they are to be used and users tend to use information sources that require the least effort to access.

As noted by Adegbore (2011), databases and electronic reference are used by academics for both teaching and research among users. Also, he stated that users of electronic information resources in reference and information services have indicated satisfaction with the use of these resources because this leads to better research and enhanced scholarly communication. Digital technology has changed the academic environment. It has not only influenced the teaching style and research methods, but also affected the sources and means of teaching and conducting research (Okello, Obara & Magara 2008). Accordingly today, university libraries provide various online services to their users throughout the world. One of the popular services is the provision of access to online databases consisting of electronic resources such as e-journals, e-magazines, e-books, e-dictionaries, e-encyclopedia, e-thesis and dissertations, web-based OPAC, e-indexes, e-abstracts, e-newspapers, e-bibliographies, e-directories.

There has been exceptional growth in electronic information resources and spending of a substantial amount of their annual budgets on subscriptions to online databases. Electronic information resources can provide many advantages over traditional print-based resources (Tyner, 2014). Electronic information resources can contain current information because they are able to be updated frequently, they offer advanced search capabilities, they offer flexibility in the storage of search of search results, they allow access to information without the restrictions of time and location (Togia & Tsigilis, 2009). Hemminger, (2007) notes that there has been a dramatic shift towards the use of electronic communication of scientific scholarly information since the beginning of the twenty first century. Unsurprisingly, the widespread availability of web-based electronic journals, electronic encyclopedia and electronic dictionaries has been the primary driver of change.

The academic sector has not been left out of the dramatic shift towards the use of electronic communication. According to Golwal, Sonwane, and Vaishnav (2008), electronic information resources have become the most popular tools for research and academic activities. Okello-obura and Magara (2008) state that the major objective of the adoption of the electronic information resources via the internet as well as the timely dissemination of both local and international research output. This is because researchers still need information, mainly for reviewing their existing knowledge on given topics and brain-storming ideas for new research.

Several studies across the world have suggested that the use of electronic information resources in the university libraries could enhance the efficiency, effectiveness and quality of education, learning and research purposes. For instance, Gardner, Tyner (2014) conducted a survey of electronic information resources in the top one hundred colleges and universities in the United States of America and discovered that the quality of circulation and the ability to support teaching and research have been improved tremendously. Dilek-Kayaoglu (2008) examined the usage of electronic information resources by an academic community in Istanbul, Turkey. The majority of respondents supported the transition form print to electronic information resources. Therefore, the importance of electronic information resources cannot be over-emphasized because as asserted by Liyi (2011), electronic information resources as an integral part of an institution's libraries and academic resources assist learning, teaching and research activities at colleges and universities.

Since information has become a commodity that should be productive and competitive, allocating funds to the development of library information systems and on electronic services and resources is crucial. Electronic access to scientific information is certainly one of the key factors in increasing the number of scientific publications by researchers (Kont 2010). However, Bako (2005) opined that less than ten percent of Nigerian university based research is funded externally by foreign bodies and the same percentage by the university research body. The idea of research as an academic activity for generating knowledge for economic development is yet to be fully appreciated in Nigeria by the ruling class, policy-makers and university administrators. Currently, research at university is funded by graduate-students, staff in training and academic staff who themselves are poorly paid (Akpochafo 2009).

Types of Electronic Information Resources in Reference and Information Services in Use in the University Library

In the views of Joseph (2010) some types of electronic information resources were identified as follows;

Federated search: This search as a technology came into existence as a result of the desire by database and electronic resources from multiple and disparate source on a single interface. Examples of resources under federated search include WebFeat, EBSCOhost, integrated search, Swets Wise searcher, Swish-e.

Virtual Reference Service: This refers to the remote delivery of reference sources and resources to users who are not inside the library physically. This service includes knowledge base, online charts, text messaging and co-browsing. Tyner (2014), further defines digital or virtual reference and Ask A Services as internet-based question and answer services that connect users with experts in a variety of subject areas. In addition to answering questions, experts may also provide users with referrals to other online and print sources of information. Thus, the virtual reference service connects the users with libraries or information professionals and helps them to receive direct assistance irrespective of their location and time.

