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Application of Information Communication Technologies (ICT) for effective user education programme in federal university libraries in south east, Nigeria

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This work is designed to examine the application of Information and Communication Technologies (ICTs) for effective user education programmes in Federal University Libraries in South East Nigeria. The study was guided by seven research questions in line with the objectives of the study. The design adopted for this study is descriptive survey research design and all the librarians with at least first degree in librarianship who are staff of Nnamdi Azikiwe University, Awka, University of Nigeria, Nsukka and Federal University of Technology Owerri libraries made up the population of the study. The population of the study in the three libraries is 12, 52 and 32 respondents respectively. Purposive sampling technique was adopted. The sample size of the study consisted of 96 librarians. Data were collected using observation checklist and the questionnaire. The data collected were analyzed using percentages, mean, tables and frequency counts. The results show that ICT resources are available and in use for user education programmes in these federal university libraries under study. The result also shows that the methods adopted for the application of ICTs in user education programmes in the university libraries included seminar, lectures, demonstration, virtual tour, orientation, guides, etc. ICTs are applied in user education programmes of the libraries understudy to a great extent; circulation staff possessed high skills in the application of ICTs in user education programmes; ICTs contribute to a very great extent in effective user education programme in the university libraries under study. There are numerous constraints and strategies that could be employed to enhance the application of ICTs in user education programmes in the libraries under study.

Key words: Information and Communication Technologies (ICT), user education.

INTRODUCTION

The university library plays a central role in academic activities of the universities. The University libraries are concerned with the responsibility of providing information resources and services for teaching, learning and research; in line with the objective of the parent institutions. Based on this background, Edoka (2000) defined a university library as a library established, maintained and administered by a university to meet the

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needs of its students and members. University libraries in their attempt to meet the needs of their users therefore, have their goals as the promotion of the objectives of their parent institutions, which are the universities in which they are located. Edoka (2000) went further to list the following as the functions of university libraries: provision of information materials (book and non-book required for the academic programmes of the parent institution); provision of research information resources of the faculty and research students; and provision of protection and security for materials to prevent them from being stolen or mutilated. The cost of information materials is very high especially in developing nations. It is therefore very hard to replace them when mutilated or stolen and Cooperation with other libraries at appropriate levels like inter-library lending, cooperate acquisition, exchange of information resources, inter-library study facilities, joint publications and inter-change of staff for improved information services.

University libraries equally support the goals of their parent institutions through the provision of specialized information services like Selective Dissemination of Information (SDI). This is the process whereby the profiles of users are collected to enable the library to send relevant information materials to them upon request. Otherwise, in anticipation of such request and Current Awareness Services (CAS) such as a systematic display of new arrivals to attract users, book reviews, exhibition, and display of recent titles, as well as the provision of information resources or recreation for personal self-development of the users. Ogunsola (2004) described the university library as the heart of the university because it houses and maintains standard books, journals, and audio visual collections and services that are needed for all the teaching and learning process of the university community. It is indeed the only centralized location where new and emerging information technologies can be combined with knowledge resources (information) in a user-focused and service-rich environment that supports today's social and educational pattern of teaching, learning and research.

Over the years, university libraries have accepted the use of Information and Communication Technologies (ICT) facilities in collection, organization and dissemination of information. Virtually all the university libraries have adopted ICT facilities in their housekeeping operations including user education programmes. Studies have shown that user education is very vital in access and utilization of information resources in university libraries. Joseph (2005) identified the following as problems of user education programme in Nigerian academic libraries as over dependence on one day orientation programme; lack of collective curriculum for user education in Nigerian tertiary institutions; lack of examinable library institution; over concentration (on the part of librarian) on library technical services like acquisition, cataloguing and classification and shelving of

books rather than information retrieval mechanism; and the use of unqualified personnel to teach the use of library in some institutions.

Aina (2004) opined that user education is to help library users get information they desire as well as develop the skills to use the resources of the library independently and appropriately. Edoka (2000) asserts that the objective of user education is to help the user make the best use of the overall library resources. Also, it should be noted that a well-planned and implemented user education programme greatly ensures the realization of the objective. It is aimed at the following: to develop readers awareness of all the over-all information resources available to them; to develop skills necessary for retrieving required materials; to develop in-depth knowledge of materials in readers' subject areas; to develop skills in presenting bibliographic references; to develop skills required in making advanced studies and to create a positive attitude to information searching which will stimulate the user to make use of the resources available in different libraries (Akalumhe, 2006).

It is worthy of note that the essence of user education is to acquaint the library users with different services rendered by the university libraries to its clients. These services include lending services inter- library lending; referral service, reservation services, Current Awareness Service (CAS) Selective Dissemination of Information (SDI) translation service, reprographic services, among others that the users must be acquainted with through user education programme.

With the rapid development in ICTs, accessing and retrieval of information from libraries is becoming complex. Inability to find necessary information delays research or decisions. Inadequate or lack of information leads to duplication of efforts. It therefore behooves on libraries and information professionals to educate library users (students) on how to locate needed resources bearing in mind that they come from different cultural background and they have varying levels of library skills (Edem and Ocheili, 2009)

Information Communication Technology is concerned with those technologies used in handling, processing, storing and disseminating information (Aina, 2004). ICT has revolutionized information transmission and storage and has brought the globe to the doorsteps of people. It has introduced change in all spheres of life. Wole (2002) defined ICT as electronic technologies for creating, acquiring storing, processing communication and using information. It is made up of compatible hardware and software arranged to communicate information from one location to another through the inter-connectivity of networked computers. The introduction of Information Communication Technologies ICTs in libraries has made a great impact not only in acquiring organizing, managing and disseminating information but also in user education services. This impact has made Information and

Communication Technologies readily acceptable in library profession. The objective of the introduction of ICTs in library processes are as follows: to introduce new services; to accommodate increased workload; to benefit from co-operation and centralization; to introduce new services. ICT facilities are gradually being integrated into library housekeeping services. It is pertinent and obvious that if properly made available ICT facilities will not only enhance efficiency in library services but will be crucial in user education programme.

Statement of the problem

The extent of the use of library resources depends greatly upon the effectiveness and quality of the user education programme designed by the library. A comprehensive and well- organized user education programme enhances the patronage, access, use and reputation of the library. On the other hand, incomplete or poor user education programme affects the reputation of the library and create negative impression about the library to the potential users. The situation is worrisome in view of the fact that the library user education programme has grown to be an emphasized and regular practice in the library. One therefore wonders the effectiveness and use of the user education in view of all these report on the user effectiveness and incompetence in library use. It has been observed that the application of Information Communication Technology for effective user education has become a vital issue which user could measure education standard.

