THE APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGY ON ACADEMIC LIBRARY OPERATIONS AND SERVICES IN NIGERIA

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ABSTRACT

This study investigated the application of ICT on library's operations and services in selected academic libraries in Nigeria. Five research questions were raised. The descriptive survey design was employed for this study. The population for the study was 50 (fifty) librarians randomly selected from the Western Delta University Library, John Harris Library, and the Delta State University Library,   The questionnaire was the instrument used for data collection. Frequency count and simple percentage was used to analyze the questionnaire. Major findings emanating from the study revealed that internet facilities and computers were available in the selected libraries. It was also revealed that the major reasons for using the ICT facilities in the selected libraries was that students and researchers use it for internet browsing and for the preparation of their lecture notes. It was also found that the services and operations in library where ICT are mostly been applied to are in the acquisition of materials, provision of the OPAC services. It was also found that the major benefits derived from using ICTs in the selected libraries are that it increases work efficiency. Meanwhile, the result of this study also shows that the majority of the respondents identified poor funding and power supply as the major problem militating against the use of the ICTs in the selected libraries. The paper concludes by advocating that the government and the private sector should assist academic libraries in the provision of ICTs facilities and the fund to be able to manage them in order to be able to provide speedy information to their client in the 21st century era.

INTRODUCTION

Technology was introduced in academic libraries of Nigeria in 1975 led by the University of Ibadan, Ahmadu Bello University, and Obafemi Awolowo University. But, the progress has been very slow and many colleges and universities are still behind in providing service to their patrons through technology. Most academic and research libraries in Nigeria have not computerized any of their functions. The public card catalog and the visible index are still finding tools for books and journals. In most libraries, likewise, indexes and abstracts are

compiled manually. Library and information services in Nigeria have yet to transcend the traditional functions (Aguolu, Haruna and Aguolu 2006).

Technology has helped solved the problems patrons face in accessing a few copies of textbooks that are available in the library. Oyegbami (2009) observes that ICT is an instrument of social economic renaissance and if properly used it could excellently stem national and international calamity. If properly used it will assist growth and development of libraries in our higher institutions in Africa, it has conferred new role on the library by bringing about the revolutionary journey from traditional to the digital libraries with new technology it has been possible to access a variety of information and knowledge sources in a manner that would be simple, easy and independent of time, place and subject disciplines (Adenoji, 2012)

Information and communication technologies (ICTs) is defined as a diverse set of technological tools and resources used to communicate and to create, disseminate store, and manage information (Blurton 1999:46), and they encompass a wide range of rapidly evolving technologies including telecommunications technologies, such as telephony, cable, satellite, TV and radio, computer-mediated conferencing and videoconferencing, as well as digital technologies, such as computers, information networks (Internet, the World Wide Web, intranets and extranets) and software applications.

The central purpose of libraries is to provide a service: access to information
(Buckland 1992), and information and communication technologies, especially computers, information networks and software applications, are making it possible for libraries to provide a variety of library and information services to their clients. Taking into account the rate at which innovative use of ICTs is being introduced and the ever declining costs of ICT facilities, it will not be long before libraries also start using satellite and mobile phone technologies to deliver information services to their clients located in remote and inaccessible areas.

Although there are several libraries in the world that are yet to use computers or automate their core functions, it is important to note that libraries were among the early institutions to consider using information technologies. For example, in 1958, the Library of Congress considered using computers (Oyegbami 2009) and in the same year the Director of the National Library of Medicine (NLM) in the United States, Dr. Frank B. Rogers, began looking into computer use, and during the early 1960s, the NLM hired General Electric's Defence Systems Department to develop a new "method of using computers for composition, storage, and retrieval, and printing services for Index Medicus" which resulted in the development of MEDLARS (Medical Literature Analysis and Retrieval System) (Adams et. al. n.d.).

LITERATURE REVIEW
Ebijuwa (2005) defined ICT as tools used for collection, processing, storage, transmission, and dissemination of information. To Anyakoha (2005), ICT is the electronic means of capturing, processing, storing, and disseminating information. The American Library Association (1983) defined information technology (IT) as the application of computers and

other technologies to the acquisition, organization, storage, retrieval, and dissemination of information. Computers are used to process and store data, while telecommunications technology provides information communication tools, which make it possible for users to access databases and link them with other computer networks at different locations.

With advances in ICT, electronic information in the form of electronic books, electronic journals, and the Internet have launched the world into an information age. No institution or organization can still rely on only traditional printed information resource to perform effectively and efficiently. To libraria ns, ICT is a significant development that provides tools for managing the avalanche of information generated by modern society (Etebu 2010).

