

**INFORMATION AND COMMUNICATION TECHNOLOGY COMPETENCIES
NEEDED BY LIBRARIANS IN FEDERAL UNIVERSTY LIBRARIES IN SOUTH-
EASTEN NIGERIA**

BY

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DEDICATION:

This thesis is dedicated to God Almighty in which there is no failure.

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Mrs. Okoro, C. A.

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ABSTRACT

The purpose of the study is to identify the information communication technology competencies needed by librarians in federal university libraries in south - eastern Nigeria. This is achieved by examining the opinions of librarians on ICT competencies needed by them in their electronic environment. Five research questions were formulated to guide the study. 118 copies self administered questionnaires were distributed to the population of 104 librarians in the four federal university libraries used. Out of which 95 were returned representing 80.5% of the copies distributed to respondents. To analyze the data, descriptive statistics were employed, such as: percentages and mean to answer the research questions. The result obtained from the findings revealed that: librarians still need some level of ICT competencies to cope in their ICT environment. That most of them already possess basic ICT competencies not enough to make them proactive in their new ICT environment. Problems such as lack of fund, lack of ICT facilities, constant change in ICT industry etc, may hinder librarians' ICT competency acquisition. Based on these research findings, the researcher made possible recommendations such as: The university libraries and their authorities should press for more fund from government, seek for alternative sources of fund for ICT projects, continually organize ICT training programmes for librarians and themselves, map out ICT training policy, partner with ICT compliant libraries and urge government to provide solar back-ups in every university library in Nigeria.

CHAPTER ONE

INTRODUCTION

Background to the Study

The major objective of the university library is to provide information resources in support of teaching, learning, research and community services that go on in the parent institution. The library remains the fulcrum upon which the goal of any academic institution revolves. Every academic community relies on the library, not just as an information custodian for its academic goals and objectives, but also as an organ for gathering and collecting information resources of all kinds and forms. The library assumes intellectual and physical control of information resources, organizes, manages and makes these resources available to users. The users of the library go on to consume information resources directly or make use of the resources indirectly to create more information through research and publication. Indeed, the library is so central to the institution's academic program in such a way, that without the library, the overall academic output will diminish in quality and may eventually be mere sham (Edoka, 2001).

Traditionally, the university library strives to satisfy the needs of their clientele by collecting, organizing, preserving and disseminating information resources specifically tailored to suit their curricular and research interests. This function has been usually performed by Librarians. Information professionals who must have obtained at least a first degree in library and information science and accepted by Librarians' Registration Council - a body established by degree 12 of 1995 and charged with the responsibility of regulating the practice of librarianship in Nigeria. Librarians, accomplish this function through the development, deployment, and management of information resources and services (Ehigiator, 2000). Challenges in university libraries have always been met by them because most of them

were trained in library schools and mentored by more experienced colleagues who thought them knowledge, abilities and attitudes that must be possessed to be able to carry out a specific function in a standardized way.

The requisite traditional operational and service skills, without which information professionals will be termed inefficient, includes: Management skills: personnel, finance/ budgeting, public relation and other administrative skills. Collection development skill: identifying new publications, refreshing of library stock through evaluation and weeding, judicious selection of new materials, budgeting and accountability; Public services skills: Good rapport, communication, users profile request analysis, time consciousness, knowledge of library stock, speed and accuracy; Technical services skills: knowledge of classification scheme, patrons' areas of interest and specialization, filing/ alphabetization and library statistics.(Aunobi, 2004). Librarians with the above mentioned skills in the traditional setting were referred to as icons and masters of all field of knowledge. Till the later part of the 20th century, information from every source was packaged and disseminated on print-based platform. Librarians have nothing to worry about so far as the status quo is maintained. Emphasis was on library holdings, print collection and on-sight services. Clienteles in libraries were required to physically visit the library before they benefit of these services. Ownership of information resources in print form was a measure of the strength and capability of libraries to provide the needed services.

The sudden merger of information and communication technology (ICT) in the 1940s launched the world information packaging and services into global electronic platform. ICTs in general sense refer to the new technologies that have emerged from the integration of information technology (IT) and communication technology (CT). Akinde (2002) stated that information and communication technology (ICT) as terminology has overtaken information technology (IT) because of its appropriateness and its utilitarianism.

Achuonge (2005) defines ICT as the application of computers and telecommunication gadgets to process, store retrieve, and send information of all kinds in whatever form or distance. He added that it encompasses modern technologies such as communication, satellites, radio, television, video, tape recorders, compact discs, floppy diskettes, flash memory, CD-ROM, personal computers and other related equipment so that the output generated can reach the overall benefit of mankind and in good time. ICT in this 21st century in libraries have become a global issue. With the establishment of Internet in 1969 and development of World Wide Web in early 1990s as well as the global information explosion, the global society is propelled to 'the information society'. Thus information is not only produced in quantum but is readily available in environment outside the walls of the library. Using the Internet, information could be accessed bridging the global divide through the worldwide web, electronic mail, news group, electronic journals, electronic database, video conferences and lately Web 2.0 which gave rise to library 2.0. By way of consolidation many electronic companies namely Google books are transforming the already existing print resources to digital formats thereby demonstrating their readiness to displace library and information professionals and what their operations and services stand for (Lewis 2007). The implication of these trends as noted by Thorhauga (2004) is that the routine associated with public services, cataloguing, collection development and searching are changing completely along with other core services needed to service customer's needs in libraries. Many librarians in developed countries are already thinking and talking in electronic terms, performing and operating digitally. In Nigeria, the case is different, most librarians in university libraries still lack competencies needed in this new ICT environment. Ekoja (2007) reasoned that this may be as a result of the nature of the professional training they received in years past and the failure of some of them to receive complementary training that will bridge the competency gap created by ICT.

Competency according to Mansfield (1999) is an underlying characteristic of a person that results in effective or superior performance. Rankin (2002) describes competencies as definition of skills and behavior that organizations expect their staff to practice in their work place. He also explained that competencies represent the language of performance. They can articulate both the expected outcomes from individual's efforts and the manner in which these activities are carried out. Makara (2002), explained that skills are knowledge of how a particular piece of work ought to be done, and competencies are abilities that a person possesses to be able to carry out a specific piece of work. The two terms are closely related concepts and are often used interchangeably. Skills and competencies usually refer to technical abilities and such abilities are obtained from some kind of training, which is often conducted in a formal manner. They are an indispensable component in the advancement of librarianship. Omekwu (2003) relates competencies to librarians' knowledge of information source, access to technology, management, and ability to use this knowledge as basis for providing the highest level quality information services to their users. He went further to state that competencies relates to skills, attitudes and values that enable a practitioner to work efficiently, be a good communicator, focus on continuing education or leaving throughout his career, demonstrate the value and remain flexible and positive in an ever changing environment. Thus, competency includes: what is known and understood about a subject in order to ensure successful performance on the job. For example, the knowledge and understanding of social and intellectual needs of a library's client group, skill which are necessary to process this knowledge. An example of this is effective communication skills, appropriate attitudes and values which are exhibited in behavioral characteristics that impact the way knowledge and skills are brought to bear on the job. These are usually internal evolutions of what is considered important, such as the insistence on giving the best practices and beliefs have been challenged and in most cases wiped out.

There is a paradigm shift in the traditional role, purpose and operation of the library. The way information is made available and the way users wish to access it have changed. Scholarly communication has been transformed and the issue of e-learning manifest to replace the commercial publishing, physical teacher-student interaction respectively. The academic community can be said to be ICT charged. Clienteles in these modern times can only prefer the library not only when there is internet connectivity, e-journal, e-books, online newspapers, dissertations, or when they can download them digitally. But when they are being given the best type of professional services that proves librariansø competency level with ICT that will enable them break research on real time. Librarians can only be relevant if their professional proficiency is able to satisfy these ICT recreational needs such as, the provision with social software like Face book, Blogs, Twitter, flickers, MySpace, YouTube and others. Librarians may then have a need to migrate from the traditional library environment to the new environment created by information communication technology; and for this transition to be smooth, they will need some level of ICT competencies to enable them settle professionally in the new environment they find themselves.

Statement of Problem

Traditionally the role of librarians in the university library has always been collection development, organization, preservation, and dissemination of information materials to users with the aim of satisfying their information needs. But the application of ICT and other related equipment in university libraries is increasingly becoming a determinant and major issue in the achievement of its major objectives. ICT has risen because of the need to cope with the proliferation of information and keeping pace with its handling, processing with greater speed and accuracy. ICT has tremendously transformed the way information is gathered, processed, preserved, accessed and disseminated to the user community. It has created diversified channels for access and distribution of information and knowledge,

collapsed the waiting time and has also provided librarians and their users with more tools in terms of information resources and access points.

Information communication technology (ICT) has brought with it so great opportunities as well as sobering challenges for librarians. The traditional role of librarians as information professionals have been enhanced by ICT leaving more tools in their hands. They are now increasingly responsible not only to provide traditional library information services but also to deliver ICT related services according to the actual user needs and expectations. Librarians are under great pressure due to the increasing demands of achieving high level of performance in the areas of competencies, skills, knowledge, attitudes, and values with the use of ICT by users. This has also increased their expectations when they visit the library. Besides, most of them already possess ICT competency for themselves. Contrarily, Akintunde (2006) observed that many librarians in Nigeria still operate in the traditional service pattern where they are in charge in main service points such as: circulations, reference, serials, acquisition, cataloguing and document. Ugwu (2010) affirmed that out of experience that IT competencies in these libraries are still lacking. This situation has been of great concern to many writers and individuals (Nwachukwu, 2005; Edem, 2008; Anunobi, 2010). This concern is not that librarians in university libraries under this traditional setting are no longer providing the much desired services to their communities, but this stems from the fact that many librarians in these libraries in Nigeria, have functioned under the traditional manual environment and information communication technology forces are fast dictating the pattern and speed of their services delivery both internally and globally. Librarians may therefore need some level of information communication technology competencies to function as competent information professionals in their new ICT environment. This will enable them to avoid the risk of obsolescence and irrelevance in the

scheme of things. The following question now emerge: what competencies are needed by librarians to enable them cope in this era of information communication technology?

This question definitely demands urgent investigation. If this is not done, there is the danger that librarians in these federal universities libraries, may not cope with the demands of current information services by users. This may also reduce their professional confidence and relevance especially in the new ICT environment which they found themselves.

Purpose of the Study

The broad purpose of the study is to examine ICT competencies needed by librarians in federal university libraries in south eastern Nigeria. Specifically, objectives of the study seek to:

1. Find out competencies needed by librarians to enable them cope with ICT.
2. Find out ICT competencies possessed by librarians in the library.
- 3 Identify methods librarians can acquire ICT competencies.
- 4 Determine problems hindering the acquisition of ICT competencies by librarians.
- 5 Find out strategies for enhancing the acquisition of ICT competencies by librarians.

Research Questions

The following research questions have been formulated to guide the study.

1. What competencies are needed by librarians to enable them cope with ICT?
2. What ICT competencies are possessed by librarians?
3. What methods can be use by librarians to acquire ICT competencies?
4. What are the problems hindering the acquisition of ICT competencies by librarians?
5. What strategies can be used to enhance the acquisition of ICT competencies by librarians?

Significance of the Study

This study will hopefully be of great benefit to all library managers, librarians, aspiring librarians, researchers and library patrons in the following ways:

It will enable library managers to know the ICT competencies needed by their librarians in this electronic age to acquire process, organize, preserve, and make information available to patrons. It will expose them to existing gaps in their staff competence in turn help them to organize relevant training programmes to fill such gaps. Aside this, library managers through this work, will develop relevant ICT training policy generally for staff in order to ensure continual acquisition of ICT competency by librarians. Federal university library managers will significantly find it handy when searching for guide on staff recruitment policy in the area of ICT competency that must be possessed by librarians before or after recruitment.

To librarians, it will help to identify existing gaps in their individual competencies which are needed to restore their self-image, professional integrity and become more proactive in global competitiveness in their new ICT environment.

It will enable aspiring librarians to become more familiar with the basic and advanced ICT competencies needed for modern librarianship.

Researchers will develop more confidence in librarians in federal university libraries and become more attracted to better library services which will result to added value during research work.

Scope of the Study

This study will focus on ICT competencies needed by librarians in federal university libraries in south-eastern Nigeria. The study is limited to data collected from librarians in these libraries namely, Nnamdi Azikiwe Library of the University of Nigeria Nsukka;

Michael Okpara University Library of Agriculture Umudike; Nnamdi Azikiwe University Library Akwa; Federal University of Technology Library, Owerri, all in federal universities in south-eastern Nigeria.

CHAPTER TWO

REVIEW OF LITERATURE

This chapter presents a review of related and relevant literature on the topic. The review is done under the following headings:- Conceptual frame work, Effects of ICT on federal university library services, ICT competencies possessed by librarians in federal university libraries, ICT competencies needed by librarians in federal university libraries, Methods of acquiring ICT competencies by librarians in federal university libraries, Problems hindering ICT competency acquisition by librarians in federal university libraries, Strategies for improving these problems in federal university libraries, Review of empirical study, and summery of literature.

Conceptual Frame Work

Information Communication Technologies (ICT) is now globally regarded as essential tools in libraries. Osuala (2000) defines information as data that has been processed, so that they can be used in making decision while Mbanefo (2004) described it as a general term to all types of organized facts, policies, procedures and other details that modern office must have readily available for the completion of activities. He also explained that data is often times mistaken for information. Data, he pointed out, are unorganized facts, names, numbers, and qualities and so on but when these data are sorted, listed or organized, so that they can be used in decision making, then they are known as information. Data are therefore facts, events, transactions and so on which have been recorded. They are the input of raw materials from which information is produced. Information according to Lucy (2005) is data that have been processed and communicated in such a way that it can be interpreted and understood by the recipient. Information must therefore tell a recipient something not already known and which cannot be predicted. The understanding of clientele's information needs will assist in appropriate information by librarians. Federal universities libraries in Nigeria are expected to

have a structure in place through which they can as a matter of ongoing process, obtain the needs of their clientele. This has to be so because the ever-changing electronic environment demands it. Information needs to be obtained as well as communicated to them. Bakpo (2002) defines communication as a process of making signs (natural, universal), symbols, verbally, consciously or unconsciously but intentionally conveys meaning to another in order to effect change. Communication occurs only when information moves from the input of one process to the later process being the inverse of the first process. According to Ugah (2008), a library is an agent of communication. This he confirm because, it is the repository of different kinds of information, information sources, and knowledge from where users try to retrieve and satisfy their information needs. Customer satisfaction has been found to be a major reason for repeat business performance whether money is exchanged or not. The librarian's competency in meeting the needs of the patrons is very essential to continuous patronage. As a matter of fact, proliferations of information in this electronic environment need to be competently gathered and communicated to library clientele via some modern technologies by librarians. Okangwu (2007) defines technology as the systematic application of scientific and other organized knowledge to practical task. He went further to explain that technology is more than subduing or controlling the environment, it has become a means or tool for achieving enhanced value and by so doing generating surplus (value added surplus). Aliyu and Issa (2003) remarked that the advent of technology has come to change the way information is gathered, processed and communicated to end users. Fatoki (2005) supports this view by revealing that technology in all its various forms is becoming an integral part of almost all library services. Librarians globally now use technology to facilitate and enhance their library operations. The advent of information communication technology (ICT) has brought about great changes to the relationship between the services providers and their users

to some extent; it has reduced intermediation between them as users can from their desks access the library to satisfy their information needs.

