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Multimedia Instructional Resources for Effective Library User Education Programme in Universities in North-Central, Nigeria

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Abstract

The study focused on multimedia instructional resources for effective user education programme in universities in North-Central, Nigeria. The objective of the study was to examine whether multimedia instructional resources are effectively utilized in user education programme in universities in North-Central region of Nigeria. The area of the study covered selected universities in North-Central, Nigeria which include: University of Ilorin, Kwara State, Federal University of Technology, Minna, Niger State and Federal University of Agriculture Makurdi, Benue State. The descriptive survey research design was adopted for this study. The total population of the study was 7,103 registered freshmen for the "Use of Library" course. A stratified random sampling technique was used to select a sample size of 213 students. Instrument for data collection was questionnaire. 213 questionnaires were distributed to the first year students registered for the "Use of Library" (user education programme) and 196 were returned and used for the study. The study used frequency counts and simple percentages as statistical measures for data analysis. Result showed that multimedia instructional resources are used in user education programme to a low extent. It was also revealed that multimedia instructional resources enhance user education to a very great extent. However, challenges were identified as the militating factors against effective use of multimedia in user education which include inadequate power supply, poor funding of library, high cost of multimedia facilities, lack of ICT infrastructure and lack of competence in the use of multimedia technology. Strategies for enhancing the use of multimedia resources in user education programme include that there should be adequate power supply if multimedia must be adequately utilized; there should be provision of relevant ICT infrastructures; there should be adequate funding of library services by the government and other agencies; the user education instructors should be trained in the use of multimedia resources and that the government should subsidize or reduce the tariffs on importation of multimedia resources. The study recommended that multimedia instructional technologies should be adopted by the universities in Nigeria as a common mode of instruction in library user education programme (the use of library, library orientation, information literacy, library instruction) and other aspects of user education programme. This will help to enhance students' understanding of various library concepts, resources and services and make them independent proficient users of library.

Keywords- Multimedia, Multimedia Technologies, Multimedia Resources, Instructional Resources, Library User Education, University, University Library

Introduction

University is basically defined as institution of higher learning devoted to teaching, learning and research activities; covering wide arrays of academic disciplines and awarding degrees, certificates and diplomas as the case may be, to postgraduates, undergraduates and other students at the completion of their academic programmes. Universities can be referred to as the apex institutions of higher in the acquisition and communication of knowledge and also a citadel of learning that offers wider academic programmes. Ifidon (1998) posits that universities are established for four related purposes of teaching, learning, and research and community/public service.

Nigerian universities education is concerned with building strong society and enhancing national development. Peretomode (2008) states that university education helps the students to improve their frontier of knowledge and understanding by preparing them to cope with all the major aspects and questions of human existence both personal and social; it provides an ethical education to graduates who are not just thinking creatures but the ones that know the differences between right and wrong etc. Quoting Federal Government of Nigeria National Policy on Education, Peretomode (2008) identifies the followings goals and objectives of university education in Nigeria:

> *To contribute to the national development through high level relevant manpower training; to develop and inculcate proper value for the survival of the individual and society; to develop the intellectual capability of individual to understand and appreciate their local and external environments; to acquire both physical and intellectual skills which will enable individuals to be self-reliant and useful members of the society; to promote and encourage scholarship and community service; to forge and cement national unity; to promote national and international understanding and interaction; to the acquisition, development and inculcation of the proper value orientation for the survival of individuals and society; to the development of the intellectual capacities of individuals and society; to the acquisition of both physical and intellectual skills to enable individuals to develop into useful members of the community; to acquire an objective view of local and external environment; to promote and encourage scholarship and research; to make optimum contribution of graduates to national unity and envelopment and to provide qualitative education for students leading to development of human minds, social-cultural and economic values of the nation.*

Achieving the goals and objectives highlighted above becomes almost impossible without functional university libraries. The library is a driver of knowledge and the gateway through which goals and objectives of the university are assured. Anyim (2017) views university library as an intellectual resource centre of the university established to play a supportive role of enhancing knowledge frontier of students, teaching and non-teaching staff of the university.

In order to ensure effective navigation and exploitation of information resources in the library by the users without being stranded when librarians are not available for assistance, the university library introduced library user education programmes. These programmes are designed to teach library users the skills of searching, evaluating and retrieving information in the traditional and electronic library environment. User education programmes are called several names by different people. Some call it use of library, reader instruction, reader education, library use education, user instruction, library orientation, bibliographic instruction and information literacy. Whatsoever name library user education is referred to, Harold's Glossary for librarians (2000) defines it as a programme of information provided by librarians to enable users to make more efficient and independent use of the library's resources and services.

However, various instructional modes have been used to teach library user education right from the time the programme was introduced in the Nigerian universities. Studies revealed that traditional teaching methods have existed so long and have been predominantly used in user education programme. This method of instruction must have contributed a lot in the past as Information Communication technologies have not taken over virtually every aspect of human endeavour. Due to changes in technology and innovation which have revolutionized the way people learn, multimedia instructional resources become the only hope for effective mode of teaching user education programme. Multimedia Instructional resources are used in this study to mean combination of different instructional resources to mechanize the methods, procedures and routines used to present information or knowledge. Multimedia instructional resourcess are designed and developed for the purpose of making instructional delivery effective. According to Nwangwu and Obi (2014), multimedia instructional resources aid instructors in conveying information easily to students and facilitate clear understanding of concepts as well as capturing students' interest and attention throughout the duration of instructional activity

Statement of the problem

Instruction Librarians continually search for more ways to engage their students during library user education classes to increase the students learning outcomes. Multimedia instructional resources are very essential in library user education programme especially, in the information age as it enhances students' attention and increases comprehension. However, the use of traditional method in the information age might not be adequate enough to create the desired teaching and learning effect. This will lead to poor library user education that will not really guarantee effective information literacy skill of users. It was observed through studies that university library users in North-Central, Nigeria exhibit poor knowledge of the use of library. This could be attributed to poor user education programme resulting from inadequate use of multimedia instructional resources as the environment of the library has changed drastically due to the introduction of Information Communication Technologies.

However, it was discovered that universities in North-Central region of Nigeria engage in library user education programme but it is not empirically known the extent to which multimedia instructional resources are used in user education. It also seems that no research has been carried out on this topic which justifies the present study. It is based on this fact that the researcher embarks on this study to assess the multimedia instructional resources for effective library user education programme in North-Central, Nigeria.

Purpose of the Study

The general purpose of the study is to assess the use of multimedia instructional resources for effective library user education programme in North Central Universities. Specifically, the study is intended:

1. To examine the extent of use of multimedia instructional resources in library user education programme in North-Central, Nigeria

2. To examine the extent to which multimedia instruction resources enhance library user education in North-Central, Nigeria.

3. To identify the challenges associated with the use of multimedia resources in user education programme in Nort-Central, Nigeria

4. To identify strategies for enhancing the use of multimedia resources in user education programme in North-Central, Nigeria.