Digital Institutional Repository: Institutional repository as defined by Kont (2010) is the digital collections capturing and preserving the intellectual output of a single or multi-university community which provide a compelling response to two strategic issues facing academic institutions. Joseph (2010) explained that institutional repository is an online searchable, web accessible database containing intellectual works by scholars and researchers organized to increase access to scholarship and ensure their long term preservation. Institutional repository includes D-space, Greenstone, products vital, (VITAL). Lynch (2003) sees institutional repository as a set of services that a university offers to the members of its community. It is most importantly an organizational commitment to the stewardship of these digital materials including long-term preservation where appropriate, as well as organization and access or distribution.

The potential uses of an institutional repository are scholarly communication, management and storage of learning materials, electronic publications and research collections, preservation of digital research work, building university profile by showcasing academic research work, providing an institutional leadership role for the library, research assessment encouraging open access, and housing digitized collections (Barton & Waters, 2008). Pickton and Barwick (2006) agreed that the benefits of repositories to institutions and individuals are- increasing visibility and prestige

Online Databases: JSTOR (http//www.jstor.org). The journal storage is a United States of America based online system for archiving academic journals providing full text searches of digitized back issues of several hundreds of well known journals. This category includes jstor, PubMed, Health Internetwork Access to Research Initiative (HINARI) among others.

Digital Libraries: Digital libraries are perceived as an information service or a collection of electronic information resources which are available in computer processible form Inguta-Oyieke and Dick (2010) identified several examples of digital libraries to include Bartleby Library, Great Books Online, Library of Congress, The New York Library (http://digital.nypl.org),etc. At the start of digital libraries' first decade, what came to be called a digital library had a number of names- 'electronic library, 'virtual library, 'library without walls. Bush at that time director of the United States Office of Scientific Research and Development, called for a new approach to information organization and discovery based on the visionary concept of a mamex- that is, a fast, flexible and efficient desktop device enabling associative indexing and instant access to both a vast library and a scientist's personal files.

A digital library is a field of research and practices with participants from many disciplines and professions chiefly the computer, information and library sciences, publishing, the cultural heritage sector and education. Secondly, it can be defined as systems and services often openly available that (a) support the advancement of knowledge and culture. (b) contain managed collections of digital content (objects or links to objects, annotations and metadata) intended to serve the needs of defined communities, (c) often use an architecture that first emerged in the computer and information/library domain and that typically features a repository, mechanisms supporting

search and other services, resource identifiers and user interfaces (human and machine).

Hindrances to the Use of Electronic Information Resources in the University Libraries

There appears to be an emerging over reliance upon electronic information resources at the expense of the more traditional forms of information. For some users, they want it up on the screen and if they cannot get it up on the screen, they are not interested. However, the importance of print based information must not be dismissed, and it is essential for students, librarians, researchers and other library users to be aware that electronic information resources and print-based resources complement each other.

Enumerating some problems that affect the use of electronic information resources for effective reference and information services in Nigerian libraries in particular, Inguta –Oyieke and Dick, (2010) identified some physical barriers which are related to information and communication technology (ICT) infrastructure and the use of electronic resources. An ICT infrastructure evolved and became more complex as the teaching and learning experience evolved. Problems relating to the use of electronic information resources in Nigeria included frequent power outages by the then National Electric Power Authority (NEPA) which later became Power Holding Company of Nigeria (PHCN) and which is currently Enugu Electrical Distribution Company (EEDC). This problem was not the fault of the university, but had serious repercussions for the Local Area Network (LAN) often causing it to break down.

Personal barriers to the use of electronic information resources are related to the lack of technical skills, information retrieval skills, knowledge of existing resources and services and user awareness of new e-resources in their university libraries. Madhusudhan,(2008) and Mulla and Chandrashekhara, (2006) opined that the major barrier to the use of electronic journals was the lack of subscriptions in their field of studies and a lack of user training, low bandwidth, a lack of printing facilities and terminals and trained staff.