Achuonge (2004) defines ICT as the application of computers and telecommunication gadgets to process, store, retrieve and send information of all kinds in whatever form or distance. He added that ICT encompasses modern technologies such as communication, satellites, radio, television, video, tape recorders, compact discs, floppy diskettes, flash memory, CD-ROM, personal computers and other related equipment so that the output generated can reach the overall benefit of mankind and in good time. Other authors have provided further definitions of ICT. Rodriquez and Wilson (2000) described ICT as a set of activities, which facilitate by electronic means, the processing, transmission and display of information. Akitunde (2004) views it as a terminology that has overtaken information technology (IT) because of its appropriateness and relevance. Adeyoyin (2005) posits that it is the acquisition, processing, storage, and dissemination of information by means of computers and other telecommunication equipment. Odotuwa (2006) described it as a range of technologies for gathering, storing, retrieving, processing, analyzing and transmitting information. Fagbani (2009) holds that it is an umbrella term that includes all technologies for the manipulation and communication of information. Wilson (2000) sees it as the set of activities which facilitates by electronic means the processing, transmission and display of information. Thus, ICT, whichever way is defined, are versatile and powerful technologies used in producing, organizing, and distributing information. It is a broad based term that encompasses the gathering (acquisition), organizing (packaging), storage and retrieval (dissemination) of information that can be in textual or numeric (books and documents) pictorial and vocal forms (audio-visual), using a combination of all the telecommunications (telephone) (Wirsiy and Shafack, 2002). ICT is a general expression covering computers, telecommunications and electronics. It has become the nervous system of contemporary

society, transmitting and distributing sensory and control information and interconnecting a myriad of interdependent units. The configuration of basic ICT system comprises eight essential components which Haag and Kleen (1996) described as the building blocks of an ICT system. These are:

- (a) **Input device:** Which enables a user to enter or input information and commands into a system. Example of this is the fax machines.
- (b) **The processing unit:** Which is made up of the central processing unit (CPU), and the internal memory or Random Access Memory (RAM).The CPU executes the instructions provided by or, in particular software or command in order to perform a task.
- (c) **Software:** This is a set of instructions given to the computer, to enable it perform particular task or operations. Examples include Operating System (OS), Microsoft Word, SPSS, etc.
- (d) **Communication device:** These are communication devices used to connect ICT system and people in different parts of the globe. Some examples include, satellites, modern, cables, networks cards, etc.
- (e) **Information:** This is what is processed. It may be textual, audio, pictorial/ visual or motion.
- (f) **Output device:** These are devices that enable us to receive information from the system. Some examples include monitor/screen, printer, loud speakers etc.
- (g) **Storage devices:** These are used to store information on a permanent basis. They include: CD-ROM, tapes (audio and video), floppy disk flash drives hard disk etc.
- (h) **People:** This is the most important components of ICT system. Without people, ICT system will be nonfunctional. Regardless of tools, the focus must be on the people who will use the technologies themselves. Librarians need to understand their capabilities.

Without the librarians' competence in the use of ICT system the equipment will be nothing but a piece of electronic equipment that takes up space and gathers dust.

The use of ICT in libraries globally has risen because of the need to cope with information explosion, in order to keep pace with handling the increasing number of information processing with greater speed and accuracy than manual processing (Aina, 2004). The greatest challenge to the library has been to adapt and keep pace with the knowledge and technological expertise necessary for using ICT. Since the early 1970s, the library has expanded to incorporate media (photographic and graphic pictures, slides, and film loops, vinyl records, audio and video cassettes, radio, television, games), telecommunications capabilities (antenna, cables, and satellites TV, local area network, and Internet connections), and digital computer based technology (computers, CD-ROM-based and other local or remote electronic databases) (Ehikamenor, 2002). Among these technologies, computer and the Internet as a matter of fact can be described as the backbone, nucleus or hub of ICT applications in libraries. Ikekaonwu (2002) describes computer as an automatic, electronic/electromechanical machine that follows instructions stored within it to capture data, process data and display information. The computer has proliferated because it can process data and deliver information efficiently and at relatively low cost. It is important to note that a computer is incapable of doing anything more than what people instruct it to do. According to Mbanefo, (2004), the computer is not an electronic brain capable of thinking or reasoning. Every computer operation must be anticipated and programmed by people. Once programmed however, a computer can carry out processing instructions slavishly, operating at speeds that are measured in trillions of a second and with virtually hundred percent of accuracy. Computers have permeated libraries because of their ability to perform high error-free repetitive library at speed much faster than human being. It has immensely enhanced the effectiveness of information management, acquisition,

classification, cataloguing, circulation, serial control and stock verification. Computer is now used in library to improve communication internally and externally via e-mail, video conferencing and chat room facilities on the Internet. It has come as an enhancement to enable librarians to access users' information needs at a glance and more efficiently.

Administration and maintenance in libraries are now made more efficient and effective with the use of computers which are of immense help in doing many administrative jobs, such as, making employees' directory, duty chart, record of committees, library rules, periodical statistics, periodical reports, stock verification, leave record of employees as well as internal office orders.

Acquisition activities have also been made easy with the use of computers for example, keeping of vendor directory, list of books recommended for acquisition, integration of acquisition data with cataloguing, circulation, and documentation modules and data entry under various bibliographic fields such as author, title, collaborator, accession number, class number, series, editor for series, collation, keywords, etc.

Classification of books can be done speedily with the use of computers by its integration with acquisition module, catalogue cards by a given code can now be done in a desired sequence, document can now be searched through Boolean search, print search result can be saved, a book can be catalogued directly and integrated with acquisition module, the creation of Open Access Catalogue (OPAC) has made this easy. With the computer it is easy to integrate acquisition and cataloguing modules so that an identification number, accession number of book, and other relevant information about a book can be obtained from the computer. Borrowers, categories with date and date due can be recorded perfectly with the computer. Computer has also enhanced serials control. Periodicals can now be acquired, organized, stored and disseminated speedily to researchers via computer terminals. Faraway library patrons can now reach out through the Internet via computer terminals.

Internet is a global network of computers that provide a variety of information resources and data to the people that use it. It hosts several services. The Internet has emerged to facilitate the librarians' level of distance communication and information assessment from the World Wide Web (WWW). A collection of hyper-linked web pages published on the internet. They are systems of servers enabling access to specifically arranged documents usually formulated in hypertext markup language (HTML). Normally, they are being hosted on hypertext transfer protocol (HTTP) servers. Hypertext transfer protocols, support web browsers (Internet Explorers and Netscape) and web pages. Web pages are published by organizations inclusively, libraries and individuals who are interested in publicizing their libraries and themselves. A collection of web pages belonging to an organization is what is called a website. Websites usually has a unique address on the internet called uniform resources locator (URL) for example, (<http://www.amazon.com>) which is a website for books in the Internet Lucy (2005). This was previously not possible in the traditional setting of libraries. The internet is now a global communication system. In the last couple of years, students and lecturers in Nigerian tertiary institution have preferred access to electronic sources delivery and networked information from their respective library (Covi and Cragin, 2004) According to Akinntunde (2006), internet access is one of the greatest technological advancements being experienced in this 21st century. It revolves around ICT which has gone a long way to influence the mode of information gathering, storage, retrieval and dissemination in these times. By means of clients' device such as computers, fixed and mobile telephone sets, digital cameras, and other, the internet can be used for all kinds of personal communication including electronic desktop publishing, electronic document delivery, digitization, web browsing (email) telephone conversation (voice on IP), data conversion, web designing, searching online databases (online journals, bibliographic and indexing databases), networking (LAN/WAN) etc. Internet has become the apex of

information and records, facilitating information generation and sharing across the globe. It has reduced the world to a global village, linking cultures and people and creating new vistas of knowledge. Traditional librarians may need some level of ICT competencies to search for information, analyze information, represent information, and evaluate information on the Internet to satisfy their clientele and to remain on the cutting-edge as information professionals.

According to Sailusu (2002), ICT has catapulted the world into an information- driven society that relies on ideas and information. The exponential growth in ICT has caused socio-cultural, political, educational, and economic change. ICT has engendered a new approach to work and service delivery, and is a technological development that has come to change work and job expectations. Basically, ICTs are virtually becoming essential in universities such that institutional management almost everywhere now sees it as necessary in the process of teaching and learning. Akinjide (2007) emphasized that the use of ICTs in education has changed what is learnt, how learning takes place, and where. He reemphasized that ICT has introduce new concept of new methods of learning, new methods of teaching and new methods of conducting research and have brought into education facilities for on-line learning, on-line teaching, on-line research and collaboration. Consequently, university libraries have also been affected. Vinitha (2006) averred that libraries that used to be considered the storehouse of knowledge have got a new look in the modern ICT era. Activities carried out manually in libraries with so much pain and strains are now being carried smoothly with the help of ICT with greater effectiveness. The university libraries' traditional roles of information custodian have been reduced to that of being one of many information providers (Cheng, 2001). Odion (2009) explains that ICT use provides librarians and researchers with information and bridges the knowledge gap between the information rich in the developed and developing countries. It therefore follows that to remain relevant in

the current information age, libraries and librarians have to devise means of coping with the introduction of ICT to enhance their performance and research activities in library, he added. They must do this to remain relevant in the face of challenges and changes. Sass (2001) opines that to ensure our relevance to a new generation of users, we need to be where our users are, even if they are not inside our libraries.

Effects of Information Communication Technology on federal University Library Services

Robbins and Coulter (1999) define change as any alterations in people, structure or technology. Change involves moving from the current state of things, the *status quo*, to a new state of things. It is therefore a process of moving from what is known to the unknown (Smith, 2005). Information Communication Technology (ICT) has brought a tremendous change and challenges in libraries globally. In addition to housing books, journals, documents and other physical manifestations of printed work, libraries are now places to go to accomplish the following tasks, access online journals, or databases, fill out interlibrary loan forms to acquire a book or article from another library, obtain and photocopy course materials and acquire training for software applications. The library has become a process in addition to being a place (Fleming, 2003).

Cheng (2001) highlights some of these changes within the university libraries:

- The way we gather information, organize it, disseminate and use information has changed.
- The evolution of the Web has lead to availability of masses of information, electronic journals and databases.
- The way information is being published is evolving rapidly for example, it is threatening current practices.

- New problems have come to the fore for example, the issue of intellectual property rights of resources.

Omekwu and Echezona (2008) also affirmed that information communication technology has broken down the physical barriers and as a result, libraries and the services they provide now have borderless territories. ICT has transformed the nature of libraries. A variety of terms such as hybrid, digital, and virtual and library 2.0, are used to refer to the university library. Rai (2007) described hybrid library as a library containing a mix of print library resources and the growing number of electronic resources such as printed books and magazines, as well as electronic materials such as downloadable audio books, electronic journals e-books, etc. He added that hybrid libraries are the new norm in most university libraries. Reitz (2008) also describes a digital library as a library in which a significant proportion of the resources are available in machine-readable format (as opposed to print form) accessible by means of computers. The digital content may be locally held or accessed remotely via computer networks. Castelli (2006) explained that access point as well as the graphic record is in electronic form where these electronic libraries are connected via various networks, particularly the Internet, this is called virtual library. Lib 2.0 is a loosely defined model for a modernized form of library service that reflects a transition within the library world in the way that services are delivered to users. The focus is on user-centered change and participation in the creation of content and community. The concept of library 2.0 borrows from that of business 2.0 and Web 2.0 and follows some of the same underlying philosophies. Library 2.0 model gives library users a participatory role in the services to best meet their own needs. This can be done electronically, as through the personalization of library web pages, or physically through new service options such as allowing customers to call impromptu book talks or discussion groups. Such collaborative effort requires librarians to develop a more intensive routine of soliciting customers' response and regularly evaluating

and updating services (Casey, 2006). From the explanation, it is clear that most of today's university libraries fall in either or virtual category.

Anyakoha (2005) asserts that ICT has taken librarianship to a dizzy height, as the tools which the library used to serve their patrons have changed with increasing applications of modern technology. Libraries are now facing three major changes, that is, the transition from paper to electronic and multimedia resources; increasing demand for accountability; and a new form of work organization. Ekere and Ekere (2008) argued that the academic audience is no longer captive. Student and scholars can increasingly bypass the library to satisfy their information needs. They posit that the changes are disruptive, as they challenge the traditional roles, purpose and operations of the library.

This spurt of technology in university libraries has also created greater expectations in the minds of their patrons. Cason and Scoyoc (2006) observe that students expect to find most of their information online and information providers catering for their expectations by bringing more scholarly journals online in full text. Tan and Roberson (2002) reported that these assumptions have led to a reluctance to use the physical library materials and to a decrease of visits to library. This phenomenon has fuelled fears of potential future job losses amongst librarians. According to Marcum (2003) new generation of library users have a preference for Web resources rather than visiting library, students would visit library to study rather than use it. Mayo (2004) refers to a scenario where users were asked what they expected from library services, they responded as follows:

All resources must be available in full text and be printable

- The library services should be fast and easily accessible
- Twenty four hours availability of virtual reference services.
- Wish to do all library transactions online

- Web resources that are easy to use and web search engines that meet the information needs (Moyo, 2004).