Research Questions

1. What is the extent of use of multimedia instructional resources in library user education in North central Nigeria?
2. What is the extent to which multimedia instruction resources enhance library user education in North Central Nigeria?
3. What are the challenges associated with the use of multimedia in user education programme in North Central Nigeria?
4. What are the strategies for enhancing the use of multimedia resources in user education programme in North-Central, Nigeria?

Significance of the Study

After the successful completion of this study, it is expected that it will be of great significance to the following groups: students, librarian/lecturers, the government and researchers. The results of this study will provide useful information to students on the various multimedia resources used in instruction and their relevance to effective library user education in the university. The result also will help in the provision of guidance to librarians/lecturers on the application of appropriate multimedia instructional resources to library user education programme and in the identification of possible solutions to the problems associated with the application of multimedia resources. The government will gain from this research as it will help in formulating policies relating to the National Information Technology Policy in Education. Finally, this study will be a vital source of information to researchers who want to conduct a research in the related topic.

Scope of the Study

This study is limited to multimedia instructional resources for effective library user education programme in universities in North-Central, Nigeria. The study specifically covers library user education programme using multimedia instructional resources at the University of Ilorin; Federal University of Technoloy, Minna and Federal University of Agriculture, Makurdi.

Literature Review

Concept of Library User Education Programme

Library is saddled with the responsibilities of providing information resources and services and personal assistance to the users. The introduction of user education or library instruction came as a matter of necessity by most university libraries around the globe as a way of assisting their patrons to make effective use of library resources in the information age. The information explosion and proliferation of students' enrollment in the university doubled the responsibilities of the university library especially on the provision of personal assistance to the teeming students. Nwokocha (2012) observes from reliable library statistics that from the unprecedented explosion in admission figures of tertiary institutions and colleges of education, the individual assistance to library users becomes difficult if not impossible. To address this challenge, Aguolu and Aguolu (2002) strongly recommend the need to educate the users through library user education programme in order to make the users proficient and independent users of the library resources. This added to the responsibilities of the library to instruct or educate the users on the various departments, information sources of both printed and electronic format, their uses and also services rendered by the library.

User education or library instruction has become a central theme in library and information science discourse as well as in research generally (Nwokocha, 2012). The rationale was addressed by experts such as Akibode (1996), Adeniyi (2000) and Onalapo-Akinbode (2002), who expressed disappointment over the inability of users to conveniently make use of libraries without staff assistance. They expressed the fear that this situation may go out of hand with the introduction of advanced information technology in library operations. There is therefore the need to educate the patrons on how to use Information and Communication Technology (ICT) tools for the location and retrieval of information in the library. User education programmes also becomes necessary in view of the fact that most of the entreats into higher institution especially in Africa are reportedly lacking in good reading habits and library skills thereby necessitating the use of library user education programmes by academic libraries in order to make the users more user-friendly (Mchombu, 1991; Aguolu and Aguolu, 2002)

Library user programmes in universities take different dimensions or nomenclatures. It could be referred to as library orientation, use of library programme, information literacy, library instruction programme and so on. Supportably, Luwehabwa cited in Nwokocha (2012) views user education from various perspectives which include reader instruction, reader education,

library use education, user instruction, library orientation, bibliographic instruction and information literacy. It will not be an error to accept all of the above as library user education since they all centered on the skills for access and retrieval of information in the library, traditionally and digitally. According to Nwokocha (2012), whatever the change in nomenclature and the aim of the concept, user education, at any point in time refers to organized programmes to enable users use the library more effectively.

Azubuike (2001) maintains that user education is known by a number of names including library instruction, introduction to the use of the library and library orientation. According to him, whatever it is called, it deals with helping library users to learn how to effectively and efficiently make use of the resources in the library. Similarly, Nna-Etuk (2003) has identified various terms of user education which include "reader instruction", "library use education" and "bibliographic instruction". He asserts that these terms are sometimes used interchangeably as they all refer to organized programmes practiced in various types of libraries to assist library users to acquire skills on how to use the library resources most effectively. Uhegbu (2001) opines that each of the terms related to user education has the potential of creating the necessary awareness and acquaint users with ideas of how knowledge is organized in the library. *Harold's Glossary for librarians* (2000) also describes user education as a programme of information provided by librarians to enable users to make more efficient and independent use of the library's resources and services.

Library user education programme is designed to equip library users with the requisite knowledge and skill that will enable them to understand what and how information is accessed, retrieved, evaluate and used. In the same vein, Aina (2004) opine that user education is conceived as a holistic programme that emphasizes the need of users to acquire life-long skills that will enable them search for information independently on any aspect of knowledge using both traditional and electronic methods of accessing information.Library user education according to Issa (2009) is concerned with study of the use of information and the manner in which it is generated, retrieved, transmitted, and used. It is programme that applies the practices, perspectives, and tools of management, information technology, education, and other areas to library and information services (Osagie, 2003).

The ability of users to make use of libraries effectively without necessarily soliciting for librarians' assistance is the outcome of user education programmes. Nwokocha (2012) opines that library skills are not inherent but acquired through a process of teaching and learning often known as user education. Joch (2009) argues that library skills which is the product of user education programmes enable a library user to know the materials and services available in order

to take advantage of available resources and develop a reasonable level of self-reliance; master the use of the catalogue and how to interpret the information found in them, to be able to locate materials by author, title, subject, keyword or call number in the library; to know how to use electronic databases and how to interpret their contents in order to navigate through electronic databases and acquire knowledge of computer operation; to be able to use the computer to access the library catalogue, electronic databases and the Internet.

User education equips users with requisite information literacy skills which according to James (2010), is the ability to identify what information is needed, understand how the information is organized, identify the best sources of information for a given need, locate those sources, evaluate the sources critically, and share that information. University of Idaho, (2010), opines that the information literacy skills acquired through user education programme are useful in academic engagements, such as research papers and group presentations. They're useful in locating, evaluating, using and sharing information. Tuckett (1989) insists that since information literacy involves computer technologies, librarians need to teach users to become literate in the act of locating and evaluating information with the use of computers.

The present information age demands application of appropriate instructional tools for effective teaching and learning. Library user education is not an exemption in the use of emerging multimedia instructional tools. Library user education in Nigeria today may not be adequate without adherent to the call of multimedia use in teaching and learning. Nwalo (2000) posits that library user education requires the utilization of emerging instructional resources, expertise and careful planning in teaching and learning. The education and training of library users requires ICT applications as to empower students to unleash their potential leading to efficient output within the current levels of technological sophistication (Minishi¨Majanja, 2007). It has been a crux of concern in the contemporary era for making a stride towards enhancing teaching and learning by incorporating multimedia technologies in classroom engagements. It is therefore every important for librarians to stay connected to the trend and developments in information technology and learn them early so they can teach the patrons. Vasanthi (2001) posits that the main aim of user education is to make information user capable of locating, retrieving and using information. This, according to him can contribute to developing information technology (IT) related competencies among end-users as it includes basic computer and network literacy.