According to Madhusudhan (2010), the most common problem was that of slow access speed. It takes long to view and download pages and it is difficult to get relevant information. He further stated that too much information was retrieved and users could not make use of electronic information resources effectively due to the lack of proper Information Technology knowledge. Another barrier according to Mulla (2011) is that the majority of academics faced a problem of lack of timing or lack of training while others were troubled by hardware and software problems respectively. Bhatt and Rana (2011) identified that the most common problems with the use of electronic information resources were low speed connectivity, lack of awareness about statutory provision for accessing electronic resources by the institutions, technical problems (software and hardware), unavailability and insufficient electronic resources, doubts in permanency, high purchase price, and lack of legal provision. Dhanavandan, Esmail and Nagarajan (2012) pointed out that although a majority of users were satisfied with the use of electronic information resources available in the library, they encountered problem of downloading and lack of knowledge. Bashorun, Tunji and Adisa (2011) showed that the use of e-resources by academic staff in the University of Ilorin was not as stated in the mission statement of the university. Low usage was reported for electronic books, bibliographic databases and electronic journals. These attitudes might be the result of lack of awareness about electronic information resources provided by the library. Furthermore, it was established that academics in the University of Ilorin seem to be equipped with fairly good computer skills that enabled them to search and utilize e-resources.

Ozoemelem (2009) observed that there is a general endorsement by respondents of issues like a large mass of irrelevant information, therefore the need to filter the results from search were some of the basic problems encountered while using electronic information resources in the university libraries. Other problems identified by him were download delay, failure to find information, lack of search skills, high cost of access, epileptic power supply, unavailability of some websites and difficulties in navigating through the electronic information resources.

Strategies for improving the Use of Electronic Information Resources in the University libraries

Education has been identified as one of the public sectors most influenced by technological

developments (Kozma, 2005). The improvement of educational attainment is primary to countries' preparation for global, technological-based changes in all sectors. The formation of policies on the use of electronic information resources is very crucial as it plays an important role in preparing individuals in schools, colleges and tertiary institutions for the workplace (Tyner, 2014). Use of electronic information resources if carefully integrated in education has a potential to facilitate the acquisition of relevant life skills that buttress the development process in the prevailing economic and information order (Rubagiza, Denley, and Suntherland, 2007). The development of these policies should be made in such a way to specifically attract donors (Farrell and Isaacs, 2007). This is because donors have, indeed played a crucial role in the development and implementation of these policies and impact of this is seen in the purposes, outcomes, performance indicators, monitoring, evaluation and implementation strategies that are set out.

Other strategies outlined in the National Information and Communication Technology Strategy for Education and Training (Kenya, Moe 2006) include:

- Promote the development of e-learning resources.
- Facilitate public- private partnerships to mobilize resources in order to support e-learning initiatives.
- Promote the development of an integrated e-learning curriculum to support the use of electronic information in education.
- Promote distance education and virtual institutions particularly in higher education and training.
- Promote the establishment of a national e-resources center of excellence.
- Provide affordable infrastructure to facilitate dissemination of knowledge and skills through e-learning platforms.
- Promote the development of content to address the educational needs of primary, secondary and tertiary institutions.
- Create awareness of the opportunities offered by the use of electronic information resources as an educational tool to the education sector.
- Facilitate sharing of e-learning resources between institutions.
- Exploit e-learning opportunities to offer education programmes for export.
- Integrate e-learning resources with other existing resources.

Moreover, development of curriculum and training of workers and staff both at in-service and pre-service level may be very crucial in achieving the objectives. The curriculum should be built in such a way that will create instructional material for an increasing digital world and the development of e-learning content. Programmes should be developed in such a way to promote the acquisition of computer equipment by every staff/worker. This will help to access the internet, facilitate sharing and teaching resources. The use of electronic information resources should be deployed for the development of a national electronic distance education and training programme that will supplement and complement campus based education at all levels. This should also facilitate lifelong learning and encourage in-service training both in public and private sectors.