What is clear is that new generations of library users prefer the convenience of digital access above. This preference for the Internet poses a serious challenge to the university library which has to move from a paradigm of the library as a physical entity to a library where the users do not have to come to physically make use of its services (Marcum, 2003). According to Lavato-Grassman (2003), library foot traffic is declining, but the expectations of libraries and librarians are constantly increasing. With libraries making more moves into this virtual environment, librarians are forced to wear more hats: data miner, researcher, internet and computer expert, multimedia specialist and Webmasters, to name a few. The librarians ICT competency level definitely stand as disintermediation between these needs. But it is so pathetic that most librarians in university libraries in Nigeria still operate in the traditional environment therefore may still lack ICT competency to switch to their new ICT environment. This was affirmed by Akinde (2006) who vividly stated that many libraries in Nigeria still operate in the traditional service pattern where librarians are in charge in main service points: circulations, reference, serials, acquisition, and cataloguing. Nwachukwu (2005) therefore wrote, that in the modern age of information explosion, no library can satisfy clients demand with the manual library process. This he contends, is especially the case of university libraries where speed and versatility in making their bibliographic searches, as such computer skills among librarians should be seen as a valuable prerequisite that would help facilitate library computerization efforts and functions in order to meet the demand of ever-growing clients. So with all the changes in the forms, formats and expressions of information, the processes of access, storage, and dissemination, there is therefore need for librarians as information professionals, to adapt themselves to new roles and skills and competencies in order to cope with ICT. Atseye (2005) taking cognizance of professions,

affirms that the function of all professions is determined by the technologies at their disposal. Librarianship is no exception. If the profession fails to understand and appreciatively utilize the information communication technologies which are available, it has failed in its social function. Therefore, librarians in all university libraries in Nigeria may have a need to blend their traditional competencies to ICT competencies. This will enable them understand basic computer information science convergence; understanding connectivity; knowing the internet; installing, configuring and using a browser; evaluating networks, software and hardware; etc (Fourie and Bothma 2006). Not only this, it will enable the traditionalist among them to merge their earlier professional idea to the ides brought about by information communication technology to attend professional hallmark in ICT age. Ezeani (2004) also reasoned that for the libraries to keep their relevance in this age, librarians must learn to work in new electronic environment in which they found themselves. Their success in Nigeria will depend greatly on retraining of their staff. It must be driven by perceptions, needs and wants of clientele rather than by the capabilities and preferences of providers. Federal university libraries especially in Nigeria must innovate, abandon obsession with print, and reposition themselves on the growth and trend of the electronic information cycle. They must also refashion and gain ICT competencies that will enable them be responsive to these contemporary latest diversities in users' needs and expectations.

Competencies Possessed By Librarians in Federal University Libraries

Aunobi (2004) categorizes various skills and competencies needed by librarians in their traditional setting as Management skills: which includes personnel, finance/ budgeting, public relation and other administrative skills. Collection development skill which also includes identifying new publications, refreshing of library stock through evaluation and weeding, judicious selection of new materials, budgeting and accountability; Public services skills: Good rapport, communication, users profile request analysis, time consciousness,

knowledge of library stock, speed and accuracy; Technical services skills: knowledge of classification scheme, patrons' areas of interest and specialization, filing/ alphabetization and library statistics.

Makara (2002) in the same vein, explained various skills and competencies possessed by librarians within their traditional domain as follows: acquisition of information, technical processing and organization of information, storage of information, dissemination of information and resource management. First, she explained that various skills and competencies are required in the acquisition of information materials. Starting with the selection of appropriate material, one has to be competent in the subject and the level that materials are being selected for. Skills are required in the use of selection tools; evaluation of selected materials; ordering and preparation of various documents such as purchase orders and invoices to facilitate ordering of such materials. Such skills and competencies were developed to operate in a system that mostly deals with print and other physical sources, and as such they may not always be useful when dealing with electronic and other material.

Second is the technical processing and organization of materials. In this category, she explains that one has to possess skills and competencies in cataloguing, classification, indexing, abstracting, and filing of records in order for one to function effectively. Librarians that carry out this function have knowledge of various Classification Schemes for classification of materials in different subjects, knowledge of standards such as the Anglo-American Cataloguing Rules (AACR), International Standard Bibliographical Description (ISBD), and Machine Readable Formats (MARC). They must also have to be competent in interpreting such international standards in order to apply them in their specific work environments.

Third, she explains, is storage of information materials. As there are different types of information materials that require different environments, storage of such materials also need

specific skills and competencies. Most printed materials are shelved or filed on open shelves or filing cabinets without any need of regulating temperature, humidity or amount of light. Ordinary room temperature and humidity are adequate for such materials. However, she explains that materials such as audiovisuals need controlled environments and these need specific skills and competencies in order to make decisions on what appropriate environments would be needed. For example, skills and competencies in conservation and preservation of information materials are required.

Fourth is the dissemination of information. Though not as technical as the other skills, dissemination of information and serving the users also need skills and competencies. Skills in this group range from a thorough understanding of users information needs, an understanding of the subject areas in which information is needed, how the various retrieval tools work, and how to interview users in order to determine their real information needs as opposed to perceived needs that they usually present. Competencies in communication and good human relations are also very essential.

Resource management is also a critical area in information profession that needs skills and competencies. One has to be able to plan budget and control or monitor the progress of activities that are going on. To function properly in this area, one needs to have skills and competencies in human resource issues, financial resource issues, equipment and other resource that one would need in order to carry out specific functions.

Within these traditional domains, activities of the university library and librarians are handling of library resources as physical objects: ordering, receiving, preparation of books for individual identification and use, recording their movements to and from the shelves and across the circulation desk, custody maintenance and repair and other activities. For example, collections development in the traditional setting, involves print using bibliographic sourcing tools: catalogues, publishers/vendors lists, donations and deposits, technical services involves

the use of cataloguing/classification and indexing tools while public services involves the use of print: circulation, reference, CAS, SDI, bibliographic search, print library instruction, management information in form of print statistical report (Anunobi 2010). These activities require specialized knowledge, broad intellectual background, skills in human relations and overall administration ability. They form the core of what is called professional role of librarians because these are what they can do best. Because, they are based on the value of university library therefore, considered necessary for all jobs done in the library and all librarians are expected to demonstrate traditional competencies of carrying out these activities. This therefore shows clear the traditional domains of librarians and libraries. According to Onwubiko (2006), the traditional domain of librarians and libraries has always been associated with printed work and manual context. The imperative of library and information services within this traditional domain had always been on the delivery of library held information resources to the client group. He also indicated that librarians were more or less apologetic, meek, routinized and sapped of motivation in service provisioning. According to Nwachukwu (2005), in the modern age of information explosion, no library can satisfy clients demand with the manual library process. This he contends, is especially the case of university libraries where speed and versatility in making their bibliographic searches, as such computer skills among librarians should be seen as a valuable prerequisite that would help facilitate library computerization efforts and functions in order to meet the demand of ever-growing clients. The application of information and communication technology in libraries had really revolutionized the library system, its activities and its services. It now holds the key to the success of modernizing information services. Not only does ICT introduce new ways of information handling, it also brings about change in the structure of information and its communication. Concepts such as universal bibliography, accessibility to and availability of documents, irrespective of location, highly personalized services matching

user needs with document databases, full text searches, storage and retrieval with speed and accuracy and other formats of information have come to be part of the library collection with their arrivals, new facilities for management and usability have to be put in place and new service direction has to be charted. As Hashim (2004) says there is no denying that this is a new global library environment and it is one in which librarians as information professionals are still finding their way. However, the foundations of the profession, the skills and roles associated with it will enable librarians make a smooth transition from their traditional print environment to ICT driven environment. Librarians in university libraries have built values surrounding their skills to satisfy users in their traditional domain, the dawn of ICT have come to enhance these values. Therefore, traditional library skills mentioned above should be reassessed and their value to information services in the electronic environment applied. For example, the skills of cataloguing and classification can be used to improve the end users experience of networked information retrieval. The creation of meaningful metadata files based on cataloguing principles can help users find needles in the internet haystack. The creation of catalogues including electronic resources can ensure access, authenticity, reliability and validity of networked resources. Librarians in university libraries need to be developed for them to be able to match their traditional skills and competencies with that of new technologies since the survival of libraries in this era depends so much on technological services rendered by its professionals. This is because these technologies challenge the traditional roles, purpose and operations of librarians.

Mukherjee (2004) on his own argued that a traditional attitude is certainly important in placing the priority upon service and upon the needs of users, but there has to be willingness and an ability to change procedures and method to suit new resources. He further explained that traditional skills of accuracy and analysis will become very important in ensuring that library users obtain information, they need but non-technical skill will require

realizing the potential of the new medium. New young professionals who have grown in the electronic era will have a good future but experienced library professionals will also be vital to ensure the most cost-effective and efficient services with manual method information dissemination. The foundation of librarianship, which includes skills such as cataloguing and user education, are, as explained above, will still be as relevant in an electronic age as they are, in a print based one and will continue to provide a solid base of skills. Most libraries will continue to combine traditional and digital resources for the foreseeable future, but library operations are already largely electronically based, both on the front line and in office and other work areas, with e-mail, local intranets and shared file stores underpinning much of the daily communication between staff. Librarians in university libraries need to be developed for them to be able to match their traditional skills and competencies with that of new technologies since the survival of libraries in this era depends so much on technological services rendered by its professionals. This is because these technologies challenge the traditional roles, purpose and operations of librarians.

Information Communication Technology Competencies needed by Librarians in Federal University Libraries

Technological trends have taken a shift from traditional approach to electronic approach. University libraries have always served as access points for information in the community they serve. Services have evolved from the days of closed stacks, through shelf browsing and card catalogues, punch cards, to OPACS, from the concept of close access, to the concept of open access and institutional repositories. This historic migration has tried to stratify the needs of library users, including ease of access, interaction, richness, low cost (Cisse, 2004). Byadgi (2004), asserts that the need for skills and competencies is vital and the new electronic environment demands that the proliferation of information has to be controlled, packaged and repackaged to fulfill the needs of usersø community. Based on this

Johry (2004) therefore suggests that librarians must begin acquiring those skills that will allow libraries to continue to meet the information needs of their end-users. This is also based on the fact that some groups of users lack the necessary IT skills to obtain quality information (Stubbings and McNab, 2001) and information professionals will be called upon to act as both educators and intermediaries (Sharp, 2001). This is because instructing users on how to find information independently has always been one of the hallmarks of university library services, and this should be given priority in a digital environment. Fabunmi (2004) also affirmed that libraries in this age need to have librarians competent enough to train users in the use of audio-visual equipments and training in the full exploitation of the resources of the library and outside the library through the use of internet-e-library. In response to this, Choi and Rasmussen (2006) opines that librarians need skills and knowledge in technology such as digital architecture and software, technical and quality standards, web markup languages, database development, management systems and web design skills. Meredith (2006), informed that librarians must firstly, be able to keep with new ideas in technologies and librarianship. Information professionals should have knowledge of information resources, access, technology, management and ability to use this knowledge as a basis for providing the highest quality of information. In this changed dimension, library and information professionals will have to assume the role of analyzers, synthesizers and interpreters of knowledge, rather than be content with acquiring, organizing and providing information when asked for. With all the changes in the forms, formats and expressions of information, the processes of access, storage, transmission and formation centers reproduction has witnessed need to adapt themselves to new roles and skills in order to cope with the impending changes. Latham (2000) argues that every librarian should be familiar with all components of an office suite: word processing, spreadsheets, databases, and programmes. He also added that librarians should be able to choose the appropriate application for the

anticipated result, that is, a database for lists, repeating the same type of information, spreadsheet for tracking numerical data, word processing for forms, for instance. Librarians for that matter should be able to make use of the extended capabilities of an application to create charts, import graphics and attach files and so forth. They should know what is attached to the CPU, and how it is attached. They should be able to perform basic troubleshooting, functions, power resources, monitor, adjustments, reboots, printer responds and how to dictate error messages. In view of this, Ugwuanyi (2009) suggests that Professional librarians required being skilled in using networking, and the internet to fulfill their professional obligations. He stressed that they are required to know various computer operations such as turning computer on, opening a folder, copying a file from one disk to another, scanning etc., And secondly, the use of application software such as creating a new word processors document, modifying an existing word processing document, printing out a document, operating in a network environment (LAN and WAN).Thirdly, the use of internet skills such as using the World Wide Web (WWW), searching an e-mail message, using the Word to find specific information, taking part in online discussion or chatting (Video Conferencing) and sending attachment with an e-mail message using a WWW search engine e.g. Yahoo, Google, MSN etc. He also added that they should be able to acquire the skill of using key words or phrases to search for information on the WWW, using more advanced keywords than keywords or phrases. In the age of 21st century librarians must be aware of emerging technologies.

Lovato-Gassman (2003) asserts that librarians require proficiency in web navigation, creating web pages and should be able to communicate and learn in a completely virtual environment. He maintains further that the present librarians should be able to train employees and patrons on how to access the information they need to ensure that their objectives and that of the organization is achieved. Omekwu (2003), advancing the need for

developing new professional skills affirmed, that the 21st century library is predicated on the evolving electronic environment. He went further to opine that skills are needed for information management in order to meet the demands of the new information environment-migrating to web. He concluded that professionals with appropriate skills will have a competitive edge over others lacking in skills required to operate in the emerging practice. Aside from this, information has to be managed with time by librarians. Time management in this electronic age by librarians refers to a range of skills, tools, and techniques used to manage time when accomplishing specific tasks, project and goals. This set encompasses a wide scope of activities, and these include planning, allocating, setting goals, delegation, analysis of time spent, monitoring, organizing, scheduling, and prioritizing. Initially time management referred to just business or work activities, but eventually the term broadened to include personal activities also. The fourth law of librarianship is save the time of users. This has also become important so that librarians must develop the time management skills. Because to provide better or effective information services while on the web to our users on time requires time. But it will be useless if we cannot provide their desired information on time. Chu (2003) also contends that skills acquired by librarians are used to help perform properly their role as a filter-interposed between the different information sources and the varied scope of readers. Specifically, he affirmed that librarians need skills that should be used in the present electronic environment to create access point and link readers to them at the time of their needs. Apart from quality and standards in role performance, these competencies bestow leadership role upon them as they set a model of high quality performance characterized by integrity. It is clear that persons cannot give what they do not have. The above scenario, demands librarians skill transformation and attitudinal transformation to catch up with their new environment (Shillio, 2008). Supporting this view, Nofsinger (2003) stressed that librarians with strong technological knowledge are essential in

creating 21st century library collections and services as this knowledge will help them in creating full text article, data bases electronic books, char-based interactive technologies and videoconferencing. Onwubiko (2007) affirmed the importance of acquisition of these skills as providing practical standards with which to measure and evaluate current and potential employees. He also added that it is desirable to have a list of competencies in academic libraries and librarians. Special Library Association (2003) listed the following as competencies for special librarians.

Professional Competencies

1. Expert knowledge of the content of information resources, the ability to critically evaluate and filter them.
2. Should have specialized subject knowledge appropriate to the business of the organization or clients.
3. Competencies of access to information needs and designs, markets value to meet identified needs.
4. Competencies to provide excellent instructions and support for library and information services to users.
5. Use appropriate information technology to acquire, organize and disseminate information.
6. Evaluate the out-come of information management problems
7. Continually improve information services in response to changing needs.

Personal Competencies:

These represents a set of skills and attitudes and values that enable special librarians to work efficiently, be good communicators: focus on counting learning throughout their careers; demonstrate the value added nature of their contributions: survive in the new world

of work (SLA 2003). Further, Special Library Association summarized the personal competencies needed by special librarians as follows:

- Committed to serve excellence.
- Seek out challenges and see new opportunities both inside and outside the library.
- Competencies to look for partnerships and alliance.
- Create an environment of mutual respect and trust.
- Effective communication skills.
- Work well with others in a team.
- Recognize the value of professional networking and solidarity.