The user education programmes provides users with the necessary skills on how to optimally utilize library resources. Bhatti (2003) affirms that library and information skills tend

to improve when those skills are course related. The benefit is that students may be led to earn high grades as they will know how to find relevant and suitable information resources to support their research papers, projects, proposals and their assignments. It is the opinion of scholars that the ability to use library resources to identify, access and retrieve information is essential to the successful completion of a university education. According to Mangla (1980), library user education should be properly designed to equip the student with knowledge and techniques to handle the immediate information systems in an efficient manner; and to develop programmes, procedures and services on modern lines in future where the use of various modern technique and information technologies abound which provide better, quicker and efficient service.

Concept of Multimedia Instructional Resources

In the world that is saturated with advances in Information Communication Technologies, effective teaching and learning is almost impossible without application of various ICT based instructional resources. In the modern day educational environment efforts are made in the application various ICTs in teaching and learning in order to meet the demands of the information age. The first consideration has been domiciled on which instructional materials can create effective teaching impression and effect on the students. Multimedia has the potential and would prove to be one of the powerful tools that could assist library user educators to enhancing their professional capacity and also enable the student and users achieve their educational and information goals. Multimedia Instructional resources are used in this study to mean combination of different instructional resources to mechanize the methods, procedures and routines used to present information or knowledge. Multimedia instructional tools are designed and developed for the purpose of making instructional delivery effective. According to Nwangwu and Obi (2014), multimedia instructional resources aid instructors in conveying information easily to students and facilitate clear understanding of concepts as well as capturing students' interest and attention throughout the duration of instructional activity. The dynamic nature of the library user education precipitated the need for the instructors to remain flexible and adaptable to change in the way in which teaching is delivered.

Multimedia technologies evolved to become the most highly employed instructional resources used across the globe for effective teaching and learning due to its rich combination of text, graphics, audio, video and animation in the transmission of information or knowledge.
A UNESCO prime goal in education which is to make quality education more accessible for all is being attained with the use of multimedia instructional technologies in classroom activities. UNESCO (1998) opines that priorities of national policies should be on improving education

through technological innovations in teaching and learning. One of the ways in which such goals would be attained is by adopting instructional multimedia technologies in education. This will facilitate advancement and improvement in education especially, in Library and Information Science. According to Igwe (2005), information technologies like multimedia enhance the quality of teaching, learning, research activities and sharing of knowledge and information. Haddad and Araxler (2002) confirms that multimedia technologies contribute to effective learning through expanding access, promoting efficiency, improving the quality of learning, enhancing the quality of teaching and improving the management systems. Multimedia technologies not only provide opportunities to work with distance learning and achieve a closer collaboration among students, instructors and universities; it also paves the way for new pedagogical approach where students should be able to communicate, create presentations in power points, interact with colleagues and teachers.

Since emergence of multimedia technologies in higher education, there are significant changes in the way education is being conducted. As a matter of fact, traditional method of instruction in Nigerian educational system seems not to be effective anymore as students of the contemporary era have been so apprehended by the invisible hands of the information age. Multimedia technology has broken a new ground to mitigate the lapses that have been inherent in traditional teaching instructional modes and provides students with variety of learning options. Ogunbote and Adesoye (2006) posit that multimedia technology adds new dimension to learning experiences because concepts could easily be presented and comprehended when the words are accompanied with images and animations. Furthermore, they state that learners have more retentive memory when a variety of senses are engaged in learning; and the intensity of the experience sift from instruction aids retention and recall by engaging social, emotional and intellectual senses

Over the years, attempts have been made to define multimedia technologies. In various occasions, some authors refer multimedia as follows: audio-visual technologies, hypermedia, courseware, Intelligent Tutoring Systems and so on. Though these terms are sometimes used interchangeably, they are different. However, what is common among them is that they refer to an organized combination of various information resources used to communicate knowledge or for instructional delivery. Nwangwu and Obi (2014) stress that instructional multimedia is one of the several technologies which have been found useful in teaching and learning in schools. Instructional multimedia technologies are various media that combined together to form a single medium of instruction which is facilitated through the use of the computer (National Open University of Nigeria, 2006). This form of technologies combines texts, graphics, animations,

video, sound and other virtual effects for the purpose of presenting information. In other words, multimedia can be viewed as a learning tool and a means of communication used to foster learning subject matters and cross-curricular topics with the use of other technological facilities.

Surjono (2015) quoting Singh defines multimedia as a combination of text, graphics, animation, pictures, video, and sound to present information in a coherent manner. Multimedia can also be defined as integrated computer-driven interactive communication system which creates stores, transmits, and receives textual, graphic and auditory networks of information. According to Heinich (1997), multimedia is an exciting combination of computer hardware and software that allow users to integrate video, animation, audio, graphics, and text resources to develop effective presentations on an affordable desktop computer. Answers Corporation (2012) opines that multimedia involves synergistic union of digital video, audio, computers, and information and telecommunication technologies. Answers Corporation further states that multimedia application involves both the hardware and software used to create and run the systems afore mentioned. Multimedia software is an application that involves written instruction that directs the activities of the hardware system. While Multimedia hardware, on its own part simply involves the physical attributes of the computer system that execute the written instruction. The above mentioned multimedia application software and hardware are veritable tools for animation creation, graphic/image editing, audio editing, textual formatting, media maintenance and development. The use of multimedia computer based learning facilitates learning and enhances easy comprehension of concepts. According to Surjono (2015), the use of multimedia in a computer based learning increases students' understanding with particular subject materials. Multimedia learning occurs when students build mental representation from words, pictures and voices that presented to them (Mayer, 2003).

Studies show that integration of various forms of instructional resources such as graphics/ image, video, animation, audio and text in order to makes presentation of information more effective. With the above emphasis based on the merit of instructional multimedia technologies in education, Library and Information Science education can tap from this technological breakthroughs to create a dynamic and sound classroom atmosphere that enhance long lasting teaching and learning experience.

Bent and brink (2013) strengthen the belief that instructional multimedia technologies in teaching and learning has the capacity to create a well-structured, disciplinary, interdisciplinary and daily-life-oriented system of flexible and usable competencies, abilities, skills and content knowledge, transfer meaningful and understood knowledge into applicable knowledge and also enable students to be experts of their own learning processes. Consequently, reflection and Meta

cognition of learning processes support the construction of meaningful and understood knowledge as well as applicable knowledge. Despite the significance of multimedia technology in teaching and learning, many institution of learning have not fully deployed these emerging technologies.

There are several components of instructional multimedia resources used in teaching and learning. Whatsoever medium a course content is presented, be it through TV, CD Rom, computers, the Internet, email, blogs and audio player, PowerPoint, videos tape, DVD's or VCD's, projector, transparency, smart boards etc., instructional multimedia involves any of the following components surveyed in this study which include audio resources, graphic and image resources, video resources, animation resources and textual resources.