ICT in libraries has changed the mode of information operation, storage, dissemination, management, retrieval, storage, statistics etc. The researcher observed that most of the university libraries are still using the conventional method to facilitate the user education programme but it is not certain whether they use ICT to encourage learning in this programme. When the library user education programme is not effective, the potential users of the library will not be attracted to the library. Ultimately, it will adversely affect the funding of the library by the parent body and the government at large. In view of this, it becomes imperative to investigate factors militating against the application of ICT for effective user education programme in federal university libraries in South East Nigeria. The inadequacy of empirical studies to determine the level of application of ICT facilities for effective user education has also necessitated the decision of the researcher to embark on the study. The problem of the study can therefore be put in the form of a question: what are the benefits of ICT application for effective user education programme in federal university libraries in South East Nigeria?

Purpose of the study

The purpose of the study was to determine the use of ICT facilities for an effective user education programme in federal university libraries in South East Nigeria. The specific objectives include to:

(1) Ascertain the types of ICT facilities employed for effective user education programme in the university libraries under study.
(2) Find out methods used for the application of ICT facilities for effective user education programme.
(3) Find out the extent to which ICT facilities are applied to the user education programme for effective programme delivery.
(4) Determine the extent of ICT skills possessed by librarians for user education programme.
(5) Determine the extent to which ICT contributes to effective user education programmes in the libraries.
(6) Identify the challenges associated with the use of ICT for effective user education programme.
(7) Suggest the strategies that could enhance the application of ICT for effective user education programme in federal university libraries in South East, Nigeria.

Research questions

The study was guided by the following research questions:

(1) What are the types of ICT facilities available in the provision of effective user education programmes in the university libraries under study?
(2) What are the methods used for the application of ICT facilities for effective user education programme?
(3) To what extent are the ICT facilities applied for effective user education programme?
(4) What are the levels of ICT skills possessed by librarians for user Education programme?
(5) To what extent does ICT contribute to effective user education programmes in the libraries?
(6) What are the challenges associated with the application of ICT facilities for an effective user education programme?
(7) What are the strategies that could enhance the application of ICT for an effective user education programme in federal university libraries in South East, Nigeria?

Scope of the study

The study is limited to the application of ICT facilities for effective user education programme in federal university libraries in South East Nigeria. The study covered three selected federal university libraries such as Federal University of Technology, Owerri (FUTO), Nnamdi Azikiwe University (NAU) Awka and University of Nigeria,

Nsukka. The study is limited to Federal universities in their application of ICT facilities for effective user education programme.

LITERATURE REVIEW

Marcus and Beck (2003) studied the best method of introducing freshmen to the library in Western Australia and skills required to use it. The design of the study was descriptive survey and the instrument for data collection was questionnaire. They compared the results of an orientation tour conducted by a traditional librarian and a self-guided pleasure trip, which included unguided tour of different sections of the library using percentages as a method of data analysis. Two hundred (200) students were selected randomly from a population of 4000 students who participated in the alternate forms of orientation. They later completed identical questionnaires in which 57% of them said that they learnt in the self-guided tour as against 41% who benefited more from the guided tour while 2% of the participants were undecided. This indicated an educational advantage in the self-guided tour thereby supporting active learning theories. They stressed on the need for continuing experimentation, innovation and creativity in user education. This study is similar to the present research because they addressing user education in higher institution, but the study used students, while the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria.

Portman and Roush (2004) examined the influence of library instruction on the development of students' library skill in Hong Kong. The objective was to determine the influence of an hour of library training and orientation session on library use by college students. The design of the study was descriptive survey and the instrument for data collection was questionnaire. The study revealed that while 320 of the 500 students who participated in the orientation exercise continued to use the library, but out of this number, only 102 could locate books without assistance. This statistically significant increase in students' library use without a corresponding increase in the area of library skill development goes to support the importance of user education. They argue that there was a need to go beyond the initial library orientation for fresh students by engaging them in a 4 session of credit load course on use of library in order to sustain their interest in library use. This study is similar to the present research because it is both talking about the user education in higher institution. However, the study used student users, while the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria therefore they differ in population, area, content scope and method of data analysis.

Bem-Bura (2015) investigated students' perception of a library orientation programme in Benue State University Makurdi. The study employed a case study research design. From a sample size of 100 that was drown with the use of simple random sampling technique, data were collected, using questionnaire. Data collected were presented and analyzed with the use of frequencies and mean. The findings of the study show that students of the university benefited from the activities of the programme such as rules and regulations guiding the library and it facilities and introduction of students to the library available information resources to a very high extent. The study also reported that some students of the Benue State University Makurdi saw the library orientation programme as a programme that transmited knowledge and information search skills while others saw it as time wasting. In order to change the negative perception of students on the programme, the study recommend that time is very a crucial tool to consider in everything we do therefore more time be given to library orientation programme so that more awareness will be created by the library when the programme is organized, group in different phases etc. This study is similar to the present research because it is both talking about user education in university libraries, but the study used student users, while the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria. Therefore, they differ in population, area and content scope. The study investigated the influence of library environment and user education on undergraduates' use of the University central library at the University of Ibadan, Nigeria.

Oluyomı and Njoku (2016) investigated the influence of library environment and user Education on undergraduates' use of the University central library at the University of Ibadan, Nigeria. The study adopted the survey research design and the population consisted of 18,034 regular undergraduates in ten faculties from which a sample size of 360 respondents was selected using the proportionate, random sampling technique. The research instrument used for data collection was a self-developed questionnaire while data was analyzed using frequency distribution, percentages, mean and standard deviation together with regression and correlation analysis. The finding of the study revealed that library environment at the University of Ibadan was characterized by good library building (mean=3.75), seating arrangement (mean=3.59), availability of information resources (mean=3.54), and fair electricity supply while there was poor Internet connectivity and Wi-Fi within and outside the library (mean=2.39). Methods of delivering user education were library orientation for new students (64.3%) and use of library course (53.4%) with guided library tour. Most undergraduates used the library daily or weekly in order to study and read for examinations.

However, inadequate technological facilities to use for electronic sources (mean=2.65), and poor network/internet

connectivity to access electronic databases were some of the major challenges of using the University library.

The study found a significant relationship between the independent variables (library environment and user education) and the dependent variable (use of library) (r = 0.342, N= 322, P < 0.01); while both library environment and user education jointly and independently contributed to the use of library among the undergraduates programmes given more priority in the University library in order to sensitize more students and draw their attention to the available resources and services while the environment of the University library (both 289 internal and external) should be made more conducive to always attract the users to the library. This study is similar to the present research because it is both talking about user education in higher institution and the study used student users librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria therefore they differ in population, area, content scope and method of data analysis.

In a survey, Holister and Coe (2003) sought librarians' views on two models of library instruction – the traditional which conducts library 45 Instructions manually and modern fashion of library instruction which uses computers and other ICT tools to facilitate user education, the design of the study was descriptive survey and the instrument for data collection was questionnaire. It revealed that though the modern style is preferred to the traditional model continues to be useful and necessary in some situations. They therefore suggested a combination of modern and traditional methods of user education especially for those who may not be computer literate. This study is similar to the present research because it is both talking about the user education in higher institution and librarians' assessment of utilization of ICT for user education. But they differ in area, content scope and method of data analysis.