Waila (2007) also states that every information professional should be able to

- Search out challenges and capitalize on new opportunities.
- Communicate effectively.
- Present ideas clearly, negotiate confidently and persuasively.
- Build an environment of mutual respect.
- Employ a team approach; recognize the balance of collaborating, leading and following.
- Plans, priorities and focus on career planning.
- Renew flexibility and positive tie of continuing change.

Motivate him and others. He also states that it is expected that information professionals have e-competencies along with managerial skills, which are essential in the present context. These competencies are also listed as follows:

- a. Basic knowledge of the fundamental terms and functionalities of computer.
- b. Competency with operating systems.
- c. Competency with Web browsers common Web file formats.

- d. Competency with e-mail
- e. Competency with web URLs.
- f. Competency with search engines.
- g. Competency with search database software
- h. Internet teaching training.
- i. Business and competitive intelligence
- j. Market research.
- k. Analysis and writing.
- l. Internet development and management.
- m. Consulting/advising about resource and techniques.

These competencies form the basis for growth in the information age although the core of the profession remains the same, the methods and tools for information delivery and scope of enterprise continue to grow and change drastically. It has become increasingly important that librarians keep up with technology and certain basic skills. In the current scenario librarians must have the knowledge of HTML, Networking, Scripting languages, the ability to deal with the back-end of the OPAC, ability to translate library services into the online medium, ability to troubleshoot basic computer and printer problems, or just a good healthy knowledge of emerging technologies. Librarians need to do so much online these days, way beyond basic catalog and database searching. They need to be able to use search engines and use them very well. They need to be able to find quality online resources. They need to help patrons set up e-mail and teach basic internet skills. They need to be able to troubleshoot problems users have accessing online library information resources, at least to the extent where they can figure out if the problem is on the library's side or the user's side. Not only this, they must have the ability to troubleshoot new technologies because it is just a part of good user service in libraries especially in this technological age. It has been critically

observed that most of the time when working in library our users do face problems using the scanner, fix the printer, and troubleshoot any other technology problems they may encounter. As we get new computers, printers, scanners, etc. then we will need to learn how to troubleshoot them. Many librarians cannot troubleshoot because they lack enough computer knowledge to figure out technological problems with users during user service. This is really a bad user service. Librarians should be able to play with technologies in library, to learn what problems commonly come up, and fix them if necessary, because it is often their responsibility to fix them.

According to Foster (2003) a librarian with the information technology skills, the traditional library skills with human relations and communication skills will ever continue to excel in the provision of quality user services. Explaining further, he said the information technology skills will enable the librarians interact with the computer to make the required search using the search engines to locating the user information need while public relation and communication skills enable the librarian to interact perfectly with users in order to determine their actual information needs. While maintaining their client and content-centered approach, practitioners increasingly require advanced knowledge of information technology to realize their full potentials. It then becomes necessary for university libraries to continually train and educate their human resources in line with these technologies to enable them gain prodigious arsenal of competencies that will enable them still maintain their normal role as information professionals even in this era of information communication technology. Collection development librarian should be able to use print and CD-ROMS, offline databases, other storage materials: using bibliographic sourcing tools as in the traditional mode. Technical service librarian need to be competent in the use of ICT hardware and software namely networks, server hardware, network operating systems, web server, relational databases, web applications, online publishing, electronic pointing and hyper-

linking, web portals and repositories, in some cases, a minimal use of traditional technical tools for extracting metadata. The public service librarian need to be competent in the online access (bibliographic, abstract and full text), online reservation, borrowing and return, collaborative services and interactive social networking services using wikis, blogs, facebook, flixter, twitters myspace, youtube, e-reference services and e-instructions.

According to Dahl, Bannerjee and Spalti (2006), for information professional to fit into the digital environment and avoid being left out by the band wagon, he should be flexible about new developments in technology and should be willing to take risks. There is need to have a public services perspective and team approach as well as the ability to lead change and work independently. The therefore outlined expected characteristics of LIS professionals in the digital environment. These include the ability to:

- ❖ Engage in sustained reasoning;
- ❖ Manage complexity;
- ❖ Test a solution;
- ❖ Organize and navigate information structures and evaluate information;
- ❖ Collaborative;
- ❖ Communicate to other audience; Expect the unexpected;
- ❖ Anticipate changing technologies; and
- ❖ Think about information technology abstractly.

Methods of Acquiring ICT Competencies by librarians in Federal University Libraries.

The fast changes occurring in the world today in every facet of development shows that only learning organizations would be able to effectively cope with the accompanying challenges. It is widely acknowledged that university libraries world is already changing

faster than it has ever done before and that the pace of change will continue to accelerate, with advances in information communication technology being the key driver. Needs of user community keep on changing and expanding and in turn affects the objectives and services of the university libraries. Changes in the operating environment are being reflected in changes to librarians' roles, which in turn require the profession rethink of the skills, knowledge, understanding and motivation needed to design, develop and deliver a high quality professional service Corrl (2004). Librarians in federal university libraries in Nigeria in order to be professionally adaptive, as well as job organization fit in the ICT environment, should engage in continual learning, either formal or informal as an on-going process. Many authors have written on how librarians in the university libraries can acquire ICT competencies authors like Lavato-Grassman (2003), Ashcoft (2004), and Ogundipe (2005). According to Lavato-Grassman (2003), librarians can acquire needed ICT competencies through part-time employment which translates into experiences, internships and additional course work. This he explained will supplement the library school courses. Ogundipe (2005) proposed incorporating the course in the master of library science programme that will run for a whole session with emphasis on practical. He states that this can be actualized if teachers themselves are skilled and experienced practitioners who have been using the technology repeatedly or normally.

Nigerian university librarians ought to acquire additional skills techniques and methods in order to become more competent on a job as technology savvy professionals since technology now stands as tool which supplies the specific skills needed by them in this era of technological changes. Such skills will enable them get reoriented towards the completion of specific tasks or standard in their job areas without supervision. This will convey a professional image to their users as the right ICT attitudes that will enable them recognize when users are satisfied with services rendered to them. This is exactly what training will do,

since it has been described by (Ashcroft, 2004) as a systematic modification of behavior through learning which occurs as a result of education, instruction development and job descriptions. Training is the only key that can enhance and empower librarians in this era of technological changes challenges, allowing them to perform efficiently with the combination of their traditional competency and technological competency while discharging their services. Training is job-oriented, improves job performance and promotes management efficiency. It bridges the gap between what the employee has and what the job demands (Khanka, 2008).

Yesufu (2000) affirms that training of personnel enhances productivity. He also added that productivity which is enhanced by training, is not only limited to the establishment, the librarians and other staff of the library can also become productive. In order to maximize the productivity and efficiency of an organization of which the library is no exception every executive, library manager and supervisors has the responsibility and binding duty to ensure that the development of men and women who have requisite knowledge and expertise to practice even in this era of information communication technology. Obviously the role that training can play in human resource development especially in libraries and information systems is inestimable and unquantifiable. It is a truism, of course, that training of staff enhances productivity. The library system in Nigeria cannot afford to allow its staff to degenerate in the acquisition of knowledge and the knowledge already acquired cannot be allowed to diminish because society cannot afford to jettison the roles of libraries and librarians in the socio-cultural and educational development of a nation Chiware (2007). In the words of Griffiths (1995), globalization, applied to librarianship, also implies that library resources are now exposed to wider access, and origination. Onah (2003) opines that employees who have not received adequate training before being assigned with responsibilities lack the necessary confidence with which to carry out job. He enjoins that an

employee should be helped to grow into responsibility by systematic training and development for it is then that he will feel confident to carry out the responsibility of the job. Also such a person knows what is expected of him on the job and because he believes he can do it, his enthusiasm on the job increases. It is a person in that position who can think and originate ideas as to how best to carry out the job. Twidale and Nicholas (2006) argued that possessing training in a technology is insufficient because technology changes so rapidly. New versions of applications contain new functionalities, new interface and new possibilities or how they might be used. Consequently, they advised that practicing librarians need to be able to learn about the latest versions, applications and new ways of combining applications quickly and may be without formal training. Being a fact, the truth remains that practicing librarians must receive training that can first of all give them a rudimentary background on how to function in a technological shift environment and then continually improve through various continual training methods. They need the rudimentary knowledge, technical skill, social skill, techniques, attitudes, and experience to enable them adapt in their environment.

Ashcroft and Chris (2004) on their own state that the first should be an understanding of the current state and prospects of digital libraries in African universities and familiarization with the major projects in other types of institutions, secondly the training should be on the skills to handle resources technology context for digital libraries, tools and rules (protocols) of interoperability. Lastly, there should be an understanding of the enhanced features offered by the digitized content and digital resources discovery tools. And about collecting, organizing and presenting information about digital resources and creating annotated Web based access tools. The absence of training in these global times, spells doom for any institution. Technological shifts, explosion of knowledge and information, and changes in academic libraries in recent times in Nigeria creates the necessity for traditionally possessed competencies of librarians to be enhanced via training programmes. Training

program according to Stoner (2007) is a process designed to maintain or improve current job performance. Ifidon (1985) enumerated the following as types of training programmes

Simple orientation programmes

- Seminars/conferences
- Participatory management
- Formal professional education
- Short courses
- Organized visit.

On the other hand, Onah (2003) articulates other kinds of training programmes. Some are formal and some informal. However; he opines that that staff training programmes should be designed to help organizations accomplish their goals and objectives. He enumerates the various types of staff training programmes staff can undergo as follows:-

Orientation programmes: After staff have been appointed or employed they are introduced to the organization and their jobs. Orientation according to him is usually the first kind of training employees receive. Under the programme the staff is introduced to a new or changed working environment in form of information procedures. This type of training provides the staff background knowledge of the organization, its structure, policies operations, rules and regulations. Be that as it may, orientation programmes can as well be used as a channel of introducing the use of new technologies in academic libraries to staff.

On- the- job Training: This is one where the employees are shown how to perform the job and allowed to do it under supervision. It is the commonest type of staff development programmes and involves the staff being told what to do, how to do it, and asked to perform the job; the steps are repeated where an error is made until the employee learns the correct behavior. On-the-job training allows the learner to practice with the actual tools in the

environment of the job. It should be used continuously in a very well-run organization. Some examples of on-the-job training programmes are coaching, job rotation, training positions, and planned work activities.

Induction programmes: These, usually of a few days duration, should be designed to familiarize new entrants with the overall goals and aspirations of the organization and introduce them to the organization and its various components and authorities. It also gives them firm and effective idea of what their roles are expected to be in the system. Which aspects of these subjects of induction would be emphasized and the degree to which they may be emphasized will depend on the category and role of staff. Through induction, the employee is made to appreciate both the internal and external image of the organization. He may then hope to settle down properly into his place with minimum delay and problems.

In-service training programmes: This is the type of training programme given to a staff on his area of specialization. The trainee learns and improves on specific job area. Academic libraries should check out technological changes in specific job areas and then send their staff for in-service training. In-service trainings are not merely designed to improve academic qualification but to accord with the staff development need of the system, and must not only be relevant to the functions of the organization and offices but necessary for the enhancement of the staff members performance on the job. University libraries need to work out these schemes carefully for their staff, taking cognizance of technological shifts that have occurred in libraries.

Also Ogundope (2005) ascertained that information communication technology skill can be acquired by incorporating the course in the master of library science programme that will run for a whole session with emphasis on practical. Boff and Singer (2003) stated that acquisition of competencies by librarians could be better done through continuing education. This, they said includes several approaches such as attending professional conferences and

workshops or taking additional classes. It also includes reading professional journals, magazines, books and subscribing to one or more e-mail discussion list that are so valuable for staying current in the profession. Chiwere (2007) on his own, recommended On-the-job training (OJT), Vestibule training, classroom training, case study, self-study, Electronic teaching media, simulations, T- group, Schools and outside seminars, Consultants and special training but he strongly recommended study visits, in-service training, and industrial attachment. The exposure, he says, will further prepare librarians to face challenges in the automated systems in which they find themselves working. IFLA (2000) had it that training of library staff may be offered in pre-professionals education, in-service training or as continuing education. More often, they said, it is given in short courses and workshops, or at professional meeting-staff meeting is also another method of free training of workers where the workers share opinions and views that will enhance their individual development. Short courses and workshops are also methods seen useful IFLA, where the worker is trained off-the-job. In many cases, they are advocating the promotion of literacy amongst the staff and by all means suppressing or even erasing illiteracy amongst the staff of the library no matter the rank or level.

Onah (2003) enumerates the following as training programmes best used in developing staff: lectures, conferences, audiovisual aids, simulators and training aids, human relations laboratory training, computer assisted training instructions. He further maintains that conference provides opportunity for participant to pool ideas, to discuss ideas and facts, to test assumptions, and to draw inferences and conclusions. He also postulates that a more recent training programme known as programmed books or filmstrips differs from conventional forms of training in which the trainer guides the learning process, because the material to be learnt is presented in a way which individual learns control. He says that learning in programmed instruction proceeds in bits to which the individual participant

responds with correct answers or solution, moving ahead only as fast as each step or bit is learnt and understood.

Problems Hindering ICT Competency Acquisition by Librarians in Federal University Libraries.

In the quest of ICT competency acquisition by librarians in university libraries, myriads of problems are encountered. Various research works show that funding has been quite a problem facing libraries. This is because execution of every need depends on the availability of funds. This view is supported by Uzoigwe (2005) who identified funding as the first problem. It occupies a strategic and usually a decisive position (Edoka, 2001). Adeboye (2002) affirms that funding is the most serious problem facing libraries in Nigeria. With this situation, he says libraries do not meet up with their naturally assigned traditional roles not to talk of using the little fund in their possession in organizing ICT training for staff. Ania (2005) in his work also reveals that the level of funding of libraries and their ICT budgets in Nigeria is comparatively low. He further revealed that sixty percent of the libraries surveyed had no annual ICT budget. This study corroborates that of Oketunji (2002) which also revealed that larger percentage of the libraries does not have regular budgetary provision: this problem he said is not peculiar to Nigeria alone or to Africa as a sub region but it is a global phenomenon as it is the bane of ICT adaptation in libraries. Anckar and Walden (2001) also identified lack of financial resources as one of the most important barriers inhibiting organizations from fully capitalizing on ICT. Bourgouim (2002) also views available financial resources as one of the determinants of ICT implementation. High cost of equipment and resources he adjoins limits organizations ability to the use of ICT.