Opara (2006) opined that infrastructure particularly electricity and roads have been the major threat to growth on the use of electronic information resources. However, there should be both bilateral and multilateral rehabilitation of this infrastructure with the co-operation of both public and private sectors while identifying potential donors support for capacity building. Farrel (2007) suggested that there should be initiatives supported by parents, the government, non-governmental organizations, or other development agencies and the private sector. Efforts should be made towards improving access to electronic information resources without hitches.

In summary, electronic information resources is playing a significant role in the emerging theories of education, where the academics act as facilitators, providing guidance, drawing students and steering discussions. Universities have a responsibility to exert leadership in the imaginative and thoughtful uses of the best of the new technology for the purposes of better teaching and learning. With all these factors in mind, policy makers and universities are making conscious decision and efforts to take the teaching role in preparing our academics for the challenge.

Methodology

The study adopted descriptive survey research method. The population of the study is 979. This consists of four (4) staff of reference section of

Nnamdi Azikiwe Library, University of Nigeria Nsukka, and a total of nine hundred and seventy five (975) postgraduate students who are currently (2016/2017) duly registered with the library under study, all totaling nine hundred and seventy nine (979). The sample size for the study was ninety eight (98) postgraduate students. The purposive sampling technique was adopted to select 98 respondents from the postgraduate students while there was no sampling for four (4) reference staff working in the library making it a total of one hundred and two (102) respectively. The choice of purposive sampling was for the postgraduate students because, they are homogenous in nature and are likely to respond adequately to the response items. Mendehall & Reinmuth (2004) states, that when population is uniform, a small sample of the entire population provides the same amount of information as a large sample. There was no preferential choice of any element because each has the same probability of being included. Questionnaire was used to generate data for the study. The questionnaire was divided into two, the reference staff questionnaire which was titled "Degree of Use of Electronic Information Resources Questionnaire for Staff (DUEIRQS)" while registered users questionnaire was titled "Degree of Use of Electronic Information Resources Questionnaire for Students (DUEIRQS). Both staff and students questionnaire were made up of 54 items divided into clusters A-D. Cluster A covered background information of the respondent and the use of electronic information resources while clusters B, C, D, contained questions on types of electronic information resources, hindrances as well as strategies for improvement. The only difference between students and staff questionnaire is the background sections. The researchers personally administered the copies of the questionnaire to the 102 staff and postgraduate students of Nnamdi Azikiwe Library. The interview was also personally conducted by the researchers. One hundred and two (102) copies of questionnaire were administered and there was 100% return rate. Data collected were analyzed using descriptive statistics mean and percentages mean score of 2.5 and above and percentage score of 50% were considered as acceptable by the respondents while below 2.5 mean score and below 50% score is considered as not acceptable by the respondents.

Results and discussion

In this chapter, data collected from the respondents were presented in tables and analyzed using percentage and mean. The presentation and analysis were based on the four research questions formulated for the study. All the one hundred and two (102) copies of the questionnaire that were distributed to the four (04) reference staff and ninety-eight (98) users were returned.

Table 1: Degree of use of electronic information resources for effective reference and information services in Nnamdi Azikiwe Library, UNN

		Students				**N=98**		**Reference staff**			**N = 04**		
S/N	**ITEMS**	**VHD**	**HD**	**LD**	**VLD**	**$\bar{X}$**	**RK**	**VHD**	**HD**	**LD**	**VLD**	**$\bar{X}$**	**RK**
1	Internet Resources	53	35	6	4	3.40	1st	3	1	-	-	3.75	1st
2	Web-based OPAC	51	38	5	4	3.39	2nd	3	-	1	-	3.50	2nd
3	e-enclyclopedia	50	37	8	3	3.37	3rd	2	2	-	-	3.50	3rd
4	e-dictionaries	45	41	6	6	3.28	4th	3	-	-	1	3.25	4th
5	e-thesis	42	34	9	13	3.07	6th	2	1	1	-	3.25	5th
6	e-dissertations	36	33	19	10	2.97	6th	2	-	2	-	3.00	6th
7	e-abstracts	32	28	24	14	2.80	7th	2	1	-	1	3.00	7th
8	e-biographies	28	30	23	17	2.70	8th	2	-	1	1	2.75	8th
9	e-directories	16	18	34	30	2.20	9th	1	1	-	2	2.25	9th
10	e-indexes	14	16	33	35	2.09	10th	1	-	1	2	2.00	10th
11	e-bibliographies	15	12	31	40	2.02	11th	1	-	1	2	2.00	11th