There has been a growing interest and concern over modernization of library operations and services in Nigeria since 1970's. Over the years, many academic libraries in Nigeria have made attempts to deploy information and communication technology (ICT) to enable it manage its libraries and also to join the global information phenomena (Akinyotu, 1976). He noted that serious application of information technology to library processes started in Nigerian university libraries in the 1990s. Individual effort at using ICTs was attempted in the mid 70s and 1980s by the University of Lagos, University of Ibadan and Ahmadu Bello University, Zaria.

Williams and Channaveeraiah (2008) noted that today, libraries are shifting their role from the custodian of traditional information resources to the provider of service-oriented digital information resources. That Widespread use of computers, increased reliance on computer networks, rapid growth of Internet and explosion in the quality, and quantity of information compelled libraries to adopt new means and methods for the storage, retrieval and dissemination of information. That Development of digital libraries and application of innovative information and communication technologies (ICT) have tremendously increased because it provides enhanced user satisfaction, cost effectiveness, rapid responses, and easier operational procedures. They concluded that academic libraries have been employing ICT and electronic information resources and services to satisfy the diverse information needs of their users. E-journals, CD-ROM databases, online databases, e-books, web-based resources, and a variety of other electronic media are fast replacing the traditional resources of libraries.

Onoriode & Ivwighreghweta (2011) listed modern technology for library to include computers i.e desktop, laptop, i-phone, i-pad etc, peripheral like keyboard, speakers, bar code readers, printers etc. network equipment and cables like Cat-5, coaxial, fiber optics and their various connectors, routers, switches, satellite and their modem. They also stressed that Software like operating system (OS), application and utilities software are part of modern technologies used in academic libraries. According to Olanlokun (1993) modern technologies which also refers to ICT comprises of hardware and software. Hardware is the physical data processing equipments, its peripherals and terminals as well as telecommunication, while software is the collection of controlled programs used to make computers run and perform some specific functions. It includes items like operating systems, teleprocessing monitors, and utility programs that are written to process specific application or jobs for users.

Olanlokun (1993) stated that the advent of the Internet has brought awareness of the importance of global communication. People, organizations, and businesses are better

informed and more connected to each other than ever before. Information that once took several processes and procedures to obtain is now readily available. Though ICTs are commonly available in Nigerian university libraries, the desired impact on library operations like collection management can only be felt when they are also well-used. Online networks, for example, could be used in expedited book selection, book ordering, and book processing, using data from large databases like the OCLC and the Library of Congress. However, if the ICTs are available to the libraries and are not properly used, then the benefit derivable in library services like collection management will be minimal, and will not justify the resources used to make the ICTs available (Olanlokun 1993).

According to Ezomo (2006), the Internet is the gateway for libraries and information centres to enter the electronic information era and provides information generated by different organizations, institutes, research centres, and individuals all over the world. With the general poor funding of libraries, some cannot exploit electronic information resources in open access (OA) in the Internet. It is a double tragedy, as neither new printed resources nor access to current information provided to patrons is available (Nkanu, 2007). Libraries without Internet access may lose their relevance in the academic community. Most students, lecturers, and researchers are aware of what Internet provides, and they resort at a much greater cost to cybercafés to satisfy their information needs (Ajala, 2007). Libraries are not fulfilling their function of providing adequate information resources to support teaching, learning, and research in the institutions under study.

Faced with this new scenario, individuals and organizations in modern society must learn new things and discard old habits and perspectives. They must retool and restrategize. If they fail to do these things, they may lose ground, decline in relevance, and face the possibility of extinction. This is particularly true of library and information personnel whose role in an academic institution is to provide support to the teachers who must impart the skills needed to keep pace with the rest of the world and prepare for the future (Anao, 2003).

Computers are also used to automate manual library functions. Acquisitions, cataloguing, circulation, and serials control are now automated, with much library software available in the market. Online public access catalogues (OPAC) have replaced the card catalogue (Anao, 2003). In Nigeria, most of the tertiary institutions strive to provide ICT, especially Internet connectivity for student use, mostly in the libraries, ICT centres, and computer pools. Many tertiary institutions' libraries in Nigeria are not computerized, and are not Internet connected, and where some ICT facilities exist they are zealously guarded (Nweke, 2006). Faboyinde (2006) laments the fact that the application of ICTs in Nigerian tertiary Institutions shows consciousness of the significant role ICT can play in delivering library services, even though ICT is not fully embraced by most of the higher education libraries in the country.