It must be realized that most libraries in the past had meager budget and their librarians have operated under the traditional manual environment with traditional roles. But with the introduction of ICT, library budget will include provisions for servers, Internet

access, and wireless campus-wide network, structured cabling systems design of campus, intranet design and web site design to interface with the outside world. According to Amkpa (2009) ICT is a capital-intensive venture, both in the acquisition, installation, maintenance, training and sustainability. University library budgets are very lean and dwindling, this affects the libraries and its operations. With this problem at stake, not all Nigerian university libraries will venture into formal training of their librarians for ICT competency acquisition as this will demand some level of ICT equipment on ground.

Inadequate ICT facilities:

Poor ICT infrastructural facilities in Nigerian federal universities constitute a major problem to librarians ICT skill/competency acquisition. The non availability of computers, computer network, computer software, satellite resources printers, fax machines, scanners, telecommunication facilities, electronic photocopiers telegraph, lap tops and satellite equipment to provide fast broadband Internet connections for browsing and other ICT facilities, characterized most federal university libraries in Nigeria. Although it varies from one library to the other, it stands as a strong hindrance to skill/competency acquisition by librarians. A poor ICT endowed library will be a drag on training of its librarians in ICT competency acquisition. Meanwhile, provision of these facilities is not an easy job because of financial constraints which has been perpetually witnessed by federal university libraries in Nigeria but continual training of librarians necessitates this. Still on the issue of facilities, Gbaja (2008) identified lack of adequate bandwidth size and internet connectivity as another problem associated with ICT skill and competency acquisition by librarians in most Nigerian university libraries. Speaking on this view, Jensen (2005), states that there are many external systematic factors such as electricity, transport networks, import duties etc, which impact on internet service delivery on the African continent. In some institutions access is limited, not only by the number of internet service points but also by the time that access is available or

permitted. Yet for ICT training, access to the internet (the world's stores of knowledge) is a necessity. Inadequate bandwidth and connectivity, hampers ICT competency acquisition by librarians in the University libraries in Nigeria wherever this exists, it hinders librarians in gaining continual training that will improve their ICT competency level overtime.

Constant Change in the ICT Industry: ICT encompass a wide range of rapidly evolving technologies. New technologies are being introduced and improvements are being made to existing technologies almost on a daily basis, and therefore, the main challenge for university libraries is how to keep on training their staff to catch up with these daily changes in technologies. According to Minishi-Majanja (2007) there are not enough people qualifying or attaining ICT specialist skills at the rate which the technologies are adopted. Esterhuysen (2002) argued that the most damaging consequence of the volatile nature of ICT, however is that users, having invested time and money and having struggled to establish connectivity and make good use of it, are caught up in an internal game of 'Catch up'. He points out how an organization reacts when its efforts to address basic problems elicit a response along the lines of why don't you upgrade to windows 2000 and buy a faster modem. For example, Mukherjee (2004) explained that the office world has gone through transition of digital storage devices from 8-inch floppy disk to 5.25-inch floppies to 3-inch diskettes, to CD-ROMs, to DVDs but these storage devices become obsolete very quickly. It is very difficult to find a drive for one of these storage devices that will work with contemporary computer. So the problems during training programmes become which technology to be thought at a particular time. Aside this problem, technologies breaks down for months in the year thereby depreciating for nothing due to lack of spare-parts to repair the break down (Mbanefo 2004). This situation creates a very big discouragement in the hearts of some traditional library administrators who have no flare for ICT who then use this as an excuse for not making

provision for ICT facilities in their library much more being keen to skill/competency acquisition of their librarians.

Lack of ICT Technical Background among University Library Administrators, Amkpa

(2009) stated that there is a low level of ICT among information professionals in the country; most of them have little or no skills to work with computers and above browsing or surfing the Internet to access and retrieve information he pointedly noted that it is important that the duty of the traditional librarian greatly varies with his expected role in this age of ICT. With an administrator's skill and training in handling and management of modern equipment for information storage retrieval and dissemination, it is expected that he or she carries out minor repairs and maintenances without necessarily referring to information technology or computer experts. Gbaje (2007) asserts that developing, installing, configuring web application in network environment requires understanding of how the chosen network operating system privileges among users. This then means that without an administrator being highly equipped with the knowledge of ICT, he cannot really see the need of organizing training programmes for his staff in order to impart necessary skills that go with information communication technology.

Negative Attitude of Administrators: who feels staff should train themselves? Staff really, can obtain training for themselves, but from administrative point of view, no staff can directly map out all areas which go to prepare him as an ICT expert. This is because, there are so many ideologies that go with ICT, some are needful to librarians, and some are quite irrelevant. It is only an administrator who can map out areas that go with the general objectives of the academic library which can also be useful when staff receive official training along these technologies. Besides, individuals can have a general knowledge of ICT and still lack the knowledge of how to use them in specified job areas. On the contrary, Womboh and Abba (2008), posit that this is a very wrong conception. They argued that

information professional should fend for themselves if they want to join the ICT train. Otherwise the train will leave them behind and obviously, it will put them out of their job. Be that as it may, insufficient administrative commitment still stands as a big hindrance to skill acquisition. Under the weight of great control of hierarchy, executive librarians have to defend their leadership quality. This clearly is proof of the fact that administrators of academic libraries have to be innovators who can implement ICT training programmes to their staff while assuming relative stability during the period of changing priorities and shifts in technologies.

Low ICT Technical Know-How among Most Library Administrators

This is a danger that has continued to exist in most university libraries in Nigeria and it makes it difficult for them to understand the basic training that is supposed to be organized for staff at different operational levels. Depending on the size or level of sophistication of the available ICT infrastructure, a library may require database administrators, system analysts, network administrators, software engineers, web master with expert knowledge about the web terrain, troubleshooters, software specialist, information retrieval system designers, information Environmentalist, network administrator, software engineers, system designer and many others. For librarians to be trained on these areas, the administrator must have had background knowledge of ICT before he can be able to make a choice of which of these training to be given to staff. Dahal et al, (2006), reported that developing, installing and configuring web applications in a network environment requires an understanding of how the chosen network operating system handles the different levels of access privileges among users. Unfortunately, Nigerian university libraries have an acute shortage of digital system librarians and experienced web librarians or administrators who can think of right training programmes to be organized for their staff. Shibanada (2001) contends that the real challenge for university libraries in Africa is to hire administrators who have the skills and

competencies to develop meaningful programs which support the use of information and communication technology.

Lack of Partnership in ICTs Assisted Networking and Corporative Projects: Partnership according to Amkpa (2009) is the coming together of two or more persons or group of persons with a common interest and with the mutual aim of benefiting from each other. Mohamed (2007) described it as a mutual relationship, alliance, cooperation, collaboration or agreement between two or among several interested partners, parties, individuals, groups, organizations, each with its predetermined areas of interest, competence, expertise and specialization aimed at integrating them together to achieve collective or common goals and aspirations. Most university libraries in Nigeria lack this partnership even though they lack the resources in organizing training programmes for their staff.

Erratic State of Power Generation: This is a major problem encountered during the ICT training of any type in Nigeria. Nnadozie (2007) reveals that power supply is unreliable and the alternative is expensive. Nwidum (2006) reported that electric power supply is much below meaningful level despite the huge investment the present government claims to have made to redress the problem of incessant power outage. Yet ICT depends on electric power to work. Poor state of public power supply reduces the accessibility of trainers to electronics information resources during ICT training programmes. Most internet connections or access computer networks are often received using generators which significantly increase the cost of internet access. ICT training programme is often achieved effectively with a proxy server on for 24hrs to allow constant accessibility of some websites and other internet resources that can be introduced to trainers. But this is most impossible during training programmes hours of any kind in Nigeria because of erratic power supply. Mac Arthur Foundation Report (2005) reveals that libraries need reliable power to provide access to electronic resources. Lack of reliable electric power supply is a problem for entire libraries in Nigeria during

training. Literatures are available to problems hindering the organization of effective training programmes for staff in academic libraries in Nigeria. These problems though enormous have to be seriously addressed by administrators of university in libraries in Nigeria.

Strategies for improving these Problems in Federal University libraries.

Information communication technology (ICT) has come to stay in university libraries changing the way information is acquired, organized, and preserved and disseminated. Among problems faced by their librarians are things to do with ICT in order to gain competencies to cope with new information demands of users professionally. How can libraries curb these problems? The first solution is the organization of continuous training of librarians in ICT application. But can this be achieved when libraries and their authorities are faced with lean funds? Strictly speaking, libraries are not usually generously funded in this part of the world and many are facing severe budget problems. Literature shows that not much importance is attributed to the library as one of the important organs in national development. University libraries and their librarians will find it extremely difficult to perform their roles as information professionals in the new ICT environment to their community without adequate funding. The funding of libraries in Nigeria from inception has not been consistent and robust enough. Library, worth its salt is very capital intensive, as technologies become progressively renewed worldwide.

In line with, Amkpa (2008) advised that libraries and their authorities should press for more fund from government and also look inwards for alternative sources of funds and from other stakeholders for effective implementation and continued training of staff. Administrators should seek for external funding in form of donations and grants from donor agencies and nongovernmental outfit. According to Chiware (2007), UNESCO and FAO many other donors have actively supported development of librarians for implementing digital library projects especially in the implementation of Greenstone Digital Library

software (for building and distributing digital library collection), D-Space (a digital repository system that captures, stores, and indexes, preserves and distributes digital research materials), Eprints, Fedora, dLbra and many other packages. He went further to explain that Association of African Universities has provided funding and training for DATAD project of INASP has provided training programs on how to access electronic resources to many university library personnel in Africa and other developing countries. Aside from this, Uzoigwe (2004) averred that the prime of it all is as we bask in the euphoria of the 21st century, it falls on the Federal Government and Nigerian population to record priorities. He advised that concrete plans and steps be taken to make internet services available to all libraries. This means that these libraries must be automated and kept on-line (networked). This is the only way training programmes on ICT can be made easy for university librarians. With this priority shift, other problems enumerated will become non-issues.

Another strategy for the university libraries and their librarians to solve the problem of ICT competency acquisition is by ensuring that ICT facilities are adequately provided in all federal universities in Nigeria. Stoffle, Moris and Trejo (2003) on their own view the possibility of this by the creation of an enabling environment from organizational level. They argued that for librarians to be able to acquire needed ICT skills and competencies there must be limitless innovation opportunities and flexible supportive ICT facilities. An adequate ICT facility with a sufficient number of networked and internet-connected work stations is essential if librarians are to gain ICT competencies through training. Online training (internet training) or off-line training requires computer terminals and appropriate peripherals, but information and communication technology facilities in Nigeria are poorly developed because of shrinking budgets. The issue is that if ICT facilities are provided to university libraries, librarians on their own can receive free internet training on the internet which will indirectly reduce funding for their training. Still on the issue of ICT facility, from literature, it

has been observed that even when ICT facilities like the internet is being provided, bandwidth speed reliability still stands as a challenge to librarians during training programmes. Jensen (2006) espoused that countries can strategically improve ICT infrastructure policies that can minimize bandwidth problems, for instance, by obtaining access to national and international backbones at cost, rather than at the tariff charged at monopoly prices by the incumbent operators. University libraries need to lobby to gain greater access to Internet facilities for a meaningful training of their librarians for ICT competency acquisition. This can be improved by urging their parent institutions to draw clear ICT policy that will include the provision of adequate quantity and quality ICT infrastructures in their various libraries.

On the issue of catching up with technological changes, librarians need to monitor technology and their changes, understand information preference of their users, their actual ICT needs, understand their ICT information seeking behavior, their ICT research needs, and be more proactive in gaining continual training in order to catch-up with new technologies in such areas. It is also necessary for every administrator of university library firstly, to go for training to be conversant with information communication technology since they are always at the helm of affairs. With this knowledge, they will be able to make a choice of training programmes necessary to be organized for librarians because librarians may be required to be trained as database administrators, systems analyst, network administrators, software engineers, webmasters with conversant ideas about the web terrain, troubleshooters, software specialist, information retrieval system designers, information environmentalist, network administrators, software engineers, system designer and many others. They should also set aside, part of their annual budget to support or carry out training inside and outside their libraries. Such training programmes should also be a continuous activity of every library because technological knowledge is ever growing and the techniques of information access

and retrieval are ever changing. Hence it is quite essential to update librarians every now and then. They must get trained themselves and train others to equip their library with updated staff. Curry and Watson (2006) on their own wrote that a frame-work should be drawn by librarians to involve, the establishment of staff training policy, the appointment of senior member of staff as staff development officer to oversee and coordinate staff training activities, the commitment of specific funding for staff training activities, and the use of appraisal or staff reviews to give staff opportunity to express and explore their individual training need and provide the training organizers within the library and overview of these needs. They also advised that training should be made accessible to all staff that needs it and facilities should also be made available for the course. Really, formulation of policy statement is necessary. Such policy will give details of how staff training programmes should be carried out and it will also erode the negative attitude of library administrators who never have flare for ICT competencies acquisition by their librarians. Kahan (2004) recalled that technology has provided the tools to make instruction more effective and more interesting on the other hand, the continuing and rapid introduction of new technologies into the library itself places further demands on those staff members directly involved in instructional programmes. Networking and computer assisted instructional courses have transformed the classroom from a mere physical environment to a virtual learning environment, self- paced instruction software and Internet chat forum or list servers are now used to teach basic information. Training can be made possible on the internet. Librarians through this means can receive free training. The electronic performance support systems (EPSS) serve as job aids. They are set of computerized tools and displays that automate training; documentation, and phone support that are faster, cheaper and more effective than the traditional method of training. Dahal (2006) asserts that developing, installing and configuring web applications in a network environment requires an understanding privileges among users. Unfortunately,

Nigerian university libraries have acute shortage of digital system librarians and experienced web librarians or administrators who can administer right training to their staff. Such librarians need training to enable them control technology process (to control the design of operational layouts, machine configurations and methods of work), control work (the design of jobs and issues such as work rate, quality library services to clientele), control the behavior of librarians in the work place, control the cost of operations through a number of technologically based devices (They control the design of the work itself through decisions relating to the type of technology adopted and the pace of work through the speed of machines and sequencing of activities), control technological agenda within the library as they decide on technology to be used and its preferred options for future development of the library, control skill and competencies that exist through job design and nature of technology, and control of resistance to the use of technology by traditional librarians who sees technology as an end in itself rather than a means to an end. This training also helps in increasing administrator's confidence level.

In the case of libraries that lack resources to train their librarians, getting involved in library consortium can help solve the problem of training their librarians in order to get them balance in their technological changing world. Library consortium is a group of two or more libraries that have agreed to cooperate with each other in order to fulfill certain similar needs, usually resource sharing. Initially libraries got involved in consortia in order to reduce costs particularly with regard to the acquisition of ICT competency acquisition. Consortia provides a platform for libraries to cooperate in terms of services University libraries in Nigeria which are incapacitated of training their staff can as well search for libraries that have advanced in ICT to gain training from them either free or at a reduced cost.