Uwakwe et al. (2016) examined the effect of user education on the law students' use of the library: A case study of the faculty law library Imo State University Owerri. The survey research design was used for the study while questionnaire instrument was used for data collection. The population of the study consists of all the registered users of faculty of law library. Six research questions were answered and the analysis was done using mean scores. The findings of the study reveal that Imo State University law students have understanding of the concept of user education. The study also finds out that user education programme has positively affected the law students use of the library and their academic performance. The study identified some problems that hinder effective user education as over population, lack of infrastructure, inadequate and trained personnel, lack of instructional materials, limited time allocated to the programme, unconducive environment and inadequate space. The study concludes that since the library

occupies a central place in the achievement of educational objectives of law students, and this has made user education indispensible in the library, adequate resources should be committed to the programme to ensure that its objectives are realized Based on the findings of the study, recommendations were made on how to remedy the problems. This study is similar to the present research because it is both talking about user education in university libraries, but the study used student users, while the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria. Therefore, they differ in population, area and content scope.

Ottong (2005) analyzed the library instruction programmes in three Nigerian universities to determine how they are related to students' library resources utilization. The design of the study was descriptive survey. The research employed the questionnaire approach, which was given to 300 level undergraduate students numbering 230. The result indicated that 221 of the responding students claimed knowledge about the purpose and features of the library but only 52 indicated interest in library use. On the reason for their lack of interest in library use, 183 of them claimed they did not participate in user education programme during their first year while 47 of them said they prefer to read their personal books. The researcher therefore suggested the need to redesign the library instruction programmes to meet the interest of the students. This study is similar to the present research because it is concerned with the user education in higher institution, but the study used student users. However, the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria therefore they differ in population, area, content scope and method of data analysis.

Igbo (2008) investigated the level / degree of information literacy skills possessed by students of Faculty of Education, University of Nigeria Nsukka. The design of the study was descriptive survey and the instrument for data collection was questionnaire. Data collected were analyzed using mean scores and revealed that the students scored high in the areas of identifying relevant print resources (3.56), getting information on a topic using the Internet (2.63) and citing of authors whose ideas are used. On the reverse, the students scored very low (2.37) in ability to get information using such retrieval tools as catalogues, indexes and abstracts. This situation results from lack of prerequisite skills in library use. This study is similar to the present research because it is both talking about user education in university libraries, but the study used student users, while the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria. Therefore, they differ in population, area and content scope.

Okonkwo (2005) carried out a research on the importance of user education for effective utilization of College of Education libraries in Anambra State. The design of the study was descriptive survey and the instrument for data collection was questionnaire. Data collected were analyzed using simple percentages and reported that 76.4% of respondents affirmed to the very helpful nature of user education programmes in their library use and 78.2% indicated that they had a mastery of effective library use after undergoing the programmes. The research further reveals paradoxically that on observation of the students in the library, majority of them were seen launching their search straight from the shelves without going through the library catalogue. The import of this is that the claims of student users concerning their library skills are at variance with the actual situation during library use. This study is similar to the present research because it is both talking about user education in higher institution and the study used student users librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria therefore they differ in population, area, content scope and method of data analysis.

Agosto et al. (2007) conducted a written survey of 97 female and male library users at two United States libraries. The design of the study was descriptive survey and the instrument for data collection was questionnaire. Data collected were analyzed using simple percentages. In addition to exploring gender-related variance in the reasons for which young people use the library, the survey investigated how frequently the respondents needed information relating to 12 major topic areas and how, useful they considered the library in helping them to find information relating to these topics. Largely, the results indicated no significant gender difference in the respondents' reasons for using libraries or in their frequency of information needs.

The only major gender difference was the girls' tendency to rate libraries as more useful in helping them to meet their personal information needs. This study is similar to the present research because it is both talking about user education in university libraries, but the study used student users, while the present study is on librarians' assessment of utilization of ICT for effective user education in the federal university libraries in South East, Nigeria. Therefore, they differ in population, area and content scope. From the related empirical literature reviewed so far, it is obvious that most of the studies focused on user education programme in the library in either collage, polytechnic, university or academic library as a general term for these libraries. It is believed that this work will organize most works on federal university libraries and by comparing three selected federal university libraries will be able to find out almost all library related user education programmes and will put forward better solution to them through the use of ICT facilities for effective user education programmes especially in this era of ICT.

An attempt has been made to highlight some of the views expressed by authors and experts in the area of library instruction or user education especially those opinions that have been published. One thing that has become evident is the importance of user education programme in university libraries. An Overwhelming number of authors attest to the necessity of the programme in order to ensure effective library use by patrons. It has been highlighted in the literature reviewed that there is a high possible influence of user education on utilization of library materials. Some authors argue in support of this influence while others consider library instruction a drain on library resources. Another point, which this review has raised, is the diversity of user education programmes. The type and nature of the programme vary from country to country and sometimes from library to library. While it is compulsory for all in one library, it might be based only on request in another. A number of educational programme usually influences the type and nature of the programme. Most of these studies were carried out in a college library, polytechnic library and university library but few to the best of the researchers' knowledge has addressed the present problem in any university library. It is the realization of this fact that the researcher decided to embark on this study to provide more empirical data on the application of ICT facilities for effective user education programme in federal university libraries in South East Nigeria.

METHODOLOGY

The design of the study is descriptive survey design. Nworgu (2015) defined descriptive survey design as the design in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered representatives of the entire group. This design is appropriate for this study as it tends to investigate the application of ICT facilities for effective user education programmes in federal university libraries in South East Nigeria especially UNN, NAU and FUTO libraries which are considered as representatives of other federal university libraries in South East Nigeria. The area of the study is South East Nigeria precisely in the three selected federal university libraries located in Enugu, Anambra and Imo state. South East is one of the six geopolitical zones in Nigeria. It comprised five states namely; Abia, Anambra, Ebonyi, Enugu and Imo.

The researcher chose the South East for this study because first: the area records high application and enrolment rate into the universities, especially the federal universities. This high enrolment rate creates more library users who need library user education programme especially as it concerns access and utilization of the library resources and services. Secondly, the choice of these university libraries is because they have integrated ICT facilities and resources into their core services while maintaining manual processes. The population covered all the professional librarians with first degree in librarianship, in the three federal university libraries under study. The total population of the librarians in the three university libraries is 96. The instrument that used for data collection in this study is structured questionnaire. The structured questionnaire was developed by the researcher based on the

Table 1. Observation checklist on the types of ICT resources available for user education programmes.