Audio resources are indispensable media in a multimedia presentation. The use of audio resources in teaching and learning cannot be over emphasized for effective instructional delivery. Nwangwu and Obi (2014) opines that audio clip for multimedia instruction could be a voice narration of text, graphics, video, or animation; background music; or any other sound file indicating an error, an action or prompt, a directive, etc. Audio component of multimedia has been found useful in teaching and learning in education. According to Uzuegbu, Mbadiwe and Anunobi (2013), the use of instructional materials like audio makes teaching and learning easy and interesting. Audio could be music, speech or any other sound that the computer converts from analog sound/waves into a digital format. Sound helps in providing an additional element to multimedia. This is because there are times when it is important to let users hear the actual sound or sounds from a person or event.

Graphics and images have been so resourceful in engaging human attention especially in teaching and learning. According to Nwangwu and Obi (2014), graphics or images are digital representation of non-textual information such as drawings, charts, or photographs. Graphics and images constitute a vital element in multimedia which plays an important role in the learning process and worth more than a thousand words. It went further to assert that graphics are most useful when there is a need to illustrate something or compare information. In Library and Information Science, illustrations are unavoidable which make multimedia graphic/image effective instructional tool to be employed. The richness of multimedia and the effective communication are through graphic presentation (Reddi and Mishra, 2003).

Instructional video resources are effective tools through which practical and abstract concept in Library and information Science could be demonstrated. According to Madu and Nwangwu (2014), instructional video is an integration of text, audio, static and motion pictures for presentation of information. Technical services in the library can effectively be demonstrated

with the use of instructional video resources. Madu and Nwangwu (2014) assert that instructional video resources provide aural and visual stimuli as well as motion thereby making possible a more realistic presentation of event, situation, and phenomenon. They further opine that video can be used to demonstrate the process of skill development and facilitate practical skills acquisition. The use of multimedia video package in Library and Information Science education would enhance students' performance, stimulates interest of the students and enthusiasm of the instructors. Furthermore, video simplifies and gives clarity to explanations than talking and provides a cognitive "bridge" between abstraction and reality to student.

Another vital component of multimedia is animation. Instructional animation resources include a still image or object moving sequentially on projected presentation. Nwangwu and Obi (2014) defines animation as an illusion of movement created by sequentially playing still image frames with different movements. They further stressed that animation is usually used to portray things and object that are often not possible in the real word. As a vital instructional tool, instructional animation could be very useful in library user education especial in the area where illustrations are needed on how certain information resources are used. Animation takes users to the scene and allows them to experience an event for themselves. The most common and flexible component of multimedia in presenting information is text. According to Course Technology (2001), text is perhaps the easiest of all multimedia elements to manipulate. Text in multimedia can express specific information, or it can act as reinforcement for information contained in other media items. Textual resources include characters, words, sentences, paragraphs and information.

Potentials of Multimedia Technologies

There has been conspicuous transformation in educational system in the area of knowledge presentation and the way in which students learn as a result of advances in Information Communication technologies. The advent of instructional multimedia technologies in education has brought a lasting effect on the classroom teaching-learning situation and beyond. Such technological breakthroughs, which include all networked and non-networked; projected and non-projected, visual, auditory, and audio-visual electronic resources are important landmarks in knowledge transfer which as well has the potential to transform library and information science education in Nigeria. Instructional multimedia resources are tools capable of actualizing the primary and fundamental objectives of the universities especially the development of intellectual horizon of individual for easy access and understanding of concepts.

Mohler (2001) posits that multimedia draws upon more than one of the five human senses, utilizing the two fundamental senses vital for information reception – sight and sound. Due to motion and sound in multimedia, student's attention, interest and motivation in the process are captured. Studies indicate that computer-based multimedia can improve learning and retention of material presented during a class session or individual study period, as compared to "traditional" lectures or study materials that do not use multimedia (Bagui, 1998; Kozma, 1994; Mayer, 2001). The potential of multimedia learning, according to Mayer (2003) is that students learn more deeply from well-designed multimedia messages consisting of words and pictures than from traditional modes of communication involving only words. Oshinaike and Adekunmisi (2011) opine that the power of multimedia is based on its multi-sensory, stimulating the many senses of the audience. Due to the engagement of different sensory organs in the computer controlled learning process multimedia system holds more promise to effective instructional delivery therefore, arouses the interest of the audience to learn. Studies revealed that student satisfaction and motivation is higher in courses taught with the use of multimedia technologies (Astleitner and Wiesner, 2004). Multimedia technologies motivate students to participate in the classroom learning experience.   .

Multimedia makes teaching interesting and more productive in terms of knowledge retention and transfer. Every field of study enjoys the rich potentials of multimedia in teaching and learning. To this effect, Patel (2013) states that multimedia technologies stimulate of Students' Interest in learning. However, since the traditional teaching methods and environment in education are not meeting the demands of the information age, multimedia technologies containing some forms of audio, video, animation and other technological effects naturally and humanely provides students with more interesting atmosphere for learning. Besides, multimedia technologies offer students a sense of reality, stimulate students' interest and motivate them to be actively involved in class activities. Multimedia technologies increase students' passion in studies especially the technical and abstract courses.

In library user education, Patel (2013) opines that multimedia technologies have the capacity to improve teaching effect, facilitate teaching content, make the best of class time, break the "teacher centered" teaching pattern and fundamentally improve class efficiency. Due to class complexities, it is difficult for the students to have effective teacher-students interaction. The use of multimedia audio resources facilitates the individualized and co-operative teaching. The traditional teaching model mainly emphasized on teachers' instruction and the information provided is limited due to traditional class platform. On the contrary, multimedia technologies go beyond time and space and create more vivid, visual and authentic environment for learning,

stimulates students' initiatives and economizes class time perhaps increases class information dissemination.

According to Patel (2013), multimedia instructional resources promote students' communication skill. Traditional teaching has hampered students' capacity to comprehend certain terminologies therefore making students passive recipients of knowledge. Terminologies abound in Library user education but with multimedia technologies students can get a better understanding of the structure, function and use of such terminologies. Instructional multimedia technologies have become one of the most effective tools in training and promoting effective communication skills among students

Multimedia has the capacity to improving teachers and student's relationship or interaction and bridges the gap between the teacher and students (Patel, 2013). It enhances teacher-students relationship and interaction. One of the sole roles of multimedia teaching is to train and improve students' ability to listen and speak, and to develop their communicative competence. During this process, the teacher's role as a facilitator is particularly more prominent. Utilization of multimedia in teaching and learning library and information science education would create a good platform for the exchange of information between lecturers and students, while at the same time provide a language environment that improves on the traditional classroom teaching model. In this way, cordial relationship and interaction between teachers and students improves.