Power supply, actually has been a big challenge during training programme sections with technologies. The strong back-ups will be of great relief to this problem. Chukwusa

(2008) in his work, "the case for solar back-up system in Nigerian academic libraries" suggests that government, as a matter of urgency, should make budgetary provision for installation of solar back-up system for libraries and research libraries. He further explains that finance is the life-wire of any organization and the library is no exception. Solar energy is the basic fuel for all earthly processes. The energy is renewable, freely available and its applications are environmental friendly. University libraries should turn to this as their alternative sources of energy.

Review of Empirical Study

This sub-section reviews studies as it relates to university libraries and librarians. Nicolas and Fanton (1997) conducted a survey on the internet and the changing information environment in Italian libraries. The aim of the study was to identify the challenges and how the librarians will confront these challenges. The study also examines the implication to the users. The study identified that there is a shift from improvement to overload, the displacement of traditional information services, a change in work pattern, a change in system requirement drawing of new information age. They recommended that for librarians to be able to surmount these challenges, they must rise up to become literate and acquire skills in information and communication technology. This work though related was carried out in a developed environment.

A similar study was carried out by Ezeani (2005), titled re-engineering reference services to meet ICT demands of postgraduate students: the case study of Nnamdi Azikiwe library, UNN, Nsukka. The study was an investigation aimed at ascertaining the effectiveness of reference section of Nnamdi Azikiwe Library in discharging its mandate as information provider to the teeming population of its clientele. The survey was carried out with the use of questionnaire administered to 150 postgraduate students from which 120 were useable. This study revealed that a reasonable number of postgraduate students do not know where to

locate materials in their discipline and finally expanded services were not offered in the library. The writer recommended that the library stock be updated so as to create awareness to users. She also recommended that expanded services such as Internet services, reader's advisory services, career counseling services be embarked upon. All these she said would engineer reference services to meet the present ICT demands of users of this library.

This work has no direct relation with the present work. The writer's work deals with collection and non availability of certain services. The work covers only ref problem of reference services of Nnamdi Azikiwe Library which is a university library and a section of the library. This makes it differ, in terms of scope and area of study with relations to this work which intend to evaluate ICT competencies needed by librarians in federal university libraries in south-eastern Nigeria. Nevertheless the ideas in this study will be of immense used in this study.

In a study titled "Assessment of the preparedness of some Nigerian Research Institute Libraries in meeting modern challenges in information provision in the 21st century by Sado and Ibeun (2006), they identified poor library collections, lack of adequate staff, and lack of IT and librarians with ICT competencies in research libraries as the problem of research libraries. The study revealed that even the present staffs in the libraries are not well trained for services in the evolving modern information technology. They therefore recommended that staff should develop the attitude of self retraining, introduction of more courses on computer application should be incorporated into the library school curricula and that librarians should also be prepared to work with other staff in other disciplines to achieve their roles. The study adopted the survey method of research and questionnaires were designed and administered on ninety-eight respondents in ten research institutes. The study though related in some aspect like ICT and staff training. The researcher will however infer from some of the recommendations by writers.

In reporting Internet Access and Usage by the Students of Akanu Ibiam Federal polytechnic, Uwana, Owolabi (2007) examined Internet access and usage of two hundred and six polytechnic students randomly selected. Questionnaire was used as the main instrument for gathering information. The findings of this work revealed that all students were aware of the Internet as an instrument that provides information for teaching, learning, and research but very few students use it. The study also identified power problem as constraints in use of the facility. The study also revealed that school was yet to be connected with internet facility though there is a move. The writer therefore recommended that polytechnic management should facilitate her move in getting the school connected to internet services. This work though on polytechnic was limited to ascertain whether students have access to internet services and they are actually using the services. This work relates to the present work in a way because it is a study done on polytechnic on the use of Internet which is part of ICT. Its availability will justify the need for traditional librarians to acquire the ICT competencies to justify their professional ability. The findings and recommendation will therefore assist in carrying out this work.

A study titled Re-positioning Librarianship Education and Practice for ICT Challenges in Nigerian University Libraries by Omoniyi and Akinboro (2009) examined issues concerning the need to reposition librarianship to enable university libraries in Nigeria cope with challenges that information and communication technologies (ICT) may pose. Two hundred Librarians who attended the 2006 annual conference of the Nigerian Library Association in Abuja participated in the study. Researchers designed questionnaire of 22 questions was to obtain information from respondents. Mean score and standard deviation statistic were used to analyze the data. The study revealed that many library staff lacked ICT skills required for effective performance of the job;

Librarianship curriculum was not comprehensive enough to facilitate the acquisition of ICT skills by library science students; adequate/appropriate ICT facilities were not available in many Nigerian libraries. They therefore recommended that more ICT courses be included in Library Science curriculum, library personnel be trained and re-trained regularly on ICT skills, ICT learning infrastructural facilities including guided tour of ICT installations and application be adequately provided for Library Science students. This work although related in some aspect like training of staff, but the work was carried out in an isolated environment where other librarians were not fully represented. I will infer from some of the observations and recommendations.

An empirical study conducted by Joel-Ikokoh (2009), titled "Internet Access and Usage by Nigerian Educational Research and Development Council Staff at the Headquarter in Abuja" revealed that both the academic and non academic staff of NERDC is confused about Internet and its usage. Generally, some staff uses the Internet, but others are still confused about it. The study identified lack of internet access and lack of internet knowledge as constraints in the use of the facility. The researcher therefore recommended that NERDC staff be more conscious of the technology revolution upon the world and try catching up with it so as not to be left out. This, she said can be achieved through continual education and internet learning. The work although related to the present work, since it deals with issue of internet usage and access (technological usage and access) result and discussions and recommendations of this work will be of great help to the present work.

Similarly, Edem (2008) carried out a study on "Use of ICT among librarians in selected Nigerian Universities in South-South Zone". The study was to ascertain the extent and the level of use of Information Communication Technology (ICT) among librarians in selected Nigerian Universities. The survey was carried with the use of questionnaire. Three parameters were used to measure the extent and level of use of computers: percentages of

librarians who used Computers/Internet, variety of library services provided with the use of computer and internet and various uses of computer experiences, frequency of use and accessibility to Computer/Internet. This study revealed that Computer/Internet is not extensively used by librarians and that the level of use is very low. Major obstacles to effective use of ICT include lack of access to ICT, inadequate skills in the use of Computer/Internet and incessant power failure. The writer therefore recommended that automation and internet connectivity in libraries by the Federal Government with corresponding training programmes to enable librarians to acquire adequate skills and knowledge of computer potentials should be embarked upon. This work is related to the present work in the area of ICT training among librarians. The writer will infer from Edemø work to determine whether ICT training programmes alone can help in the changing of traditionally possessed competencies by librarians.

Also, Ugwuanyi (2008) carried out a work titled ÷Information and communication Literacy among Librarians in Enugu Stateøø The study was an investigation to ascertain the level of ICT literacy and application among academic librarians in Enugu State. The survey was carried out with the use of questionnaire administered to 55 academic librarians in tertiary institution in Enugu State. This study revealed that the level of ICT literacy among librarians in Enugu State is low though most of them indicated some element of computer literacy. The study also revealed that there is very poor ICT infrastructural facilities in the libraries studied. Various means such as formal and informal education, colleagues, training at workplace/seminars are accepted as ideal for the acquisition of ICT skills. However, financial problems, poor infrastructure, lack of library management interest and lack of training opportunity hinder the acquisition of skills. The writer therefore recommended that ICT infrastructure is give a priority in the institutionsø budget and opportunities to attend seminars/workshops and other professional education courses created for librarians to

upgrade their professional knowledge. This work has a direct relation to the present work. The writer's work deals with ICT literacy skills acquisition among librarians in only a State in Nigeria. This makes it different from the present work in terms of title, scope with relation to this which intends to evaluate ICT competencies needed by librarians in federal university libraries south-eastern zone of Nigeria.

Summary of Literature Reviewed

Review of related literature shows a dearth of studies on information communication technology competencies needed by librarians in federal universities in south-eastern Nigeria. Thus, the literature is based largely on documentary materials, a great deal of which comprises journals, articles and books of African/Nigerian origin. From the review of these sources, the following findings were made: most of the literature reviewed that Information communication technology (ICT) has introduced new ways of information handling; it has also brings about change in the very structure of information. Its communication has introduced conceptual changes in academic libraries. Users needs and expectations have also changed and increased. Traditional librarianship activities such, collection development, cataloging and classification, indexing and abstracting information services have been so much shifted and enhanced via ICT. Traditional competencies may no longer efficiently sustain librarians as information professionals. Librarians need new ICT skills and competencies that will improve their efficiency and effectiveness to library services in these shifts environment. Organization of training and training programmes will place them at the cutting edge. Although some problems may hinder the acquisition of various competencies by them, provision of fund by government, infrastructural provision by government, continuing training of administrators, establishment of training programme policy, library partnership and solar energy provision as back-ups during power outages, will make these issues less problematic. It must be pointed out however, that most of the works used have no

indirect focus on ICT competencies needed by librarians in federal university libraries in south east Nigeria. This is the gap this study wish to fill gap.

CHAPTER THREE

RESEARCH METHODS

This chapter was discussed under the following headings. Research design, area of the study, population of the study, sample and sampling technique, instrument for data collection, validity of the instrument, and procedure for data collection and method of data analysis.

Research Design

The research design used for this study was a descriptive survey research. Descriptive survey according to Nwaogu (2006) involves a systematic and comprehensive collection of information about the opinions, attitudes, feelings, beliefs, and behaviours of people. This method was used because the research was to elicit the opinions of the respondents on ICT competencies needed by librarians to cope with ICT within the four federal university libraries in South Eastern Nigeria geo political zone.

Area of Study

The area of study was South-eastern geo political zone of Nigeria. The states are Abia, Anambra, Enugu, and Imo. The study was carried out in this area because these states are of the same geopolitical area.

Population of the Study

The population of the study consisted of one hundred and four librarians all in the four federal university libraries in South-eastern geopolitical zone of Nigeria. These include Nnamdi Azikiwe University Library University of Nigeria Nsukka, Enugu State; Micheal Okpara University of Agriculture Library, Umudike, Abia State; Nnamdi Azikiwe University Library, Awka, Anambra State and Federal university of technology library, Owerri, Imo State).

Sample and Sampling Technique

The entire population of 104 librarians of the four university libraries above was used for this study. This was used based on the recommendation of Nworgu (2006), that when the population of a study is small; all the population should be used. Therefore the entire population was used without being sampled.

Instrument for Data Collection

The instrument for data collection was self-designed questionnaire entitled: Information Communication Technology Competencies Questionnaire (ICTCQ) which was developed based on the research questions of the study. The questionnaire consisted of two parts; 1 and 2. Part 1 solicited for personal information of respondents, while part 2 was divided into A, B, C, D, and E. Sections. Section A, sought information on competencies needed by librarians to cope with ICT with 28 items; section B solicited for information on ICT competencies possessed by librarians with 28 items; section C solicited for information on methods of acquiring ICT competencies by librarians with 12 items; Section D solicited for information on problems that hinder ICT competencies acquisition by librarians with 10 items; and section E solicited for information on strategies for improving the acquisition of ICT competencies by librarians with 8 items.

Validity of instrument

The instrument used for the data collection was subjected to face validation. The project supervisor and two experts in the field of library and information science research were required to face-validate the research instrument. These validates were required to identify ambiguities and proffer suggestions for improving the instrument towards meeting the objectives of the study. Based on their criticisms, some items were dropped, re-ordered,

while new items were introduced and the language rephrased for the final instrument for data collection.

Method of Data Collection

In order to ensure high percentage of return, questionnaire was personally administered and collected directly by the researcher from 104 librarians in these four federal universities libraries under study.

Method of Data Analysis

In analyzing the data collected, mean score, percentages and frequency table were used for the research questions, on the Statistical Package for Social Science (SPSS 16.0) package.

The percentage formula used was:

$$\frac{N}{P} \times \frac{100}{1}$$

Where n= number of respondents,

And p= Total population of the study.

Decision Rule:

Decision was taken using the four point likert scale of:

Strongly Agree (SA): Fully known (FK) 4 point

Agree (A): Known (K) 3 points

Disagree (D): Not certainly Known (KN) 2 points

Strongly Disagree (SD): Not Known (NK) 1 point

A mid-point of 2.50 which was the criterion mean was accepted as a positive response. This point was chosen because the average of the individual mean score was

$$\frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.50$$

Based on this mean score of 2.50, a decision was taken that any item with a mean score of 2.50 and above was regarded as Accepted (A) while, any item with mean score below 2.50 was regarded as Rejected (R).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

In this chapter, the data collected from the questionnaire are presented and analyzed using frequency table, simple percentage and mean. The presentation and analysis are done bearing in mind the five research questions which guided the study. Descriptive method was used for the analysis. Data collected from the questionnaires was analyzed together for each institution, based on the research questions.

Tables 1: Distribution based on the number of questionnaire served and returned.

S/N	University	Number of questionnaires distributed	Number Returned	Percentage of distribution %
1	Nnamdi Azikiwe Library, University of Nigeria Nsukka.	54	41	29.7
2	Michael Okpara University of Agriculture, Umudike	8	8	6.7
3	Nnamdi Azikiwe University Library, Awka	21	15	45.8
4	Federal University of Technology Owerri	35	31	17.8
	Total	118	95	80.5

In other to elicit information on institution, respondents were asked to indicate their institution of study. From the table a total number of hundred and eighteen (118) questionnaires were distributed to respondents but only ninety five (95) questionnaires were returned and correctly filled. This indicates a percentage of 80.5 which the researcher consider appropriate for use. Percentage of 50% was used as a bench mark.