S/N	ICT Resources	NAU Library			UNN Library			FUTO Library			Average		
		AU	ANU	NA	AU	ANU	NA	AU	ANU	NA	AU	ANU	NA
1	Computers	✓	*	*	✓	*	*	✓	*	*	3	-	-
2	Projector	✓	*	*	✓	*	*	✓	*	*	3	-	-
3	Printer	✓	*	*	✓	*	*	✓	*	*	3	-	-
4	Scanner	✓	*	*	✓	*	*	✓	*	*	3	-	-
5	Web Cam	✓	*	*	✓	*	*	*	✓	*	2	1	-
6	Telephone Facilities	✓	*	*	✓	*	*	✓	*	*	3	-	-
7	Teleconferencing Machine	*	*	✓	*	*	✓	*	*	✓	-	-	3
8	Modem	✓	*	*	✓	*	*	✓	*	*	3	-	-
9	Wireless	✓	*	*	✓	*	*	*	✓	*	2	1	-
10	Cable	✓	*	*	✓	*	*	✓	*	*	3	-	-
11	Satellite	*	✓	*	✓	*	*	*	✓	*	1	2	-
	Total	9	1	1	10	-	1	7	3	1	9	1	1

research questions of the study and ideas from the literature review. It is made up of two parts, 1 and 2. Part 1 was used to elicit personal information about the respondents while part two seeks information on the extent of application of ICT Facilities for effective user education programmes and contains seven sections (A-F) with Sixty five items, each group containing 10, 11, 9, 10, 6, and 8 items respectively. Data collected with the questionnaire were analyzed and presented in mean score, frequencies and percentages.

RESULTS

The analysis of data generated using questionnaire and the observation checklist. Data collected are presented in line with the research questions and analyzed using simple percentages, frequencies, tables and mean.

Data in Table 1 shows the types of ICT resources available for user education in federal university libraries in South East, Nigeria. The analysis revealed that almost all the ICT resources are available in the university libraries under study. The table further revealed that web cam technology is Available and in Use (AU) in NAU and UNN libraries while in FUTO library, it is Available but Not in Use (ANU). The analysis of data in the table also revealed that the three university libraries under study do not have teleconferencing machine as such the item had 3 in its non-availability rate. In NAU library, out of the 11 ICT resources listed, 9 items were Available and in Use (AU), 1 item was Available but Not Used (ANU) while 1 item was Not Available (NA). In UNN Library, out of the 11 items listed, 10 items were available and Used (AU), while 1 item was Not Available (NA). In FUTO Library, out of the 11 items, 7 items were Available and in Use, 3 items were Available but Not Used while 1 item was Not Available. This implies that most of the ICT resources are Available and in Use for user education programmes in these federal university libraries under study.

Results in Table 2 presents the data collected on the Methods used for the application of ICT facilities for user education programme. The report shows that there is 91.5% overall acceptance of the items listed in the Table as methods adopted for the application of ICTs in user education programmes in the university libraries under study with only 8.5% rejection. These items included seminar, lectures, Demonstration, virtual Tour, Orientation, Guides, Workshops, Computer Assisted Instruction, Moodle Platform and Documentary on library. However, lectures and orientation had 100% acceptance by the respondents in each of the three university libraries. In NAU Library, 88% of the respondents ticked Yes to these 10 items as their methods of administering ICT based user education while only 12% ticked No. FUTO library recorded 93.8% Yes and 6.2% No; while UNN Library had 90.8% Yes and 9.2% No responses to these 10 items. This implies that all the items listed in Table 2 are accepted as Methods used for the application of ICT facilities for user education programme in the libraries understudy.

Data in Table 3 reveal the mean ratings of respondents on the Extent of ICT application in user education programme.

The analysis shows that ICTs are to a Very Great Extent (VGE) applied in user education programme such as effective use/access to library repositories, Instruction on user guidance, Explanation on how to Find information in the library, Organizational pattern in library and Navigating university library website while it is to a Great Extent (GE) applied in Guidance on locating web based databases, History and overview of library and library use, Lecture on library rules and regulation, Lecture on library resources and services, Using library OPAC and Instruction for searching CD-ROM in NAU, FUTO and UNN libraries. From the analyzed data, it is clear that ICTs are applied in user education programmes of the libraries under study as these mean scores are all considered as accepted because all the 11 items have average mean scores of above 2.50.

Table 2. Frequency and percentage distribution on Methods used for the application of ICT facilities for effective user education programme.

S/N	Method of application of ICT in user education	NAU Library		FUTO Library		UNN Library		Average scores	
		Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)	Yes (%)	No (%)
1	Seminar	9(90)	1(10)	25(93)	2(7)	45(94)	3(6)	79(93)	6(7)
2	Lectures	10(100)	-	27(100)	-	48(100)	-	85(100)	-
3	Demonstration	8(80)	2(20)	26(96)	1(4)	40(83)	8(17)	74(87)	11(13)
4	Virtual tour	10(100)	-	27(100)	-	46(96)	2(4)	83(98)	2(2)
5	Orientation	10(100)	-	27(100)	-	48(100)	-	85(100)	-
6	Guides	9(90)	1(10)	24(89)	3(11)	44(92)	4(8)	77(91)	8(9)
7	Workshops	9(90)	1(10)	21(78)	6(22)	41(85)	7(15)	71(84)	14(16)
8	Computer Assisted Instruction	7(70)	3(30)	25(93)	2(7)	38(79)	10(21)	70(82)	15(18)
9	Moodle Platform	9(90)	1(10)	24(89)	3(11)	46(96)	2(4)	79(93)	6(7)
10	Documentary on library	7(70)	3(30)	27(100)	-	40(83)	8(17)	74(87)	11(13)
	Total	**9(88)**	**1(12)**	**25(93.8)**	**2(6.2)**	**44(90.8)**	**4(9.2)**	**78(91.5)**	**7(8.5)**

Table 3. Mean responses on Extent to which ICT facilities are applied in user education programme.

S/N	Extent of ICT application in user education programme.	NAU Library		FUTO Library		UNN Library		Average		Decision
		$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rank	
1	Effective use/access to library repositories	3.88	VGE	3.32	GE	3.82	VGE	3.67	1st	Accepted
2	Instruction on user guidance	3.96	VGE	3.22	GE	3.79	VGE	3.65	2nd	Accepted
3	Explanation on how to Find information in the library	3.21	GE	3.98	VGE	3.41	GE	3.53	3rd	Accepted
4	Organizational pattern in library	3.85	VGE	3.56	VGE	3.12	GE	3.51	4th	Accepted
5.	Navigating university library website	3.91	VGE	3.51	VGE	3.09	GE	3.50	5th	Accepted
6	Guidance on locating web based databases	3.32	GE	3.08	GE	3.98	VGE	3.46	6th	Accepted
7	History and overview of library and library use	2.76	GE	3.09	GE	3.87	VGE	3.34	7th	Accepted
8.	Lecture on library rules and regulation	3.21	GE	3.87	GE	2.87	GE	3.31	8th	Accepted
9.	Lecture on library resources and services	2.98	GE	2.96	GE	3.12	GE	3.02	9th	Accepted
10.	Using library OPAC	3.02	GE	2.98	GE	3.07	GE	3.02	10th	Accepted
11.	Instruction for searching CD-ROM	2.56	GE	2.88	GE	3.11	GE	2.85	11th	Accepted
	Grand Mean	3.33	GE	3.63	VGE	3.38	GE	3.35		Accepted

Data in Table 4 shows the mean ratings of the respondents on the skills possessed by librarians in the application of ICTs in user education programmes.