Table 1 show that the users agree that a number of electronic information resources are used at high degree. These include: internet resources, web-based OPAC, e-encyclopedia, e-dictionaries, e-thesis, e-dissertations ,e-abstracts, and e-biographies which received mean rating 3.40, 3.39, 3.37, 3.28, 3.07, 2.97, 2.80, and 2.70 respectively. The reference staff manning the library also agreed that internet resources, web-based OPAC, and e-encyclopedia, which had mean scores of 3.75, 3.50, and 3.50 respectively are used at very high degree; while others such as e-dictionaries, (3.25), e-thesis (3.25), e-dissertations (3.00), e-abstracts (3.00), and e-

biographies (2.70) are used at high extent/degree. Both the students and the reference staff agree that e-directories, e-indexes and e-bibliographies which had mean scores of (2.20, and 2.25), (2.09, and 2.00), and (2.02, and 2.00) respectively are used at low degree/extent.

Table 2: Types of electronic information resources in use in the university library

		Students				**N= 98**		**Reference Staff**				**N = 04**	
		AP		**INAP**		**Total**	**RK**	**AP**		**INAP**		**Total**	**RK**
S/N	**ITEMS**	**F**	**%**	**F**	**%**	**%**		**F**	**%**	**F**	**%**	**%**	
1	e-mail	91	92.86	7	7.14	100	1st	4	100	0	0	100	1st
2	e-reference	89	90.82	9	9.18	100	2nd	4	100	0	0	100	2nd
3	Ref Desk	83	84.69	15	15.31	100	3rd	4	100	0	0	100	3rd
4	Pub Med	82	83.67	16	16.33	100	4th	4	100	0	0	100	4th
5	Great Books Online	81	82.65	17	17.35	100	5th	4	100	0	0	100	5th
6	OPAC	79	80.61	19	19.39	100	6th	4	100	1	25	100	6th
7	Wiki	76	77.55	22	22.45	100	7th	3	75	1	25	100	7th
8	Discussion forum	75	76.53	23	23.47	100	8th	3	75	1	25	100	8th
9	JSTOR	68	69.39	30	30.61	100	9th	3	75	1	25	100	9th
10	HINARI	67	68.37	31	31.63	100	10th	3	75	1	25	100	10th
11	EBSCOHOST	65	66.33	33	33.67	100	11th	3	75	1	25	100	11th
12	Integrated search	64	65.31	34	34.69	100	12th	2	50	2	50	100	12th
13	Blogs	62	63.27	36	36.73	100	13th	2	50	2	50	100	13th
14	Swish-e	61	62.24	37	37.76	100	14th	2	50	2	50	100	14th
15	Web-conferencing	60	61.22	38	38.78	100	15th	1	25	3	75	100	15th
16	Question point	58	59.18	40	40.82	100	16th	1	25	3	75	100	16th
17	VITAL	55	56.12	43	43.88	100	17th	1	25	3	75	100	17th
18	Green stone	54	55.10	44	55.10	100	18th	1	25	3	75	100	18th

Table 2 describes the types of electronic information resources in use in the university library under study. Both the students and the reference staff agree that, of the eighteen (18) types of electronic information resources in use in the university library, only six (6) of them are mostly used. These include: e-mail which had a mean of 92.86% and 100% respectively, e-reference scored 90.82% and 100% respectively, Ref Desk had 84.69% and 100% respectively Pub Med had 83.67% and 100% respectively, including Great books online which scored 82.65%, and 100%, and OPAC had 80.61% and 100%. The students and the reference staff equally agreed that other types of electronic information resources in use in the university library are Wiki (77.55 and 75)%, discussion forum (76.53 and 75)%, JSTOR (69.39 and 75)%, HINARI (68.37 and 75)%, EBSCOHOST (66.33 and 75)%, integrated search (65.31 and 50)%), Blogs (63.27 and 50)% and swish-e (62.24 and 50)% respectively.