Research Question 1: What Competencies are needed by librarians in Federal University to cope with ICT?**Table 2: Mean responses of Competencies needed by librarians to cope with ICT.**

S/N	ITEMS	UNN MEAN SCORE	MOUAU MEAN SCORE	UNIZIK MEAN SCORE	FUTO MEAN SCORE	GRAND MEAN	DECISION
1	Turning a computer on	3.93	3.75	3.93	3.90	3.87	A
2	Opening a computer file	3.90	3.50	3.80	3.84	3.76	A
3	Making a backup copy of computer file	3.49	3.25	3.20	2.74	3.17	A
4	Copying a file from one disk to another	3.20	3.25	3.40	3.10	3.24	A
5	Connecting to the internet	3.68	3.50	3.53	3.32	3.50	A
6	Using the MS-Word	3.71	3.25	3.13	3.23	3.33	A
7	Using the MS-Excel	2.59	2.12	2.33	2.55	2.39	R
8	Using MS-Access	2.12	2.38	2.80	2.42	2.43	R
9	Using power point	1.95	2.00	1.93	1.65	1.88	R
10	Using CDS/ISIS ,TIN LIB, Alice for window etc	2.20	2.25	2.07	1.81	2.08	R
11	Using the word wide web (WWW)	3.15	2.25	3.73	3.45	3.14	A
12	Sending email messages	3.46	2.50	3.67	3.10	3.18	A
13	Sending attachments	2.54	2.00	2.20	1.77	2.13	R
14	Downloading files from the internet	3.61	3.25	3.60	3.13	3.39	A
15	Using search engines: Yahoo, Google, MSN etc	3.61	3.00	3.67	3.32	3.40	A
16	Using keyword phrases or advanced search Techniques	3.73	3.12	3.00	3.03	3.22	A
17	Deleting a computer file	3.63	3.38	3.47	3.29	3.30	A
18	E-mail	3.63	3.12	3.53	2.97	3.31	A
19	Using OARE	3.80	3.12	2.87	2.94	2.18	R
20	Using AGORA	3.49	3.38	3.67	2.94	3.37	A
21	Using EBSCOHOST	3.34	2.75	3.13	2.65	2.96	A
22	Using HINARI	1.95	1.88	1.93	1.35	1.77	R
23	Using OPAC/Web OPAC	1.88	1.88	2.00	1.74	1.75	R

24	Web page design	1.68	1.75	2.20	1.97	1.90	R
25	Web content development	1.63	1.75	2.20	1.68	1.81	R
26	Network-based services	1.85	2.50	2.13	2.06	2.13	
27	Digital library services	1.98	2.62	2.87	2.19	2.41	R
28	Electronic document delivery services	2.12	2.75	3.40	2.06	2.58	A

Key: A= Accepted, R: Rejected

The result presented in table 2 shows that librarians need to improve their level of ICT competencies in areas such as using the Ms-Access, using power point, using library software such as CDS/ISIS, TINLIB, Alice for window etc, sending attachments, using library database such as OARE and HINARI, using OPAC, web page design, Web content development, network-based service. This is based on the attainment of mean scores of 2.39, 2.43, 1.88, 2.08, 2.13, 2.18, 1.17, 1.75, 1.90, 1.81, 2.13, and 2.41 respectively which are below 2.50 criterion mean

Research question 2: What ICT Competencies are possessed by Librarians in Federal University Libraries?

Table 3: Mean Responses of ICT Competencies Possessed by librarians in Federal University Libraries.

S/N	ITEMS	UNN MEAN SCORE	MOUAU MEAN SCORE	UNIZIK MEAN SCORE	FUTO MEAN SCORE	GRAND MEAN SCORE	DECISION
1	Turning a computer on	3.93	3.75	3.93	3.90	3.87	A
2	Opening a computer file	3.90	3.50	3.80	3.84	3.76	A
3	Making a backup copy of computer file	3.49	3.25	3.20	2.74	3.17	A
4	Copying a file from one disk to another	3.20	3.25	3.40	3.10	3.24	A
5	Connecting to the internet	3.68	3.50	3.53	3.32	3.50	A
6	Using the MS-Word	3.71	3.25	3.13	3.23	3.33	A
7	Using the MS-Excel	2.59	2.12	2.33	2.55	2.39	R
8	Using MS-Access	2.12	2.38	2.80	2.42	2.43	R
9	Using power point	1.95	2.00	1.93	1.65	1.88	R
10	Using CDS/ISIS ,TIN LIB, Alice for window etc	2.20	2.25	2.07	1.81	2.08	R
11	Using the word wide web (WWW)	3.15	2.25	3.73	3.45	3.14	A
12	Sending email messages	3.46	2.50	3.67	3.10	3.18	A
13	Sending attachments	2.54	2.00	2.20	1.77	2.13	R
14	Downloading files from the internet	3.61	3.25	3.60	3.13	3.39	A
15	Using search engines eg Yahoo, Google, MSN etc	3.61	3.00	3.67	3.32	3.40	A
16	Using keyword phrases or advanced search Techniques	3.73	3.12	3.00	3.03	3.22	A
17	Deleting a computer file	3.63	3.38	3.47	3.29	3.30	A
18	E-mail	3.63	3.12	3.53	2.97	3.31	A
19	Using OARE	3.80	3.12	2.87	2.94	2.18	R
20	Using AGORA	3.49	3.38	3.67	2.94	3.37	A
21	Using EBSCOHOST	3.34	2.75	3.13	2.65	2.96	A
22	Using HINARI	1.95	1.88	1.93	1.35	1.77	R

23	Using OPAC/Web OPAC	1.88	1.88	2.00	1.74	1.75	R
24	Web page design	1.68	1.75	2.20	1.97	1.90	R
25	Web content development	1.63	1.75	2.20	1.68	1.81	R
26	Network-based services	1.85	2.50	2.13	2.06	2.13	
27	Digital library services	1.98	2.62	2.87	2.19	2.41	R
28	Electronic document delivery services	2.12	2.75	3.40	2.06	2.58	A

Key: A= Accepted, R: Rejected

From table 3, it can be seen that librarians already possessed some basic ICT competencies such as turning a computer on with mean 3.87, opening a computer file with 3.76, making a backup copy of a computer file with 3.17, copying a file from one disk to another with 3.24, connecting to the Internet with 3.50, using Ms-Word with 3.33, using the mean WWW with 3.14, sending e-mail messages with 3.18, downloading files from Internet with 3.39, using key word phrases with 3.22, deleting a computer file with 3.30, using AGORA with 3.37, using EBSCOHOST with 2.96 and electronic document delivery services with 2.58. These levels of ICT competencies are accepted because they are above 2.50 criterion mean. But looking critically at the table one will observe, that these level ICT competencies possessed by librarians differs from one university library to another.

Research Questions 3: What Methods can be used by Librarians in acquiring ICT Competencies in Federal University Libraries?

Table 4: Mean Responses on Methods that can be used by Librarians in Acquiring Information and Communication technology competencies in Federal university Libraries.

S/N	ITEMS	UNN MEAN SCORE	MOUAU MEAN SCORE	UNIZIK MEAN SCORE	FUTO MEAN SCORE	GRAND MEAN	DECISION
1	Formal Education	3.15	2.38	3.40	3.09	3.22	A
2	Informal Education	3.15	2.62	2.40	3.13	2.82	A
3	Training on-the- job	3.17	2.88	3.33	3.32	3.17	A
4	Training by suppliers	1.93	2.00	1.47	1.81	2.25	R
5	Attending IT programmes	3.54	3.38	3.00	3.39	3.32	A
6	Attending workshops/seminars and conferences	3.63	3.88	3.60	3.61	3.68	A
7	Short courses	3.56	3.50	3.33	3.68	3.51	A
8	Job rotation	3.46	3.12	3.20	3.32	3.27	A
9	Internship	3.63	3.12	3.73	3.13	3.40	A
10	Teleconferencing	3.07	2.62	3.13	3.13	3.01	A
11	Through colleagues/friends	3.32	3.38	3.13	3.23	3.26	A

12	Through self study	3.44	2.88	3.20	3.06	3.14	A
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Key: A= Accepted R: Rejected

The result presented in table 4 above indicates that methods such as formal education with mean score of 3.22, informal education with 2.82, training -on- the- job with 3.17, attending IT programmes with 3.32, attending workshop/seminars and conferences with 3.68, Short courses with 3.51, job rotation with 3.32, Internship with 3.40, Teleconferencing with 3.01, colleagues/friends with 3.26, and self study with 3.14, were all accepted as veritable methods of ICT competency acquisition by librarians. This is based on the attainment of the criterion mean scores above 2.50. Training by supplier with mean score of 2.25 which is below 2.50 was rejected by respondents as not a veritable methods of ICT competency acquisition by librarians.

Research Question 4: What are the Problems Hindering the Acquisition of ICT Competencies by Librarians?

Table 5: Mean Responses of Problems Hindering the Acquisition ICT Competencies by librarians in Federal University Libraries.

S/N	ITEMS	UNN MEAN SCORE	MOUAU MEAN SCORE	UNIZIK MEAN SCORE	FUTO MEAN SCORE	GRAND MEAN	DECISION
1	Lack of fund	3.44	3.50	3.60	3.87	3.60	A
2	Lack of ICT facilities	3.66	3.00	3.47	3.61	3.43	A
3	Constant change in the ICT industry	3.22	2.50	3.00	3.16	2.97	A
4	Lack of technical background among University library administrators	3.17	2.88	3.40	3.16	3.15	A
5	Administrators lack of interest in ICT knowledge	3.12	2.88	3.60	3.29	3.22	A
6	Library management lack of interest in upgrading the ICT skills of librarians	2.90	2.38	3.33	3.26	2.15	R
7	Lack of partnership with highly computerized institutions	3.00	2.88	3.13	3.55	3.14	A
8	Lack of ICT policy.	3.66	2.88	3.47	3.23	3.31	A
9	Overload of working hours	3.59	3.38	3.00	3.19	3.41	A
10	Poor power supply	3.59	3.88	3.80	3.77	3.76	A

Key: A= Accepted, R: Rejected

The result presented in table 4 shows that lack of fund with mean of 3.60, lack of ICT facilities with mean score of 3.43, constant change in the ICT industry with mean score of 2.97, lack of technical background among University library administrators with mean score of 3.15, administrators lack of interest in ICT knowledge with mean score of 3.22, lack of partnership with highly computerized institutions with mean score of 3.14, Lack of ICT

policy with mean score of 3.31, Overload of working hours with 3.41, and poor power supply with mean score of 3.76, are accepted by respondents as problems that hinder ICT competency acquisition by librarians since they are above 2.50 criterion mean. Library management lack of interest in upgrading the ICT skills librarians with mean score of 2.15 was rejected by respondents.

Research Question 5: What Strategies can be used by Librarians in Federal University Libraries to improve these stated problems?

Table 6: Strategies that is likely to be used to improve ICT competency acquisition.

S/N	ITEMS	UNN MEAN SCORE	MOUAU MEAN SCORE	UNIZIK MEAN SCORE	FUTO MEAN SCORE	GRAND MEAN	DECISION
1	University libraries and their authorities should press for more funds from government.	3.83	3.62	3.87	3.90	3.80	A
2	They should seek for alternative sources of fund for ICT Projects	3.80	3.50	3.67	3.74	3.67	A
3	They should continually organize ICT training courses for librarians	3.76	3.75	3.80	3.74	3.76	A
4	They should monitor technological changes and development as well as monitor information preferences of their patrons.	3.51	3.38	3.53	3.61	3.50	A
5	Administrators should always go for constant ICT training to keep an update of ICT.	3.07	3.62	3.60	3.77	3.51	A
6	ICT training policy should be mapped out in every University library.	3.68	3.62	3.73	3.68	3.67	A
7	Partner with ICT compliant libraries	3.49	3.62	3.47	3.81	3.59	A
8	Government should provide Solar back- ups in every University library	3.83	3.50	3.53	3.81	3.66	A

Key: A= Accepted, R: Rejected

The result presented in table 5 above indicates that all the strategies are accepted by respondents as strategic means of improving the ICT competency acquisition of librarians in federal university libraries in Nigeria. This is based on the attainment of mean scores of 3.80,

3.67, 3.76, 3.50, 3.51, 3.67, 3.59, and 3.66 respectively for the item on the table which are above the criterion mean of 2.50.

Findings of the Study

The major findings of this study based on the analysis of data can be summarized as follows:

1. That librarians still lack and need ICT competencies in the areas of Ms-Access usage, power-point usage, library software such as CDS/ISIS, Tin Lib, Alice for window, sending email attachments, using database such as OARE and HINARI, using OPAC, designing a web page, Web content development, network-based services.
2. That librarians already possess some basic ICT competencies such as turning a computer on, opening a computer file, making a backup copy of a computer file, copying a file from one disk to another, connecting to the Internet, using Ms-Word, using the mean WWW, sending e-mail messages, downloading files from Internet, using key word phrases, deleting a computer file, using AGORA, using EBSCOHOST and electronic document delivery services.
3. That Formal education, Informal education, training -on- the- job, Attending IT programmes, Attending workshop/seminars and conferences, Short courses, job

rotation, Internship, Teleconferencing, Through colleagues/friends, and Through self study are all veritable methods of ICT competency acquisition by librarians.

4. That problems hindering ICT competency acquisition include lack of fund, lack of ICT facilities, constant change in the ICT industry, lack of technical background among university library administrators, administrators lack of interest in ICT knowledge, lack of partnership with highly computerized institutions, lack of ICT policy, overload of working hours and poor power supply.
5. That strategies for improving these problems are: university libraries and their authorities should press for more funds from government, seek for alternative sources of fund for ICT projects, continually organize ICT training courses for Librarians, monitor technological changes and development as well as information preferences of their patrons, administrators going for constant ICT training to keep an update of ICT, administrators mapping out ICT training policy in university libraries, partnering with ICT complaints libraries and administrators urging government to make provision for solar backups in every university library as an alternative sources of energy.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter is a presentation of discussion of findings of this study, the conclusion, the implication of the findings, recommendations, limitations of the study, and suggestions for further research.

Discussion of findings

The discussion is pursued in line with the specific objective of the study.

Competencies needed by librarians to cope with ICT

The analysis done on competencies needed by librarian to cope with ICT in federal university libraries in Nigeria shows that librarians still need to improve in their level of ICT competencies in the area such as computer operations, database usage, software usage, advanced internet competency, networking competency as well as electronic based library services competency. This finding is in line with Anunobi (2010), Ugwuanyi (2009), Chio and Rasmussen (2006) and Latham (2000). They are of the view that librarians require some level of ICT competencies to cope in the new electronic environment which they found themselves. This they argued is the strength of the librarian, the power that enables him to communicate the value of the library services to their patrons in the electronic environment. It is also in agreement with Bgadgi (2004) who stressed the need for these competencies by librarians as vital as the new environment demands them. Proliferation of information has to be controlled, packaged and repackaged to satisfy user's information need. This is also based on the reason given by Stubbing and MCmab (2001) that some group of users lack the necessary IT skill to obtain quality information and information professionals will be called upon to act as both educators and intermediaries to users. The new environment requires some skill, attitudinal and knowledge transformation by librarians to catch up with their new electronic environment.

ICT competencies possessed by librarians

The analysis done on the ICT competencies possessed by librarians in federal university libraries in South- Eastern Nigeria shows that they already possess basic ICT competencies such as turning a computer on, opening a computer file, making a backup copy of a computer file, copying a file from one storage device to another, connecting to the Internet, using Ms-Word, using the WWW, sending e-mail messages, downloading files from Internet, using key word phrases, deleting a computer file, using AGORA, using EBSCOHOST and electronic document delivery services. This is a clear indication that librarians still lack other high level of ICT competencies that will make them more proactive as information professionals in their new environment. This is in line with Nwachukwu (2005) who stated that there is still need for extension of knowledge and the application and utilization of computer and other form of modern information technologies by librarians in order to render quick and cost effective services to their users. The inability of librarians to possess professional ICT competencies in areas such as computer operations, database usage, software usage, advanced internet usage, networking competency as well as electronic based library services, means that they cannot offer ICT services that relates to such areas to users.