Analysis revealed that the librarians in federal universities in South East, Nigeria Possessed (P) skills in the application of ICTs in user education with the grand mean of 3.40; NAU Library, 3.36; UNN Library and 3.43 in FUTO Library. Data in Table 4 shows that all the 9 items had an overall mean of 3.07 and above. Their skills in the use of power point in slide presentation and effective access to online databases are Highly Possessed (HP), while they Possessed (P) skills in Online navigation, taking part in online discussion or chat, use of basic Microsoft tools for example snipping tool, storing and retrieval of information, use of projector for presentation, effective use of library software and using Microsoft office packages. This implies that librarians in the federal university libraries in South East, Nigeria are Possessed (P) with skills needed in the application of ICTs for user education with the average grand mean of 3.40.

Table 5 shows the mean scores of the Extent to which ICT contributes to effective user education programmes. From the findings presented on the table, the librarians' responses in NAU Library have a grand mean of 3.13 showing that ICT contributes to effective user education programmes to a Great Extent. The findings also showed that UNN and FUTO Libraries have a grand mean score of 3.38 and 3.34 respectively, which also mean that ICT contributes to effective user education programmes largely. Findings on the table clearly showed that ICT contributes to effective user education programmes to a very great extent especially in relation to online navigation skills while it contributes to great extent in exploring search engine results quickly. It also effectively search web directories such as yahoo, Effective

Table 4. Mean responses on ICT skills possessed by librarians for user education programme.

S/N	ICT skills possessed by librarians for effective application of ICT in user education programme?	NAU Library		UNN Library		FUTO Library		Average		Decision
		$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rank	
1	Use of Power Point in slide presentation	3.90	HP	3.84	HP	3.79	HP	3.84	1st	Accepted
2	Effective access to online databases	3.78	HP	3.49	P	3.81	HP	3.69	2nd	Accepted
3	Online navigation skills	3.49	P	3.16	P	3.74	HP	3.46	3rd	Accepted
4	Taking part in online discussion or chat	3.04	P	3.96	HP	3.17	P	3.39	4th	Accepted
5	Use of some basic Microsoft tools such as snipping tool	3.01	P	3.21	P	3.90	HP	3.37	5th	Accepted
6	Storing and retrieval of information	3.89	HP	3.02	P	3.14	P	3.35	6th	Accepted
7	Use of projector for presentation	3.19	P	3.44	P	3.24	P	3.29	7th	Accepted
8	Effective use of library software	3.14	P	3.20	P	3.12	P	3.15	8th	Accepted
9	Use of Microsoft office packages	3.22	P	2.99	P	3.01	P	3.07	9th	Accepted
	Grand Mean	3.40	P	3.36	P	3.43	P	3.40		Accepted

Table 5. Mean responses on Extent to which ICT contributes to effective user education programmes in the libraries.

S/N	Extent to which ICT contributes to effective user education programmes	NAU Library		UNN Library		FUTO Library		Average		Decision
		$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rank	
1	Online navigation skills	3.65	VGE	3.97	VGE	3.10	GE	3.57	1st	Accepted
2	Explore search engine results quickly	3.08	GE	3.21	GE	3.81	VGE	3.36	2nd	Accepted
3	Effectively search web directories such as yahoo	3.12	GE	3.87	VGE	2.90	GE	3.29	3rd	Accepted
4	Effective use/access to library repository	3.02	GE	3.78	VGE	2.91	GE	3.23	4th	Accepted
5	Identify common file formats (html, txt, PDF	2.93	GE	3.20	GE	3.53	VGE	3.22	5th	Accepted
6	Effective access to online databases	3.76	VGE	3.06	GE	2.81	GE	3.21	6th	Accepted
7	Retrieving a Saved Document	3.32	GE	2.99	GE	3.24	GE	3.18	7th	Accepted
8	Storing and retrieval of information	2.69	GE	3.63	VGE	3.17	GE	3.16	8th	Accepted
9	Install and Use goggle toolbars	2.98	GE	3.09	GE	3.87	VGE	3.15	9th	Accepted
10	Use of some basic Microsoft tools such as snipping tool	2.78	GE	3.02	GE	3.06	GE	2.95	10th	Accepted
	Grand Mean	3.13	GE	3.38	GE	3.34	GE	3.23		Accepted

VGE-Very Great Extent, GE- Great Extent, LIE – Little Extent, NA-Not at all.

use/access to library repository, Identify common file formats-html, txt, PDF, Effective access to online databases, Retrieving a Saved Document, Storing and retrieval of information, Install and Use goggle toolbars, Install and Use goggle toolbars and Use of some basic Microsoft tools such as. snipping tool. This implies that most of the ICTs contribute largely in effective user education programme in the university libraries under study.

The result in Table 6 shows the mean ratings of the respondents on challenges associated with the application of ICTs for effective user education programmes in federal university libraries in South East, Nigeria. The respondents Strongly Agreed (SA) that all of the 6 items listed in the above table are challenges associated with the application of ICTs in user education programme in NAU, UNN and FUTO Libraries. Among the challenges that the respondents emphasized include lack of alternative power supply to facilitate the steady application of ICTS in user education, high cost of ict facilities, poor maintenance culture of ict facilities and lack of training and trained experts on ICTs where they Strongly Agree (SA); whereas, in poor funding/ insufficient library budget and software problems they Agree (A). Therefore, the entire population accepted that the items above are challenges associated with the application of ICT for effective user education programme in the federal university libraries understudy with the grand mean of 3.60, 3.53 and 3.47 respectively. The data shows that all the items had an overall mean of above 2.50 and are therefore acceptable as the challenges associated with the application of ICTs for effective user education programmes in federal university libraries in South East, Nigeria.

Data in Table 7 reveal the mean scores of respondents on the strategies for enhancing the application of ICTs for effective user education programmes in the federal university libraries in South East, Nigeria. From the

Table 6. Mean responses on Challenges associated with the application of ICTs for effective user education in the Library.