Although the students also agreed that web-conferencing (61.22%), question point (59.18%, VITAL (56.12%), and greenstone (55.10) are also in use in the university library, the references staff agreed that web-conferencing (25%), question point (25%), VITAL (25%), and Greenstone (25%) are not in use in the university library.

Table 3 shows both the students and the reference staff agree that power outage, lack of information technology skills, and inadequate information retrieval skills which had mean rating (3.31 and 3.50), (3.30 and 3.25) and (3.27 and 3.25) respectively are the greatest hindrances to the use of electronic information resources for reference and information services in the library.

Table 3: Hindrances to the use of electronic information resources for effective reference and information services in the library.

		Students				N= 98		Reference Staff				N = 04	
S/N	**ITEMS**	**SA**	**A**	**D**	**SD**	$\bar{X}$	**RK**	**SA**	**A**	**D**	**SD**	$\bar{X}$	**RK**
19	Power outage	51	34	5	8	3.31	1st	2	2	-	-	3.50	1st
20	Lack of IT. Skills	49	36	6	7	3.30	2nd	1	3	-	-	3.25	2nd
21	Inadequate Information. Retrieval skills	50	31	10	7	3.27	3rd	1	3	-	-	3.25	3rd
22	Low bandwidth and printing facilities	40	33	15	10	3.05	4th	1	2	1	-	3.00	4th
23	Low speed connectivity	41	33	11	13	3.04	5th	2	1	-	1	3.00	5th
24	Inadequate subscriptions in the user field of study	36	33	19	10	2.97	6th	1	2	1	-	3.00	6th
25	Lack of user awareness of e-resources	32	28	24	14	2.80	7th	-	3	1	-	2.75	7th
26	Problem of downloading information.	30	30	24	14	2.78	8th	-	3	1	-	2.75	8th
27	Lack of knowledge of existing resources.	33	27	20	18	2.77	9th	-	2	2	-	2.50	9th
28	High cost of access	15	17	30	36	2.11	10th	-	1	3	-	2.25	10th
29	Unavailability & insufficient electronic resources.	12	18	36	32	2.10	11th	-	1	2	1	2.00	11th
30	hardware & software problems	14	16	33	35	2.09	12th	-	1	2	1	2.00	12th
31	Lack of internet access	10	13	35	40	1.93	13th	-	-	2	2	1.50	13th

Table 4: Strategies for improving the use of electronic information resources for effective reference and information services in the library.

		Students				N= 98		Reference Staff				N = 04	
S/N	**ITEMS**	**SA**	**A**	**D**	**SD**	$\bar{X}$	**RK**	**SA**	**A**	**D**	**SD**	$\bar{X}$	**RK**
32	Creation of awareness of the use of opportunities offered by the use of electronic information resources	50	48	-	-	3.51	1st	2	2	-	-	3.50	1st
33	Encourage e-learning and in-service training both in public and private sector	49	49	-	-	3.50	2nd	2	2	-	-	3.50	2nd
34	Integrate e-learning resources with other resources	48	50	-	-	3.49	3rd	2	2	-	-	3.50	3rd
35	Formulation of policies that will guide the use of electronic information resources	47	51	-	-	3.48	4th	1	3	-	-	3.25	4th
36	Provision of affordable infrastructure to promote e-learning	39	59	-	-	3.40	5th	1	3	-	-	3.25	5th
37	Formulation of policies that will attract donors.	38	60	-	-	3.39	6th	1	3	-	-	3.25	6th
38	Develop programs that will facilitate life long e-learning and complement campus based education at all levels.	37	61	-	-	3.38	7th	1	2	1	-	3.00	7th
39	Development of curriculum and training of workers both in service and pre service level	36	62	-	-	3.37	8th	2	1	-	1	3.00	8th
40	Promote the development of e-leaning resources	34	64	-	-	3.35	9th	1	2	1	-	3.00	9th
41	Acquisition of computer equipment to be done in such a way that workers will access the internet	29	69	-	-	3.30	10th	-	3	1	-	2.75	10th
42	Develop programs that will promote acquisition of computer equipment by every worker	28	70	-	-	3.29	11th	-	3	1	-	2.75	11th
43	Facilitation of e-learning resources between institutions	9	89	-	-	3.09	12th	-	3	1	-	2.75	12th