Multimedia instructional technologies make teaching flexible. It creates impression not only in the classroom, but also after class. Multimedia technologies offer opportunities for students to have access to view avalanche information resources and their uses as displayed on the screen. Students can also exploit multimedia technology to their advantage, such as manipulating the network to contact teachers, and receiving answers by email or other multimedia collaboration learning platform (Patel, 2013).

Patel (2013) posits that utilization of instructional multimedia technologies in teaching and learning creates a lively and interesting learning environment. It has advantage of visibility and liveliness. During the process of teaching, multimedia audio and pictures can be set together, which enhances the initiative of both teachers and students. Teachers use multimedia pictures and images to enrich the content of classes and also imagine different contexts. In the process of producing teaching courseware, students in the class can use multimedia to understand the class in a clearer way. Apparently, using instructional multimedia in education is effective method of nurturing students' interest in learning complex courses and also enhancing teachers' interest in teaching effectively. Ahmed (2013) opines that through Multimedia and network technologies

students could be offered not only rich, sources of authentic learning materials, but also an attractive and a friendly interface vivid pictures and pleasant sounds, which to a large extent overcome language difficulties.

Challenges Associated with Utilizing Multimedia Instructional Resources in Nigerian Universities

Challenges associated with utilizing multimedia instructional resources in teaching and learning are common among universities in developing countries, particularly, those in Nigeria. Multimedia courseware is relatively more costly than traditional instructional resources. Considering the high cost of acquiring multimedia facilities and the poor funding capacities of the university, the management authorities of the university are left with no option than to resort to low cost traditional method.

One the other hand, lack of adequate requisite skills in the use of multimedia technologies is a big concern. The inability of instructors to make effective use of emerging instructional tools due to incompetency poses great concern for the university library trying to adopt multimedia technologies in library user education. According to Bent and Brink (2013) lack of multimedia application skills of teachers and students could affect the effective adoption of multimedia in education, especially that of library user education.

Over the years, many university libraries, especially those in developing countries like Nigeria have suffered poor funding. No much effort is made by the government to properly fund education. For the efficient running of any library, there is need for adequate funding. Multimedia facilities require adequate funding to be acquired but there is little or no fund to acquire such modern facilities for the smooth running of the library. University library always complain of inadequate funds to train their staff on how best to develop and handle modern facilities needed for the multimedia presentation. This poses a great danger for university library trying to adopt multimedia technologies in user instruction programmes. According to Edegbo (2011), poor funding is the root of all the problems facing libraries in Nigeria. University libraries in Africa are constrained by poor funding. For as long as funding does not improve appreciably, the present unsatisfactory situation in the library user education is unlikely to change for the better (Alemna, 1994; Zakari, 2000 and Minishi ¨Majanja, 2007) .

This is also another discouraging factor that may hinder the adoption multimedia technology in library user education which is poor power supply. This is a serious factor in Nigerian universities. Multimedia system requires steady power supply for it to be operated.

Ensuring that both instructors and students acquire ICT skills requires that they have access to appropriate multimedia hardware and software. This often involves installing and maintaining many classroom workstations accommodating sets of workstations or networked PCs (Zakari, 2000). However, a cursory look into many university classrooms in Nigeria show that a good number of them do not have functional ICT facilities. In schools where they are available, they are inadequate in terms of space and ICT facilities (Jensen, 2005; Manda, 2006).

Most universities in the developing countries lack maintenance culture. One thing is to acquire multimedia equipments and the other is the maintenance. Most university libraries find the adoption of multimedia technologies as a waste of resources. This is because the maintenance policy of such project is not guaranteed.

Similarly, Oshinaike and Adekunmisi (2011) affirm that lack of supportive infrastructures; lack of time to spend on technology, inadequate and or lack of training, inadequate fund on the part of individual lecturers and high cost of technology were the major challenges militating against the use of multimedia technologies for real life experience in teaching the students.

Enhancement Strategies for Multimedia Use in Education

In the presence of challenges to effective use of multimedia technologies in education, there are various articulated strategies that could be used to mitigate the identified problems. For instance, to cut down the cost of multimedia facilities, Oshinaike and Adekunmisi (2011) opine that the government should subsidize or reduce the tariffs on importation of multimedia facilities so that lecturers and others can afford the purchase these multimedia facilities and accessories at a cheaper rate. When the price of multimedia facilities are low, library schools would be able to acquire the facilities and thereby advance to the best practices in library and information science education by rebranding their teaching methods.

To enhance the competence of instruction librarians in the use of multimedia technology, they should be exposed to series of training and development skills in the use of these multimedia facilities. According to Oshinaike and Adekunmisi (2011), integrating the use of technology into curriculum in a purposeful and meaningful way is one of the many problems facing lecturers today. Therefore, ICT training should be given to lecturers and other members of staff in the university on integration of multimedia technologies in classroom instruction

Adequate funding of Library will go a long way in encouraging effective integration of multimedia technologies in library user education programme. Government and other relevant agencies should adequately respond to the funding needs of the Library to enable them equip

their computer laboratories with up-to-date multimedia technologies that will meet the need of the contemporary global society. Oshinaike and Adekunmisi (2011) recommend that the Nigerian government should see ICT integration effort at the university as a worthwhile project in education and should support by allocating and releasing adequate funds to invest in massive Internet connectivity, as well as purchase and installation of ICT infrastructures. Also, the university must aim to ensure accessibility, availability and reliability of ICT facilities such that every lecture room and staff offices have computers linked to Internet and equipment appropriate for accessing a range of electronic resources. If the government is not forthcoming, alternatively, the university management can solicit for both internal and external funds and support from willing individuals, philanthropists and international organizations. They can also embark on networking and partnership programmes for funds, technical supports etc but should ensure that funds or support realized are geared toward sustainability of ICT integration and application efforts.

Adequate power supply is a prerequisite in utilizing multimedia technologies. However, it is very essential that steady power supply is provided in faculties for powering multimedia system. The university should endeavour to install alternative source of power supply like inverter, standby generator or solar system. By allocating and releasing adequate funds to invest in massive Internet connectivity as well as purchase and installation of ICT infrastructures, alternative power facilities should also be acquired at the same time. Having acquired multimedia facilities and accessories needed in library user education; there should be a maintenance policy for effective management of the facilities. This strategic plan should be carried out by the university librarian with the assistance of other librarians to ensure that the facilities are well protected and appropriately handled. From time to time, the facilities should be checked to see if it would need servicing. This process will help in prolonging the lifespan and functionality of the facilities.

From the various literature searches, it is obvious that there is need for the instruction in library user education to meet the present digital society with respect to emerging multimedia technologies. In this vein, the library user education in Nigeria has to be revisited and reviewed by the various bodies concerned. It has been found that teaching in Nigeria Universities is inadequate in the application of multimedia technologies due to several challenges discussed earlier. However, teaching of library user education in Nigerian universities is generally lacking in the application of multimedia technologies (Oparah, 2006).