Methods of ICT competency acquisition by librarians

The analysis done on methods of acquiring information technology competencies by librarians in federal university libraries in Nigeria shows that out of the twelve methods, eleven were accepted and rated high by librarians as veritable methods of ICT competency acquisition by librarians. Methods such as formal education, informal education, training -on-the- job, attending IT programmes, attending workshop/seminars and conferences, short courses, job rotation, internship, teleconferencing, through colleagues/friends, and through

self study. This finding is in agreement with the opinion of Onah (2003), Ogundipe (2005), and Chiwere (2007) who enumerated formal education, informal education, training on-the-job, training by suppliers, attending workshops/conferences short courses job rotation internship, teleconferencing etc. as authentic methods of acquiring ICT competencies by librarians. But these methods cannot be useful if university management do not utilize them as veritable means of training librarians' competency acquisition. The non recognition and utilization of these methods means that traditional librarians who have never passed through these methods will not be able to cope with all the ICT transitions, transformations and changes that have occurred over time in librarianship.

Major problems that hinder ICT competency acquisition

The analysis done on perceived problems hindering ICT competency acquisition by librarians in Nigeria federal university libraries shows that lack of fund, lack of ICT facilities, constant change in the ICT industry, lack of technical background among university library administrators, administrators lack of interest in ICT knowledge, lack of partnership with highly computerized institutions, lack of ICT policy, overload of working hours and poor power supply are the major problems that hinder ICT competency acquisition by Librarians. This result agrees with Uzoigwe (2005) who identified finance as the first major problem. It also agrees with Amkpa (2007) who stated that ICT is a capital intensive venture, both in the acquisition, installation, maintenance, training and sustainability. University library budgets are very lean and dwindling, this Nigeria University Librarians will venture in formal training of their Librarians ICT competency acquisition as this will demand some level of ICT facilities on ground. It also agrees with Minishi-Majania (2007), Esterhuyer (2002) who hinged the problem of ICT competency acquisition on constant change in the ICT industry they argued that the most damaging consequence of the volatile nature of ICT is that users, having invested time and money are caught up in an internal game of catch up. This situation

they claim create a very big discouragement in the heart of some traditional library administrators who have no flare for ICT who then use this as an excuse for not making provision for ICT training for librarians. Other problems such as poor power supply, lack of ICT policing as much as librarians and library administrators lack of partnership with highly computerized institutions, conform with Dahal (2006), Nnadozie (2007) and Gbaje (2007) as problems that hinder ICT competency acquisition by librarians.

Strategies for Improving ICT Competency Acquisition by Librarians

Analysis done on strategies for improving ICT competency acquisition by librarians in federal university libraries in South-Eastern Nigeria, the eight strategies were accepted by respondents as their mean ratings are above the criterion mean of 2.50. University libraries and their authorities should press for more funds from government, seek for alternative sources of fund for ICT projects, continually organize ICT training courses for Librarians, monitor technological changes and development as well information preferences of their patrons, administrators going for constant ICT training to keep update of ICT, map out ICT training policy in every university libraries in Nigeria, partner with ICT complaints libraries and urge government to make provision for solar backups in every university library in Nigeria as an alternative source of energy. The present findings are in agreement with Amkpa (2009) who identified ICT as a capital intensive venture, both in installation, acquisition, maintenance, and sustainability. University library budgets are very lean and dwindling, this has been of serious negative effect on libraries and its operations. With these problems, he stressed that not all the libraries will venture into training of librarians for ICT competency acquisition. Based on this fact, the researcher strongly holds that many federal university libraries in Nigeria need funds, training and continual training of library administrators to increase their knowledge of ICT. This is because developing, installing, configuring web applications in net work environment requires an understanding of how the chosen network

operating system works and their privilege among users. It is then needful for library administrator to go for continual ICT training to gain ICT background and knowledge. This knowledge will make them see the need of seeking for alternative sources of fund for ICT projects. As rightly reviewed by Gbaje (2007), developing, installing, configuring, and web application in network environment requires the understanding of how the chosen network operating system privilege among users.

Conclusion

Librarians in federal university libraries in Nigeria need to acquire ICT competencies in order to cope with their new ICT environment.

1. The major ICT competencies needed by librarians are both basic and advanced ICT competencies.
2. Majority of librarians in federal university libraries in Nigeria already possess basic ICT competencies and still need advanced ICT competencies. It was also observed that these levels of ICT competencies vary from one university library to another.
3. Lots of librarians need to be formally reoriented on their ICT competency levels through various methods to make them more proactive in their new ICT environment.
4. Librarians will acquire these ICT competencies if more fund is provided, if administrators seek for alternative sources of fund for ICT projects, continual ICT training programmes are organize for Librarians, if technological changes and information preferences of patrons are monitored, if administrators go for constant ICT training to keep an update of ICT, if ICT training policy are keenly mapped out in every federal university libraries in Nigeria, if less ICT privileged universities in Nigeria partner with ICT complaints libraries and if government are urged to make provision of solar backups in every federal university library in Nigeria.

Implications of the study

This subsection deals with the implications of the study based on the findings and discussions. Specifically the following implications are identified which can be of immense benefit to library managers, libraries, and their patrons.

This reveals that librarians in federal universities in Nigeria still needs to improve their level of ICT competency in the areas such as Ms-Access, power-point usage, library software such as CDS/ISIS, Tin Lib, Alice for window, sending email attachments, using database such as OARE, HINARI, using OPAC, designing a web page, Web content development, network-based services. What this implies is that librarians in federal university in Nigeria still lack ICT competency to cope with current environment. This then signifies that in spite of benefits derivable from ICT in libraries, librarians still need to acquire ICT competencies that will enable them cope in their new environment in the real sense.

The findings that librarians already possess some basic ICT competencies, has some implications. It implies that librarians in federal university libraries in Nigeria will only render ICT services that only relates to such basic areas and will not be able to cope with other aspects of library services that involve advance ICT competencies. This lack will make them not to be able to face ICT challenges in their new electronic environment.

The findings that all the methods of acquiring ICT competencies were selected by respondents have some implications. This implies that these are veritable methods of ICT competency acquisition. It then means that if they are recognized and applied, librarians in federal university libraries in Nigeria will be able to cope with ICT challenges in the new electronic environment which they found themselves.

The findings that problems that is hindering ICT competency acquisition by librarians are lack of fund, lack of ICT facilities, constant change in the ICT industry, lack of technical background among university library administrators, administrators lack of interest in ICT knowledge, lack of partnership with highly computerized institutions, lack of ICT policy,

overload of working hours and poor power supply, has some implications. The implication is that traditional librarians cannot acquire a comprehensive ICT competencies that will enable them cope or render ICT services competently to their users in the modern ICT environment with these problems on ground. This is a risk to their professional confidence and image within this new environment.

The findings that strategies for improving ICT competency acquisition are, university libraries and their authorities should press for more funds from government, seek for alternative sources of fund for ICT projects, continually organize ICT training courses for Librarians, monitor technological changes and developments as well as information preferences of their patrons, administrators going for constant ICT training to keep an update of ICT, mapping out ICT training policy in every university libraries, partnering with ICT complaints libraries and urging government to make provision of solar backups in every federal university library in Nigeria as an alternative sources of energy, has some implication. It implies that there is urgent need to implement these strategies to enable librarians be proactive in their current ICT environment.

Recommendations of the study

The following recommendations were made based on the findings and implications of the study:-

1. There is need for librarians in all the federal university libraries in Nigeria to acquire advanced ICT competency that will enable them cope in the new electronic environment.
2. There is need for library administrators to always go for continual training to enable them see the need and areas of improving the ICT competency of librarians.
3. There is need for library administrators to press for more funds from government or alternatively sought for other source of funds in form of donations and grants from donor

agencies and nongovernmental outfits. Private well meaning individuals and philanthropist should also be invited to assist in ICT projects in university libraries.

4. Since electricity power supply is central to ICT projects, the government should strive to make provisions for solar backups in every university libraries in Nigeria.
5. Finally, government should immediately look at National policy on Information communication technology (ICT) to spark off the immediate implementation and proper improvement of ICT infrastructure and facilities in every university library in Nigeria.
6. Library schools also need to structure their curriculum in line with the global trends in ICT. This will give graduates firsthand knowledge and competencies in ICT related areas i.e. web development and design, configuration of servers, networking and database management and retrieval among others.

Limitations of the study

The study was constrained by a number of problems, prominent which are:

The sample for the study was limited to only librarians of federal university in Nigeria with the presence of other staff; it was desirable that study of this kind should include all library staff in federal university libraries in Nigeria. This would have given room for more comprehensive comparison.

An extra factor that has affected this work is ðfakeö an attitude from individual rather than the test itself. Most librarians feel their ICT incompetency will be exposed when the right information is given.

Suggestions for further research

In view of the implications of this study, the researcher would wish the following as areas for further research.

1. A comparative analysis of ICT possessed competencies by librarians in university libraries in Nigeria.

2. Effects of non possession of ICT competencies by librarians in federal university.
3. Factors militating against the ICT competency acquisition by librarians in federal university libraries in Nigeria.
4. The need for information communication technology policy in university libraries in Nigeria.

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Population of librarians based on institutions

APPENDIX 1
INFORMATION COMMUNICATION TECHNOLOGY COMPETENCIES NEEDED
BY LIBRARIANS IN FEDERAL UNIVERSITY LIBRARIES IN SOUTH- EASTERN
NIGERIA.

Department of Library and Information
Science,
University of Nigeria, Nsukka,
Enugu State.
1st September, 2010.

Dear Respondent,

I am carrying out a study on information communication technology competencies needed by librarians in federal university libraries in south-eastern Nigeria undertaken in the partial fulfillment of the award of master's degree in library and information science. The information you give will be treated with confidentiality.
Thank you for your co-operation.

Yours sincerely,

Okoro, Caroline Amarachi.

PART 1: Bio Data

1. Which of the following is your highest academic qualification?
 - (a) B.Sc (Hons)
 - (b) BA (Hons)
 - (c) MLS
 - (d) PH.D
 - (e) Others (specify) -----
2. How long have you worked in your library?
 - (a) 0 - 5 years
 - (b) 6 - 10 years

- (c) 11 - 15 years
- (d) 16 - 20 years
- (e) 21 - years and above

PART 2

Section A: ICT COMPETENCIES NEEDED BY LIBRARIANS

Please tick (ç) the boxes which best describe your level of competencies in each of these areas.

S/N	Items	Fully known	Known	Not known	certainly	Not known
1	Turning a computer on					
2	Opening a computer file					
3	Making a backup copy of computer file					
4	Copying a file from one disk to another					
5	Connecting to the internet					
6	Using the MS-Word					
7	Using the MS-Excel					
8	Using MS Access					
9	Using power point					
10	Using library software: CDS/ISIS, TIN LIB, Alice for window etc.					
11	Using the word wide web (WWW)					
12	Sending email messages					
13	Sending attachments					
14	Downloading files from the internet					
15	Using search engines eg yahoo, Google, MSN etc.					
16	Using keyword phrases or advanced search techniques					
17	Deleting a computer file					
18	E-mail					
19	Using OARE					
20	Using AGORA					
21	Using EBSCOHOST					
22	Using HINARI					
23	Using OPAC/ Web OPAC					
24	Web page design					
25	Web content development					
26	Network-based services					
27	Digital library services					
28	Electronic document delivery services					

Section B: ICT COMPETENCIES POSSESSED BY LIBRARIANS

Please tick (ç) the boxes which best describe your level of ICT competencies possessed in each of these areas.

S/N	Items	Fully known	Known	Not certainly known	Not known
1	Turning a computer on				
2	Opening a computer file				
3	Making a backup copy of computer file				
4	Copying a file from one disk to another				
5	Connecting to the internet				
6	Using the MS-Word				
7	Using the MS-Excel				
8	Using MS Access				
9	Using power point				
10	Using library software: CDS/ISIS, TIN LIB, Alice for window etc.				
11	Using the word wide web (WWW)				
12	Sending email messages				
13	Sending attachments				
14	Downloading files from the internet				
15	Using search engines eg yahoo, Google, MSN etc.				
16	Using keyword phrases or advanced search techniques				
17	Deleting a computer file				
18	E-mal				
19	Using OARE				
20	Using AGORA				
21	Using EBSCOHOST				
22	Using HINARI				
23	Using OPAC/ Web OPAC				
24	Web page design				
25	Web content development				
26	Network-based services				
27	Digital library services				
28	Electronic document delivery services				

Section C: METHODS OF ACQUIRING INFORMATION AND COMMUNICATION TECHNOLOGY COMPETENCIES BY LIBRARIANS.

KEY: SA=Strongly Agree, A=Agree, D=Disagree, SD= Strongly Disagree

Indicate your level of agreement to the following methods of ICT competency acquisition.

S/N	ITEMS	SA	A	D	SD
1	Formal Education				
2	Informal Education				
3	Training on-the-job				
4	Training by suppliers				
5	Attending IT programmes				
6	Attending workshops/seminars and conferences				
7	Short courses				
8	Job rotation				
9	Internship				
10	Teleconferencing				
11	Through colleagues/friends				
12	Through self study				

Section D: PROBLEMS HINDERING THE ACQUISITION OF ICT COMPETENCIES BY LIBRARIANS.

KEY: SA=Strongly Agree, A=Agree, D=Disagree, SD= Strongly Disagree

Indicate your degree of responses to the following problems that hinder ICT competency acquisition.

S/N	ITEMS	SA	A	D	SD
1	Lack of fund				
2	Lack of ICT facilities				
3	Constant change in the ICT industry				
4	Lack of technical background among university library administrators				
5	Administrators Lack of Interest In ICT knowledge				
6	Library management lack of interest in upgrading the ICT skill of librarians				
7	Lack of partnership with highly computerized institutions				
8	Lack of ICT policy				
9	Overload of working hours				

10	Poor power supply				
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Section E: STRATEGIES FOR IMPROVING THESE STATED PROBLEMS

KEY: SA=Strongly Agree, A=Agree, D=Disagree, SD= Strongly Disagree

Indicate your degree of responses to the following strategies that is likely to be used to improve ICT competency acquisition.

S/N	ITEMS	SA	A	D	SD
1	University libraries and their authorities should press for more funds from government				
2	They should seek for alternative sources of fund for ICT projects				
3	They should continually organize ICT training course for librarians				
4	They should monitor technological changes and development as well as monitor information preferences of their patrons.				
5	Administrators should always go for constant ICT training to keep an update of ICT.				
6	ICT training policy should be mapped out in every university library.				
7	Partner with ICT compliant libraries				
8	Government should provide solar back-ups in every university library.				