In Table 4 the mean values ranging from(2.75-3.50) shows that the respondents clearly agree with these as strategies that will significantly enhance the use of electronic information resources. Both the students and reference staff agree that the major strategies include: creation

of awareness of the opportunities offered by the use of electronic information resources (3.57 and 3.50), encourage e-learning and in-service training both in public and private sector (3.50 and 3.50) as well as integrate e-learning resources with other resources (3.49 and 3.50) respectively.

Summary of major findings

From the result of this study, the major findings include the following:

1. The electronic information resources that are mostly used by effective references and information services in Nnamdi Azikiwe library, UNN are internet resources, web-based OPAC, and e-encyclopedia, whereas e-indexes and e-bibliographies are scarcely used by both the students and reference staff.
2. The major types of electronic information resources in use in the university library include: e-mail, e-reference, Ref Desk, Pub Med, Great Books Online, and OPAC.
3. The major hindrances besetting the use of electronic information resources for effective reference and information services in the library are power outage, and lack of information technology skills, while lack of internet access is not considered as a hindrance.
4. Creation of awareness of the opportunities offered by the use of electronic information resources is considered a major strategy for improving the use of electronic information resources for effective reference and information services in the library

Discussion of Findings

The study revealed that the electronic information resources mostly in use by both students and reference staff in the library include internet resources, web-based OPAC, e-ecyclopedia, e-dictionaries and e-thesis for learning and research purposes but they hardly ever use e- directories, e-indexes, and e-bibliographies. During the interview session, the reference staff stated that all the items that scored above 2.5 as enumerated in the table (1) were immensely used by the students and the staff. This substantiates the study of Hemminger, (2007) who found that the widespread availability of web-based electronic journals, electronic encyclopedia, and electronic dictionaries has been the primary driver of change in teaching, learning and research. For these reasons, students and staff need to be trained in the use of searching tools like e-databases, the use of online journals and so on. Furthermore, in order to make use of the growing range of electronic resources for effective reference and information services, both students and staff must acquire and practice the skills necessary to exploit them.

The results of the study indicated that all the types of electronic information resources identified were all in use in the university library. They include on, e-mail, e-reference, Ref Desk, Pub Med, Great Books online, OPAC, wiki, discussion forum, JSTOR, HINARI, EBSCOHOST. On the other hand, the interview session revealed that the reference staff agreed that a number of electronic information resources are used in the university library, but the staff disagree that very few electronic information resources are not used in university library. These include web conferencing, question point, VITAL, and Green stone. The result tends to support the work of (Joseph, 2010), whose study identified some of these types of electronic information resources as a scholarly information resources for staff and students for educational purposes and for research. Also, he insists that the use of these online resources for research and educational purposes by students and staff means that they can be any where to benefit from the works of experts in the different fields of study. Though libraries acquire and house significant number of print materials, such limited acquisitions may not meet the needs of researchers with the proliferation of information in various academic disciplines.