Multimedia instructional technologies are indispensable tools that should not be divorced from the 21st century library and information literacy instruction. With the present National

Policy on Education, it becomes imperative for Library in Nigeria to take a lead in the use of Information communication Technologies for effective instruction. ICT application is a key factor to relevance in the scheme of things in the 21st century. For Nigeria to fit properly in the digital age, the library and information science schools whose principle is to produce the right caliber of professionals must be revisited (Zakari, 2000). Instructional mode for library user education programme must be overhauled drastically if we want to retain our identity in a rapidly developing information society. The existing faculty members should be trained to cope up with the new requirements for effective library services. The Government of Nigeria should come forward through her agents to provide financial help to the library for developing essential infrastructures to provide hands on experience to the students. With the use of appropriate multimedia technologies in library user education, the crop of highly intelligent graduates would be produced, those who can contribute to the national development with intellectual capability to understand and appreciate their local and external environments. Instructional multimedia technologies are noble development worthy to be embraced in library and information science education in Nigerian universities

Methodology

The descriptive survey research design was adopted for this study. The total population of the study was 7,103 registered freshmen for the "Use of Library" course. A convenience sampling technique was used to select a sample size of 213 students. The area of the study was Kwara State, Niger State and Benue State located in the North Central region of Nigeria. Instrument for data collection was questionnaire. 213 questionnaires were distributed to the first year students registered for the "Use of Library" (user education programme). The study used frequency counts and simple percentages as statistical measures for data analysis.

Data Presentation and Analysis

A total of 213 copies of the questionnaire were distributed to the undergraduate students that offered the use of library and a total of 196 copies representing 92% were retrieved and used for the study. The data obtained from the respondents was organized and analyzed using frequency counts and simple percentages which are presented in tables as follows:

Table 1: Age Range of Respondents

S/N	AGE RANGE	FREQUENCY	PERCENTAGE (%)
1	15-24	138	70.41%
2	25-34	39	19.90%
3	35-44	19	9.69%
4	45 and Above	-	-
	Total	**196**	**100**

Table 2: Faculties of Respondents

S/N	AGE RANGE	FREQUENCY	PERCENTAGE (%)
1	Agricultural science	21	10.7%
2	Arts	23	11.7%
3	Biological Sciences	15	7.7%
4	Education	30	15.3%
5	Engineering	22	11.2%
6	Pharmaceutical Science	19	9.7%
7	Physical Sciences	21	10.7%
8	Social Sciences	33	16.8%
9	Medical Sciences	12	6.1%
	Total	**196**	**100%**

The data presented in Table 1 shows that majority of the library user education students (about 70.41%) fall between the ages of 15 – 24. Lesser percentage of respondents falls within the age range of 25 – 34 at 19.90% and 35 – 44 at 9.69%. In addition, data from table also shows that most of the library user education students are from the faculties of Social Science, Education and Arts who occupy 16.8%%, 15.3% and 11.7% respectively as against students of the faculties of Engineering (11.2%), Agriculture (10.7%), Physical sciences (10.7%), Pharmaceutical Science (9.7%), Biological Sciences (7.7%) and Medical Sciences (6.1%).

Table 3: What is the extent of use of multimedia instructional resources in library user education programme in universities in North-Central, Nigeria?

Responses	No. of Respondents	Percentages (%)
Very Great Extent	11	5.6%
Great Extent	22	11.2%
Low Extent	90	45.9%
Not At All	73	37.2%
Total	**196**	**100%**

The data presented in Table 3 shows the extent of use of multimedia instructional resources in library user education programme in universities in North-Central, Nigeria which include: Very Great Extent (5.6%), Great Extent (11.2%), Low Extent (45.9%) and Not At All (37.2%).

Table 4: What is the extent to which multimedia instructional resources enhance library user education programme in universities in North Central Nigeria?

Responses	No. of Respondents	Percentages (%)
Very Great Extent	69	35.2%
Great Extent	54	27.6%
Low Extent	39	19.9%
Not At All	34	17.3%
Total	**196**	**100%**

The data presented in Table 4 shows the extent to which multimedia instructional resources enhance library user education programme in universities in North Central Nigeria. Analysis reveals that multimedia enhances library user education to a Very Great Extent at 35.2%, Great Extent 27.6%), Low Extent (19.9%) and Not At All (17.3%).

Table 5: What are the challenges associated with the use of multimedia in user education programme in universities in North-Central, Nigeria?

S/N	ITEMS	No.of Respondents	Percentages (%)
1	Inadequate Power Supply	44	22.4%
2	Poor funding of Library	37	18.9%
3	Lack of competence in the use of multimedia Technology	25	12.8%
4	High cost of multimedia facilities	39	19.9%
5	Lack of ICT infrastructure	30	15.3%
6	Lack of maintenance culture	21	10.7%
	Total	**196**	**100%**

The data presented in Table 5 shows the challenges associated with the use of multimedia in user education programme in universities in North-Central, Nigeria. These include: Inadequate power Supply (22.4%), poor funding of Library (18.9%), lack of competence in the use of multimedia

Technology (12.8%), high cost of multimedia facilities (19.9), lack of ICT infrastructure (15.3%) and lack of maintenance culture (10.7%)

Table 6: What are the strategies for enhancing the use of multimedia resources in user education programme in universities in North-Central, Nigeria?

S/N	ITEMS	No. of Respondents	Percentages (%)
1	There should be adequate power supply if multimedia must be adequately utilized	45	23.0%
2	There should be adequate funding of library services by the government and other agencies	34	17.3%
3	The user education instructors should be trained in the use of multimedia resources	30	15.3%
4	The government should subsidize or reduce the tariffs on importation of multimedia resources	30	15.3%
5	There should be provision of relevant ICT Infrastructures	36	18.4%
6	There should be a maintenance policy for effective management of multimedia resources	21	10.7%
	Total	**196**	**100**

Table 6 show the strategies for enhancing the use of multimedia resources in user education programme in universities in North-Central, Nigeria which include that there should be adequate power supply if multimedia must be adequately utilized (23.0%), there should be adequate funding of library services by the government and other agencies (17.3%), the user education instructors should be trained in the use of multimedia resources (15.3%), there should be a maintenance policy for effective management of multimedia resources (15.3%), there should be provision of relevant ICT infrastructures (18.4%) and that the government should subsidize or reduce the tariffs on importation of multimedia resources (10.7%).

Discussion of findings

The extent of use of multimedia instructional resources in library user education programme in universities in North-Central, Nigeria

From the data collected and analyzed, it was found that multimedia instructional resources are utilized in library user education programme in universities in North-Central, Nigeria, to a low extent. This finding related to findings by Bent and Brint (2013) who assert that despite the significance of multimedia technology in teaching and learning, many academic institutions have not fully deployed these emerging technologies.