S/N	Challenges associated with the application of ICTs for effective user education in the Library	NAU Library		UNN Library		FUTO Library		Average		Decision
		$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rank	
1	Lack of alternative power supply to facilitate the steady application of ICTs in user education	3.44	A	3.78	SA	3.97	SA	3.73	1st	Accepted
2	High cost of ICT facilities	3.89	SA	3.98	SA	3.18	A	3.68	2nd	Accepted
3	Poor maintenance culture of ICT Facilities	3.89	SA	3.45	A	3.67	SA	3.67	3rd	Accepted
4	Lack of training and trained experts on ICTs	3.56	SA	3.65	SA	3.67	SA	3.62	4th	Accepted
5	Poor funding and insufficient library budget	3.78	SA	3.09	A	3.08	A	3.31	5th	Accepted
6	Software problems	3.09	A	3.23	A	3.29	A	3.20	6th	Accepted
	Grand Mean	**3.60**	**SA**	**3.53**	**SA**	**3.47**	**A**	**3.53**		**Accepted**

Table 7. Mean responses on the strategies for enhancing ICT application for effective user education in the federal university libraries in South East Nigeria.

S/N	Strategies that could enhance ICT application for effective user education in the federal university libraries	NAU Library		UNN Library		FUTO Library		Average		Decision
		$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rmk	$\overline{X}$	Rank	
1	Adequate funding of ICTs in the library	3.89	VA	3.07	A	3.91	VA	3.62	1st	Accepted
2	Procurement of all relevant ICT components	3.22	A	3.67	VA	3.71	VA	3.53	2nd	Accepted
3	Recruitment and training of experts in ICT	3.56	VA	3.25	A	3.54	VA	3.45	3rd	Accepted
4	Policy to regulate, guide and maintain ICT Facilities in the library	3.92	VA	3.12	A	3.32	A	3.45	4th	Accepted
5	Value re-orientation on importance of ICTs in user education	3.45	A	3.91	VA	2.98	A	3.44	5th	Accepted
6	Internet Facilities	3.87	VA	3.27	A	3.12	A	3.42	6th	Accepted
7	Provision of steady power supply to facilitate the use of ICT for user education	3.07	A	3.44	A	3.67	VA	3.39	7th	Accepted
8	Provision of quality bandwidth	3.19	A	3.70	VA	3.24	A	3.37	8th	Accepted
	Grand Mean	3.52	VA	3.42	A	3.43	A	3.45		Accepted

analysis, it shows that the respondents as appropriate strategies that can enhance the application of ICTs for user education programmes accepted all the entire items in the table. Analysis shows that the major responsibility of improving the application of ICTs for user education programmes rest on the university management and librarians. Thus, adequate funding of ICTs in the library and procurement of all relevant ICT components were accepted as a very appropriate strategies. While, recruitment and training of experts in ICT, policy to regulate, guide and maintain ICT facilities in the library, value re-orientation on importance of ICTs in user education, Internet facilities, provision of steady power supply. This is to facilitate the use of ICT for user education and provision of quality bandwidth were accepted as appropriate strategies for enhancing ICT applications for effective user education programmes in the university libraries understudy. Based on the analyzed data, the major findings of this study are that:

(i) The ICTs resources available and used for user education programmes in federal university libraries in

South East, Nigeria include computers, projectors, printers, scanners, telephone facilities, modem, wireless network, cable, satellite and web cam technology while teleconferencing machine is Not Available.
(ii) The methods used by the federal university libraries in South East, Nigeria for the application of ICT facilities for user education programme included seminar, lectures, Demonstration, virtual Tour, Orientation, Guides, Workshops, Computer Assisted Instruction, Model Platform and Documentary on library.
(iii) ICTs are to a Very Great Extent (VGE) applied in user education programme in NAU, FUTO and UNN libraries especially in effective use/access to library repositories, Instruction on user guidance, Explanation on how to Find information in the library, Organizational pattern in library, Navigating university library website, Guidance on locating web based databases, History and overview of library and library use, Lecture on library rules and regulation, Lecture on library resources and services, Using library OPAC and Instruction for searching CD-ROM.
(iv) The skills possessed by librarians in the application of

ICTs in user education programmes includes use of power point in slide presentation, effective access to online databases, Online navigation skills, taking part in online discussion or chat, use of basic Microsoft tools such as. snipping tool, storing and retrieval of information, use of projector for presentation, effective use of library software and using Microsoft office packages.

(v) ICT contributes to effective user education programmes to a very great extent especially in relation to online navigation skills, exploring search engine result quickly, Effectively search web directories such as yahoo, Effective use/access to library repository, Identify common file formats-html, txt, PDF, Effective access to online databases, Retrieving a Saved Document, Storing and retrieval of information, Install and Use goggle toolbars, Install and Use goggle toolbars and Use of some basic Microsoft tools such as. snipping tool.

(vi) The challenges associated with the application of ICTs for user education programmes are lack of alternative power supply to facilitate the steady application of ICTS in user education, high cost of ICT facilities, poor maintenance culture of ICT facilities, lack of training and trained experts on ICTs, poor funding and insufficient library budget and software problems.

(vii) the strategies for enhancing the application of ICTs for user education programmes includes adequate funding of ICTs in the library, procurement of all relevant ICT components, recruitment and training of experts in ICT, policy to regulate, guide and maintain ICT facilities in the library, value re-orientation on importance of ICTs in user education, internet facilities, provision of steady power supply to facilitate the use of ICT for user education and provision of quality bandwidth.

DISCUSSION

The findings of this study are discussed under the following subheadings based on the research questions and the objectives of the study.

Types of ICT resources available for user education programmes

Based on the findings of the present study, data from observation checklist shows that the types of ICT resources available for user education in federal university libraries in South East, Nigeria includes the following; computers, projectors, printers, scanners, telephone facilities, modem, wireless network, cable and satellite as these items had 3 in their availability. The analysis further revealed that web cam technology is Available and in Use (AU) in NAU and UNN libraries while in FUTO library, it is Available but Not in Use (ANU). This implies that most of the ICT resources are

available and in use for user education programmes in these federal university libraries under study. The finding of this study is related to Uwaifo (2010), who posits that information can be searched for by users at any time especially when the OPAC is user based, this one of the major reasons for the initiation of user education in the university libraries with the support of ICT facilities like e-mail, projectors, teleconferencing, voice over internet protocol etc are used to conduct ICT base user education in university system. Also, Bello (1998) enumerated some ICT facilities provided to the academic libraries for better library operations to include telephone, fiber optics, satellite, fax, television, microfilms, micro fiche, micro cards, facsimiles, photocopiers, microcopies, electro-copies, duplicating machine, printers, CD-ROM, computers, internet etc. The researcher is in agreement with the submissions however, he stresses that if ICTs are effectively applied in user education programmes, it will improve access and use of the university libraries by the clients.