It can be deduced from table 3 that power outage takes prominence among others factors that militate against the use electronic information resources in the university library. The result agrees with the work of Oyieke and Dick (2010) who stated that many academic libraries in Nigeria encounter epileptic power supply and frequent power outages which are the major factors endangering the use of electronic information resources in Nigerian libraries. Another major hindrance is lack of information technology skills. Other major barriers according to the responses are inadequate information retrieval skills, low bandwidth and printing facilities, low speed connectivity, inadequate subscriptions in the users field of study, lack of user awareness of new e-resources, problem of downloading information, and lack of

knowledge of existing resources and services. The reference staff interviewed agreed that epileptic power supply and frequent power outages among others were the major problem against the use of electronic information resources in Nigerian libraries. This finding is similar with the findings of (Madhusudhan, 2008; Mulla and Chandrashekharia; 2006; and Ozoemelem, 2009) in their studies, it was discovered that some of these factors found to constitute problems with the use of electronic information resources were equally found as a barrier with the use of electronic resources in this study. On the other hand, other items which attracted negative responses include: High cost of access, unavailability and insufficient electronic resources, hardware and software problems, as well as lack of internet access. This finding opposes the study conducted by Mulla (2011), Bhatt and Rana (2011) and Ozoemelem (2009) where hardware and software problems, unavailability and insufficient electronic resources, high cost of access, and lack of internet access are among the major barriers that hinder the use of electronic information resources in the university library. Obviously, it has been established from this study that , power outage, and lack of information technology skills have been identified as major barriers for research and educational purposes by both the students and members of staff in the university library.

On strategies for improving the use of electronic information resources in the university library under study, table 4 reveals that creation of awareness of the opportunities offered by the use of electronic information resources was identified as a major strategy. This is a crucial point where the libraries and the university authorities should come in. They need to sensitize the students to get acquainted with the electronic facilities and resources so as to facilitate their research and other academic works. During the interview session, the staff' interviewed concord all the positive items in Table 5 as strategies for improving the use of electronic information resources in the university library. This confirms the assertion of (Rubagiza, Denley, and Sutherland, 2007), that the use of electronic information resources if carefully integrated in education has a potential to facilitate the acquisition of relevant information technology skill which will ultimately enhance research and academic works of students and staff of Nigerian Universities.

It was observed from the responses of both staff and students that all the items enumerated as strategies for improving the use of electronic information resources in the university library were rated positive. The rating was above the criterion mean of (2.50). Such strategies have encouraged e-learning and in-service training both in public and private sector, integrated e-learning resources with other resources, formulation of polices that will guide the use of electronic information resources, provision of affordable infrastructure to promote e-learning, formulation of polices that will attract donors, develop programs that will facilitate long e-learning and compliment campus based education at all levels should come in. Moreover, the libraries and the university authorities should engage in the development of curriculum and training of workers both at in-service and pre-service level. This is in line with the assertion of Kenya (2006) that the curriculum should be built in such a way that will create instructional material for an increasing digital world and the development of e-learning content. Other vital strategies as is evident on the table are: promote the development of e-learning resources, acquisition of computer equipment, develop programs that will promote acquisition of computer equipment by every worker, including facilitation of e-learning resources between institutions. Thus, if these suggestions are seriously and duly considered, it will go a long way in improving the use of electronic information resources for reference and information services in the university library.

Conclusion and recommendations

The study has established that students and staff make use of electronic information resources mostly internet resources, web-based OPAC, e-encyclopedia for research and academic purposes. Also, users face problems like power outage, and lack of information technology skills. However, the researcher recommends that the following strategies be adopted for improving the identified problems. The university library should create and sustain awareness for the use of electronic information resources for reference and information services; encourage e-learning and in-service training both in public and private sector, integrate e-learning resources with other resources. Others include,

formulation of policies that will guide the use of electronic information resources, provision of affordable infrastructure to promote e-learning, formulation of policies that will attract donors, develop programmes that will facilitates lifelong e-learning, development of curriculum and training of workers both in-service and pre-service level. Additionally, the university authorities should make provision for steady power supply or alternative power source so as to checkmate the erratic power supply in the university libraries. More importantly, the university should increase the number of personal computers with latest configurations, as well as providing adequate and stable internet services especially in the university library.

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