The extent to which multimedia instructional resources enhance library user education programme in universities in North-Central, Nigeria

The analyzed data shows that multimedia instructional resources enhance library user education programme to a very great extent. This finding is in line with Patel (2013) who posits that multimedia instructional resources have the capacity to improve teaching effect, facilitate teaching content, make the best of class time, break the "teacher centered" teaching pattern and fundamentally improve class efficiency; promotes communication skill; improves teachers and student's relationship or interaction and bridges the gap between the teacher and students; make teaching and learning flexible and creates a lively and interesting learning environment.

Challenges associated with the use of multimedia library in user education programme in universities in North-Central, Nigeria

From the data collected and analyzed, it was found that the major challenges with the use of multimedia in library user education programme are inadequate power supply, poor funding of library, high cost of multimedia facilities, lack of ICT infrastructure and lack of competence in the use of multimedia technology. This finding is in agreement with Edegbo (2011) who opines that poor funding is the root of all the problems facing libraries in Nigeria. In regards to poor power supply and similar challenges, Oshinaike and Adekunmisi (2011) affirm that inadequate supportive infrastructures; lack of time to spend on technology, inadequate and/or lack of training, inadequate fund and high cost of technology are the major challenges militating against the use of multimedia technologies for real life experience in teaching the students.

Strategies for enhancing the use of multimedia resources in user education programme in universities in North-Central, Nigeria.

The data collected and analyzed revealed the strategies for enhancing the use of multimedia resources in user education programme in universities in North-Central, Nigeria. Data shows that there should be adequate power supply if multimedia must be adequately utilized; there should be provision of relevant ICT infrastructures; there should be adequate funding of library services by the government and other agencies; the user education instructors should be trained in the use of multimedia resources and that the government should subsidize or reduce the tariffs on importation of multimedia resources. The findings are in line with

Oshinaike and Adekunmisi (2011) who recommend that the Nigerian government should see ICT integration effort at the university as a worthwhile project in education and should support by allocating and releasing adequate funds to invest in massive Internet connectivity, as well as purchase and installation of ICT infrastructures. Also, the university must aim to ensure accessibility, availability and reliability of ICT facilities such that every lecture room and staff offices have computers linked to Internet and equipment appropriate for accessing a range of electronic resources. They also opine that the government should subsidize or reduce the tariffs on importation of multimedia facilities so that lecturers and others can afford the purchase these multimedia facilities and accessories at a cheaper rate. When the price of multimedia facilities are low, libraries would be able to acquire the facilities and thereby advance to the best practices in education by rebranding their teaching methods.

Implications of the study

This study has serious implications for academic libraries in Nigerian as the use of multimedia technologies in library user education programme in universities is at the barest minimum. This shows that Nigeria has miles to cover in technology and educational innovations as to catch up with the developed countries that have gone far in ICT. In addition, this study has implications for the following groups:

Implications for the University and Library Management

The university management and librarians will benefit from this research by identifying the importance of multimedia instructional resources in library user education programme which will promote effective use of the library thereby meeting the objectives of the library and university.

Implications for Students and other Users

Students will equally benefit from this study as the findings of this study can be used as a guideline by both the university library and the university administration in the provision of functional, efficient and effective multimedia facilities, resources and that would be used in enhancing information literacy skills of the students/users through library user education programme.

Implications for Researchers and Librarians

Researchers and librarians will benefit from this study as it would serve as a basis for enhancing further research works on library user education programme.

Conclusion

Based on the findings of this study, it was concluded that multimedia instructional resources are not effectively utilized in library user education programmes in universities in North-Central, Nigeria. However, the students admitted that multimedia instructional resources are very resourceful in their learning other than the conventional instructional mode. This could be attributed to the fact that multimedia instructional resources improve teaching effect, facilitate teaching content, make the best of class time, break the "teacher centered" teaching pattern and fundamentally improve class efficiency; promotes communication skill; improves teachers and student's relationship or interaction and bridges the gap between the teacher and students; make teaching and learning flexible and creates a lively and interesting learning environment. Although some challenges militate against effective use of multimedia in library user education as portrayed by the analysis which include inadequate power supply, poor funding of library, high cost of multimedia facilities, lack of ICT infrastructure and lack of competence in the use of multimedia technology. Finally, the strategies for enhancing the use of multimedia technologies in library user education were identified such as there should be adequate power supply if multimedia must be adequately utilized; there should be provision of relevant ICT infrastructures; there should be adequate funding of library services by the government and other agencies; the user education instructors should be trained in the use of multimedia resources and that the government should subsidize or reduce the tariffs on importation of multimedia resources.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Multimedia instructional technologies should be adopted by the universities in Nigeria as a common mode of instruction in library user education programme such as the use of library, library orientation, information literacy, library instruction and other aspects of user education programme. This will help to enhance students' understanding of various library concepts, resources and services and make them independent proficient users of library.

2. Librarians should continuously review the library user education programme and information literacy skills of users/students as this evaluation will ultimately reveal the exact multimedia instructional resources that would be employed in user education

programme at any point in time. Librarians must keep in mind that multimedia instructional technologies are meant to assist them and not to totally replace them or render them useless. In other words, the center of attention should still remain on the students/users and not the technology.

References

Adeniyi, O. (2000) Use of library automation software packages at the Kenneth Dike Main Library, University of Ibadan In Ajibade, B. and Tiamiyu, M. ed. *Library automation for the information age: Concepts technologies and strategies.* Ibadan: Centre for Leveraging Information for Productivity, 94.

Aguolu, C.C and Aguolu, I.E. (2002). *Libraries and Information management in Nigeria: Seminal essays on Themes and Problems*. Ed-Linform services, Maiduguri.

Ahmed, A.O. (2012). Modern Trends in Library and Information Science Education in Nigeria: Challenges and the Way Forward. *Library Philosophy and Practice*. Retrieved from http://digitalcommons.unl.edu/libphilprac

Aina (2004). *Library and Information Science text for Africa*. Ibadan: Third World information Services Limited

Akibode, R. O. (1996) University library services and information needs of students and staff in an academic community *Le Professor* 4, 41.

Alemma, A.A (1994). Persistent issues in library and information science education in Africa. *Education for Information 12*: 42-436.

Anyim, W. O. (2017). Improving Reference Services in Federal University Libraries in Southeast Nigeria Using Interpersonal Communication Mechanism. *Review of Information Science and Technology Journal* , 2 (1), pp. 27-38.

Haddad, W.D., & Araxler, A (2002). *Technologies for education: Potentials, parameters, and prospects*. Paris: UNESCO.

Azubuike, C. G. (2001) The importance of library in education. In K. Azubuike. *et al*, *Fundamentals* of *Library and Information Services.* Awka: NEPAJ Publishers.

Astleitner, H., and Wiesner, C. (2004). An integrated model of multimedia learning   and motivation. *Journal of Educational Multimedia and Hypermedia, 13 (1), 3-21.*

Bagui, S. (1998). Reasons for increased learning using multimedia. *Journal of   Educational Multimedia and Hypermedia, 7*(1), 3–18.