The problem of ICT in Nigerian Academic Libraries includes the following Poor ICT knowledge; there is a severe and pronounced "low level computer literacy among Nigerians (Okiy, 2005). This makes it difficult for them as users and patrons of academic libraries to make full use of available ICT facilities. This problem is further aggravated by the "shortage of technology literate staff in libraries, the lack of skilled human resources to install and

manage technology networks and poor funding to attract such staff or develop such skill in existing staff. (Ash croft and Watts, 2005)

METHODS

The study employed a descriptive survey design, utilizing the questionnaire to collect data. The population of the survey consists of 50 librarians drawn from the Western Delta University Library, John Harris Library, and Delta State University Library respectively. Frequency count and simple percentage was used to analyze the research question.

RESEARCH QUESTION

The study sought answers to the following questions

1. What are the   ICT facilities available in the library?
2. What are the reasons for using the library's ICT resources by the students?
3. What are the various Services and operations in the library where ICTs are applied?
4. What are the various benefits of using ICT in the library?
5. What are the inhibiting factors against the usage of ICT resources?

FINDINGS OF THE STUDY

The findings of the study are presented in the following tables with a brief summary.

Table 1: Distribution of Respondents by Gender

Gender	No of Respondents	Percentage
Male	20	40
Female	30	60
Total	50	100%

Table 1 shows that 30 (60%) of the respondents are female while 30 (60%) are female. This shows that there are more female librarians in the libraries investigated.

Table 2: Distribution of Respondents by Age

Age Range	No of Respondents	Percentage
25-35yrs	6	12
36-45yrs	30	60
46-55yrs	10	20
56 and above	4	8
Total	50	100%

Table 2 shows that majority 30(60%) of the librarians are within the age range of 36-45yrs old, followed by 10 (20%) librarians who are in the age range of 46-55yrs respectively.

Table 3: Educational Qualification of Respondents

Academic Degree	No of Respondents	Percentage
MA/MSC	35	70
BSC/BA	5	10
PhD	10	20
Total	50	100%

Table 3 shows that majority 35(70%) of the respondents have MA/MSC degree, followed by PhD 10 (20%) degree respectively.

Table 4: Distribution of Respondents According to their Libraries

Libraries	No of librarians	Percentage
Western Delta University	5	10
John Harris Library	25	50
Delsu	20	40
Total	50	100%

Table 4 shows that majority of the respondents were from John Harris library 25(50%), followed by Delsu library 20 (40%) respectively.

Research Question 1
What are the ICT facilities available in the selected library?

Table 5: ICTs facilities used in the selected academic library

Awareness of institutional Repositories	SA		A		D		SD	
	No	%	No	%	No	%	No	%
Completely aware								
Know very little								
Completely aware	30	60	10	20	5	10	5	10

Table 5 shows that majority of the respondents 40 (80%) and 8 (16%) strongly agreed and agreed that the internet facilities are available in their libraries, followed by 30 (60%) and 10 (20%) who strongly agreed and agreed that the computers is also available while 29 (58%) and 10 (20%) agreed that they have printers in their respective libraries.

Research Question 2
What are the reasons for using the library's ICT resources by the students?

Table 6: Reasons for using ICT

Reasons for using ICT	SA		A		D		SD	
	No	%	No	%	No	%	No	%
Research	20	40	15	30	10	20	5	10
Lecture materials	30	60	10	20	6	12	4	8
Searching for information	20	40	12	24	10	20	8	16
Internet browsing	40	80	10	20	-		-	
games	10	20	15	30	20	40	5	10
Electronic communication	20	40	5	10	15	30	10	20
Scanning documents	10	20	5	10	27	54	8	16
photocopying	30	60	-		18	36	2	4

Table 6 shows that majority of the respondents 40 (80%) and 10 (20%) strongly agreed and agreed that the reason for using the ICT facilities in the selected library is that students and researchers use it for internet browsing, followed by 30 (60%) and 10 (20%) who strongly agreed and agreed that they use it when preparing lecture notes while 20 (40%) and 15 (30%) agreed that they use it when carrying out their research work

Research Question 3
What are the various services and operations in the library in which ICTs are applied?