Methods of application of ICT facilities for user education programme

The data collected on the Methods used for the application of ICT facilities for user education programmes in South East, Nigeria shows that seminar, lectures, Demonstration, virtual Tour, Orientation, Guides, Workshops, Computer Assisted Instruction, Model Platform and Documentary on library are utilized by the university libraries understudy. However, lectures and orientation had 100% acceptance by the respondents in each of the three university libraries. In NAU Library, 88% of the respondents ticked Yes to all the items as their methods of administering ICT based user education while only 12% ticked No. FUTO library recorded 93.8% Yes with 6.2% No while UNN Library had 90.8% Yes and 9.2% No responses to these 10 items. This implies that all the items listed in Table 2 are accepted as Methods used for the application of ICT facilities for user education programme in the libraries understudy. The study is related to Aina (2004) who explained that there are various methods of administering library user education programme which include one- to-one discussion session, library orientation/tours or classroom instructions. He further stressed that in one-to- one session, the reference librarian take a new user round the various sections of the library. The reference librarian explains to the user the activities of the different sections without distracting the staff in the sections. The user is also enlightened on the basic services of the library and on how to search for materials. Ogummodede and Emeahara (2010) and Utor and Agbi (2005) also reported that library orientation involves taking fresh undergraduates on a guided tour of the library, they cited the case of University of Ibadan and stressed that the

programme features events like talk, exhibition, demonstration, guided tour and so on. The researcher is of the view that this advancement in librarianship with the intervention of ICT resources will enhance the patronage of the library and as such, the utilization of library resources becomes very indispensable and necessary to the library clients.

Extent of application of ICTs in user education programme

The analysis of data shows that ICTs are to a Very Great Extent (VGE) applied in user education programme in NAU, FUTO and UNN libraries. These aspect of user education programmes were ICTs are applied include; Effective use/access to library repositories, Instruction on user guidance, Explanation on how to Find information in the library, Organizational pattern in library, Navigating university library website, Guidance on locating web based databases, History and overview of library and library use, Lecture on library rules and regulation, Lecture on library resources and services, Using library OPAC and Instruction for searching CD-ROM. From the analyzed data, it is clear that ICTs are applied in user education programmes of the libraries understudy as their mean scores are all considered as accepted because all the 11 items have average mean scores of above 2.50. The study is related with Bello (1998) who discovered that modern technologies are mostly utilized in library user education programme in university libraries because of the nature of their clients. This shows that ICTs are highly in use information profession especially in this digital age. It is the opinion of the researcher that the effect of this application of ICTs in library user education will be awareness and accessibility of library resources to the users that want them.

Skills possessed by librarians in the application of ICTs in user education programmes

The data obtained from the respondents on the skills possessed by librarians in the application of ICTs in user education programmes revealed that librarians in federal universities in South East, Nigeria are Highly Possessed (HP) with skills in the application of ICTs in user education with the grand mean of 3.40; NAU Library, 3.36; UNN Library and 3.43 in FUTO Library. Data shows that all the 9 items had an overall mean of 3.07 and above. This includes use of power point in slide presentation, effective access to online databases, online navigation skills, and taking part in online discussion or chat, use of basic Microsoft tools such as. snipping tool, storing and retrieval of information, use of projector for presentation, effective use of library software and using Microsoft office packages. This implies that librarians in

the federal university libraries in South East, Nigeria are Highly Possessed (HP) with skills needed in the application of ICTs for user education. The study is in agreement with the position of Ezeani (2010) and Ojedokun and Okafor (2011), who in their findings discovered that librarians had skills in e-mail use, word processing application and the use of search engines like Google, and yahoo. The acquisition of some of these basic skills like typing skills, web access skills, communication skills and word processing skills by the librarians in these libraries will help the library to deliver user education programme with ease, speed and accuracy.

Extent to which ICTs contribute to effective user education programmes

From the findings of the study, librarians considered the contributions of Information Communication Technology (ICT) to be very important for their self-development in delivering user education programmes. From the findings presented, the librarians' responses in NAU Library have a grand mean of 3.13 showing that ICT contributes to effective user education programmes to a Very Great Extent. The findings also showed that UNN and FUTO Libraries have a grand mean score of 3.38 and 3.34 respectively, which also mean that ICT contributes to effective user education programmes largely. Findings on the table clearly showed that ICT contributes to effective user education programmes to a very great extent especially in relation to Online navigation skills, Exploring search engine results quickly, Effectively search web directories such as yahoo, Effective use/access to library repository, Identify common file formats-html, txt, PDF, Effective access to online databases, Retrieving a Saved Document, Storing and retrieval of information, Install and Use goggle toolbars, Install and Use goggle toolbars and Use of some basic Microsoft tools such as snipping tool. The study is in consonance with, Okezie (2009) and Uwaifo (2010) who opined that with ICT, Online Access Catalogue (OPAC), library staff and users can have access or search the library collection from near or distant places without physically visiting the library Information can be searched for by users at any time especially when the OPAC is user based, this one of the major reasons for the initiation of user education in the university libraries. This implies that most of the ICTs contribute largely in effective user education programme in the university libraries and it enhances access and use of library resources by the library clienteles.

Challenges associated with the application of ICTs for user education programmes

The data generated from the questionnaire shows that

the respondents Strongly Agreed (SA) that all of the 6 items listed in the above table are challenges associated with the application of ICTs in user education programme in NAU, UNN and FUTO Libraries. Among the challenges that the respondents emphasized include Lack of alternative power supply to facilitate the steady application of ICTs in user education, High cost of ICT facilities, Poor maintenance culture of ICT Facilities, Lack of training and trained experts on ICTs, Poor funding and insufficient library budget, Software problems. Therefore, the entire population accepted that the items above are challenges associated with the application of ICT for effective user education programme in the federal university libraries understudy with the grand mean of 3.60, 3.53 and 3.47 respectively. The data shows that all the items had an overall mean of above 2.50 and are therefore acceptable as the challenges associated with the application of ICTs for effective user education programmes in federal university libraries in South East, Nigeria. Supporting this finding, Chime (2004) noted that some of the ICT resources are not yet being utilized in Nigerian university libraries due to inadequate of professionals to support them. In a similar vein, Okore (2005) was of the view that one of the greatest challenges facing the uptake of ICT resources in academic/university libraries is the burden in competences among our library staff and users. Many of our library staff and users are yet to acquire the necessary skills and competencies. Uwaifo (2010) and Oketunji in Nwachukwu, (2005) noted that, there are poor ICT skills and competencies by both library staff (personnel) and users hence it is one of the challenges facing the utilization of ICTs in the university libraries. The researcher is in agreement with the submissions however, he stresses that lack of alternative power supply, lack of training and trained experts on ICT application are the major setbacks in ICT application in user education programme in Nigerian universities.