Bhatti (2003) *Library skills: information literacy and librarianship.* Jugsaw: Delhi, 24

Bent, B.A. & Brink, K.V.D (2013). Multimedia in Education Curriculum. Moscow: UNESCO Institute for Information Technologies in Education

Course Technology (2001). Multimedia Elements—Text and Graphics

Edegbo, W. I. (2011). Curriculum Development in Library and Information Science Education in Nigerian Universities: Issues and Prospects. *Library Philosophy and Practice (e-journal).* Paper 560. http://digitalcommons.unl.edu/libphilprac/560

Harrod's Librarianship Glossary and Reference Book (2000) 9th ed. London: Gower, 757.

Heinich, P. (1997). *Practical guidelines for creating instructional multimedia applications*: Forth Worth:Dryden Press.

Ifidon, B. I. (1998).The challenges and frustrations of developing research collections in Nigerian university libraries. *Gateway Library Journal* 1 (2), 63.

Igwe, U.O. (2005). Harnessing Information Technology for the 21st Century: Library Education in Nigeria. *Library Philosophy and Practice, 7*(2), 1-7.

Issa, A.O. (2009). *Fundamentals of library and information science*. Ilorin: Ilorin Publisher

James, F. C. (2010) Information literacy. *http//www.informationliteracy- home.htm.* Retrieved 12/04/2018

Jensen, M. (2005). The African experience building both supply and demand: A presentation at the InfoDev workshop, March 14, 2005 at the World Bank Office, Paris.

Joch, B. K. (2009). Basic library skills. *http://www.basiclibraryskills.htm.* Retrieved 25/04/2018

Kozma, R. (1991). Learning with media. *Review of Educational Research, 61,179-211.*

Madu, B. & Nwangwu, E.C (2014). Effect of multimedia video instruction Secondary School students' achievement in harrowing and rigging in agriculture. *International Journal of Education Research. 13 (1): 285-287.*

Manda, P.A. (2006). State of ICTs in LIS curriculum in Tanzania. A paper presented at the IFLA workshop on integrating ICTs in LIS curriculum in Africa. 21-23 November 2006 at Safari Court Hotel, Windhoek Namibai.

Mangla, P.B (1980). Contents and courses at the postgraduate level. *Journal of Library and Information Science 5*(2). p.102

Mayer, R. E. (2001). *Multimedia learning*, Cambridge: Cambridge University Press.

Mayer, R.E. (2003). The promise of multimedia learning: using the instructional I design methods across different media. *Learning and Instruction.13: 125- 139*

Mchombu, K.J. (1991). Which way African Librarianship? *IFLA Journal*, 17 (1), 26-38)

Minishi-Majanja, M. K. (2007). *Integration of ICTs in Library and Information Science Education in Sub-Saharan Africa*. A paper presented at IFLA General Conference and Council, p. 2.

Mohler, J.L. (2001). Using Interactive Multimedia Technologies to Improve Student Understanding of Spatially-Dependent Engineering Concepts. *Grahpicon*.

National Open University of Nigeria (2006). Multimedia Technology in Teaching and Learning. Keywords and Concept in Multimedia. Retrieved from http://nou.eu.ng/noun/National Open University_OCL/pdf2/EDT%20728%20MAIN.pdf

Nna-Etuk, G, M. (2003) The concept of users education: the role of stakeholders in Nigerian universities. *African journal of education and information management,* 5(1) 89 - 99.Nwalo,

Nwokocha, U. (2012). *Assessment of library user education programmes in Abia State University and Federal University of Technology, Owerri*. Unpublished Ph.D dissertation submitted to the Department of Library and Information Science, University of Nigeria.

K.I.N. (2000). Collaboration in the provision and utilization of IT facilities for library and information science education in Nigeria. In: *Information Technology in library and information science education in Nigeria*. pp. 32-41.

Nwangwu, E.C & Obi, C.A. (2014). Editing and animation creation skills possessed by computer education lecturers for effective instructional delivery in Colleges of Education in Southeast zone of Nigeria. *International Journal of Educational Research. 13(1):236-239.*

Ogunbote, K.O. and Adesoye, A.E. (2006). Quality assurance in Nigerian academic libraries networked multimedia services. *Journal of Library andInformation Science,* Vol. 3. No. 1 & 2 pp. 100-111.

Onaolapo-Akinbode, R.O (2002) Readers' services in libraries in Madu, E.C. and Dirisu, M.B. ed *Information science and technology for library schools in Africa.* Ibadan: Evicoleman Publishers, 150.

Oparah, U.N. (2006). Integration of ICT in the reference services curricula of Nigerian library and information science schools. *The Information Technologist 3*(1): 27-35.

Osagie, J.N. (2003). User Education in Tertiary Institution in Nigeria. Lagos *Journal of Library and Information Science. 1(1):32-36.*

Oshinaike, A.B and Adekunmisi, S.R. (2011). Use of Multimedia for teaching in Nigerian University System: A Case Study of University of Ibadan. *Library Philosophy and Practice. Retrieved from* http://unllib.unl.edu/LPP/

Patel, C. (2013). Use of Multimedia Technology in Teaching and Learning communication skill": An Analysis. International Journal of Advancements in Research & Technology. 2(7). Retrieved from http://www.learnerautonomy.org/mynardh

Peretomode,V.F. (2008 a). What is higher in higher education. Being the 16th inaugural lecture of the Delta State University, Abraka - 17th October, 2008.

Reddi, U.V. & Mishra, S. (2003). *Educational multimedia. A handbook for Teachers-Developers. The Commonwealth of Learning (COL)*. CEMA: New Delhi

Surjono, H.D. (2015). The effects of multimedia and learning style on student achievement in online electronics course. *The Turkish Online Journal of Educational Technology. 14(1)*

Tuckett, H. (1989). Computer literacy, information literacy and the role of the instruction librarian in coping with information illiteracy In Mensching, G. E. and Mensching, A. *Bibliographic instruction for the information age,* Arbor: Pierian Press, 21-31.

Uhegbu, A. N. (2007). *The information user: issues and themes.* Enugu: John Jacobs Classic, 69-78

Unesco (1998). Harnessing information technology for development in Africa. Available: http://www.unesco.org/education/eduprog/inf/doc/iai.html

University of Idaho (2010) Information literacy skills. B Retrieved 16/03/2010

Uzuegbu, C.P., Mbadiwe, H.C. &Anunobi, J.C. (2013). Availability and utilization of instructional materials in teaching and learning of library education in tertiary institutions in Abia state. *Wudpecker Journal of Educational Research. 2(8):111-120*

Vasanthi, M. C. (2001) The challenging environment of academic libraries: end-user education and planning strategies for libraries in India. Library philosophy and practice, 4,1

Zakari, M. (2000). Information technical education in Nigerian library and information science schools and the challenges of the digital age. In: *Information Technology in Library and Information Science Education in Nigeria:* 42-49.