Table 7: Services and operations in library where ICT are been applied

Services Rendered in Library	SA		A		D		SD	
	No	%	No	%	No	%	No	%
Reference Services	23	46	10	20	15	30	-	
Cataloguing and classification	20	40	10	20	10	20	10	20
Online Public Access Catalogue	30	60	10	20	6	12	4	8
Acquision	40	80	5	10	-		5	10
Virtual/Digital Services	20	40	2	4	20	40	8	16

Table 7 shows that majority of the respondents strongly agreed 40 (80%) and agreed 5 (10%) that the services and operations in library where ICT are mostly been applied to are in the acquisition of materials, this is followed by OPAC 30 (60%) and 10 (20%) of the respondents who agreed and strongly agreed that they render the Online Public Access Catalogue Services to their users.

Research Question 4
What are the various benefits of using ICT in the library?

Table 8: Benefits of using ICT in the library

Benefits of ICTs in libraries	SA		A		D		SD	
	No	%	No	%	No	%	No	%
Eliminate repetitive works	20	40	10	20	15	30	5	10
provision of access to unlimited information	30	60	15	30	3	6	2	4
Increase range of services offered	30	60	8	16	10	20	2	4
Increases work efficiency	35	70	5	10	5	10	5	10
Organization of information for use	10	20	20	40	10	20	10	20
Online reference services	20	40	10	20	15	30	5	10

Table 8 shows that majority of the respondents 30(60%) and 15 (30%) agreed and strongly agreed that the major benefit derived from ICT is that it increases work efficiency. Similarly all the other responses had positive responses towards the benefits derived from ICT in their respective libraries.

Research Question 5

What are the problems militating against the use of ICT in the library?

Table 9: Problems militating against the use ICTs in the library

Problems of ICTs in libraries	SA		A		D		SD	
	No	%	No	%	No	%	No	%
Power supply	30	60	10	20	6	12	4	8
funding	35	70	4	8	10	20	1	2
Lack of technical no how	30	60	2	4	10	20	8	16
Lack of awareness of ICT	20	40	10	20	16	32	4	8
Lack of ICT facilities	30	60	7	14	3	6	10	20

Table 9 reveals that majority of the respondents 35(75%) and 4 (8%) agreed and strongly agreed that funding is the major problem militating against the use of the ICTs in the selected libraries, this is followed by 30 (60%) and 10 (20%) who strongly agreed and agreed that power supply is also a problem. Similarly all the other responses had positive responses towards the problems militating against the use of ICT in their respective libraries.

DISCUSSION OF FINDINGS

The respondents indicated overwhelmingly that the internet facilities and computers are available in their libraries. This findings is in conformity to Williams and Channaveeraiah (2008) who noted that today, libraries are shifting their role from the custodian of traditional information resources to the provider of service-oriented digital information resources. That Widespread use of computers, rapid growth of Internet and explosion in the quality, and

quantity of information compelled libraries to adopt new means and methods for the storage, retrieval and dissemination of information.

It was also found that the reason for using the ICT facilities in the selected libraries was that students and researchers use it for internet browsing and for the preparation of their lecture notes. This finding is in agreement to that of Olanlokun (1993) who stated that the advent of the Internet has brought awareness of the importance of global communication. Also supporting is view is Etebu (2010) who noted that with advances in ICT, electronic information in the form of electronic books, electronic journals, and the Internet have launched the world into an information age.

It was also found that the services and operations in library where ICT are mostly been applied to are in the acquisition of materials. This finding is in conformity to that of Faboyinde (2006) who lamented the fact that the application of ICTs in Nigerian tertiary Institutions shows consciousness of the significant role ICT can play in delivering library services.

It was also found that the major benefits derived from using ICTs in the selected libraries are that it increases work efficiency. These findings is in conformity to that of Buckland (1992) who noted that information and communication technologies, especially computers, information networks and software applications, are making it possible for libraries to provide a variety of library and information services to their clients.

Meanwhile, the result of this study also shows that the majority of the respondents identified funding and power supply as the major problem militating against the use of the ICTs in the selected libraries. This finding is in agreement to that of Ash croft and Watts (2005) that identified poor funding, lack of skilled human resources, shortage of technology literate staff in libraries as some problems militating against the use of ICTs in libraries.

CONCLUSION

The paper concludes by advocating that the government and the private sector should assist academic libraries in the provision of ICTs facilities and the fund to be able to manage them in order to be able to provide information to their client in the 21st century era.

RECOMMENDATION

Electricity should be restored to places where ICTs are available to enable library users' make maximum use of the facilities. The need exist for the library to acquire high powered generators which will serve as backup in case of power outage.

Training on internet search skill should be given to the to library users to enable them make adequate use of the ICT facilities

More computer terminals or work station should be created to enable users have access to the internet.

Awareness programmes should be put in places to sensitize library users on the benefits derived from the use of ICTs.

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