Strategies for enhancing ICT application for user education programmes

The findings of the study show that all the items were considered very appropriate as strategies for effective utilization of ICTs in university library user education by the respondents. The analysis shows that the entire items in the table were all accepted by the respondents as Very Appropriate strategies that can enhance the application of ICTs for user education programmes. Analysis shows that the major responsibility of improving the application of ICTs for user education programmes rest on the university management and librarians thus, Adequate funding of ICTs in the library, Procurement of all relevant ICT components, Recruitment and training of experts in ICT, Policy to regulate, guide and maintain ICT Facilities in the library, Value re-orientation on importance of ICTs in user education, Internet Facilities, Provision of steady

power supply to facilitate the use of ICT for user education, Provision of quality bandwidth were accepted as the appropriate strategies for enhancing ICT applications for effective user education programmes in the university libraries understudy. This study is in line with Okezie (2009), Samuel and Abba (2009), and Ameen (2010) who emphasized more on Government involvement in providing ICTs amenities for the university libraries which eventually, will improve the application of ICT application in user education. From the above points, it is clear that steady power supply, adequate funding of library budget by the patron institution and circulation library staff should be sent for ICT training are the Strategies that could be used for enhancing the application of ICTs for effective user education programmes in user education programmes in the university libraries understudy. Based on the results obtained from this study, the following recommendations may be noted: are made:

(i) University administration should create effective ICT awareness and orientation programmes for undergraduates and post graduate both old and newly admitted students. Lectures on user education should also be incorporated into the curriculum of postgraduate students. This will arouse the awareness and knowledge of use of library among students and as well its maximum utilization resulting to their academic excellence.

(ii) Government should endeavor to provide subsidy or adequate funds for procurement of ICT facilities for university libraries to enhance automation of user education programmes through government library intervention fund.

(iii) The university management should engage the librarians in continuous ICT training through organized seminars, workshops and symposia in order to enhance their proficiency on ICT. In house ICT training and knowledge, sharing by experienced colleagues in the profession is also required for the development of the entire librarians in the university libraries under study.

(iv) It is one thing to procure ICT facilities and another thing to maintain it. Therefore, the library management and library staff should develop maintenance culture as to retain the value of the procured facilities. The conventional librarians should also be closely encouraged on how to use ICTs in user education to avoid misuse of those facilities.

(v) The University library should also explore other medium of user education to carter for the increasing number of intakes in the federal university such as university websites, use of multimedia applications and social media platform and the use of process flow in educating students on the effective use of library facilities.

Conclusion

The literature available to the researcher reveals that

ICTs are essential tools for effective user education programme in the university libraries. Based on the findings of the study, the following conclusions were made; that ICT resource are available for user education programmes in federal university libraries in South East, Nigeria and effective user education programme is essential for awareness, access and utilization of university library resources which will in turn promote a good and timely research output by the library users.

It also showed that the Methods used for the application of ICT facilities for user education programme in South East, Nigeria are seminar, lectures, Demonstration, virtual Tour, Orientation, Guides, Workshops, Computer Assisted Instruction, Model Platform and Documentary on library. However, lectures and orientation had 100% acceptance by the respondents in each of the three university libraries. The study revealed that ICTs are to a Very Great Extent (VGE) applied in user education programme in NAU, FUTO and UNN libraries. Findings of the study on the skills possessed by librarians in the application of ICTs in user education programmes revealed that librarians in federal universities in South East, Nigeria are Highly Possessed (HP) with the skills in the application of ICTs in user education and that ICTs contribute largely for effective user education programmes.

Lack of alternative power supply to facilitate the steady application of ICTs in user education, High cost of ICT facilities, Poor maintenance culture of ICT Facilities, Lack of training and trained experts on ICTs, Poor funding and insufficient library budget, Software problems were the Strategies for enhancing challenges associated with the application of ICTs for effective user education programme in federal university libraries in South East, Nigeria. While adequate funding of ICTs in the library, procurement of all relevant ICT components, recruitment and training of experts in ICT, policy to regulate, guide and maintain ICT Facilities in the library, Value re-orientation on importance of ICTs in user education, internet facilities, provision of steady power supply to facilitate the use of ICT for user education, provision of quality bandwidth were accepted as the appropriate strategies for enhancing ICT applications for effective user education programmes in the university libraries under study.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Agosto DE, Paone KL, Ipock UO (2007). The female-friendly public library: Gender differences in adolescents' uses and perceptions of US public libraries. Library Trends 1 September 22.

Aina LO (2004). Library and information science text for Africa, Ibadan: Third World Information Service.

Akawmhe R (2006). Utilization of Information and Communication Technology facilities in Nigerian University Libraries. The Information Technologist 5(2):1-6.

Bello MA (1998). Library security, material theft and mutilation in technological University libraries in Nigeria. Library Management 19(16):379-383.

Bem-Bura MD (2015) Students' perception of library orientation programme in Benue State University, Makurdi. International Journal of Innovative Research and Development 4(3):77-83

Chime CA (2004). E-learning: A great toll towards educational quality and growth in the science teacher today. The Journal of School of Science, Federal College of Education Eha-Amufu 2(1):12-17.

Edem BN, Ocheili (2009). Extent of use of information technology among librarians in selected Nigeria University libraries. Global Review of Library and Information Science 1(3):1-12

Edoka BE (2000) Introduction to library science. Onitsha: Palma Publishing and Links Company Limited.

Ezeani CN (2010). Information communication technology: An overview. in E.C. Madu and CN Ezeani (ed.). Modern library and information science for information professional in Africa pp. 9-30 Ibadan: Text link publishers.

Holister CV, Coe J (2003). Current trends vs. traditional models: librarians' view on method of library instruction. College and Undergraduate Libraries 10(2):49-63.

Igbo HU (2008). Information Literacy skills possessed by students of the Faculty of Education, University of Nigeria, Nsukka, MLS Dissertation, University of Nigeria, Nsukka.

Joseph M (2005). Encouraging user education in Nigerian academic libraries towards effective use of library resources. International Journal of Research in Education 2(1and2):24-30.

Nwachukwu VN (2005). Information technology application to libraries in developing countries. The need for caution. Global Review of Libraries and Information Science 1(1):97.

Nworgu BO (2015) Educational research: Basic issues and methodology. Nsukka: University Trust Publishers Limited.

Ogummodede TA, Emeahare EN (2010). The effect of libraries users education as a course on library patronage: A case study of LAUTHECH Library, Ogbomosho, Nigeria Library Philosophy and Practice.

Ogunshola LA (2004). Nigerian University Libraries and the challenges of Globalization: The way forward. Electronic Journal of Academic and Special Librarianship 5(2-3):1 http://southernlibrarianship.icaap.org/content/v05n02/ogunsola_l01.htm

Ojedokun AA, Okafor VN (2011). Relevance and Adequacy of IT Skills of Librarians in Southern Nigeria in the Digital and Electronic Environment in Nigeria: A Survey. Nigerian Library Association, 70p.

Okezie CE (2009). ICT availability and use in Nigerian University libraries. Global Review of Library and Information Sciences 1(1):39-51.

Okonkwo LO (2005). User Education and effective library utilization in College of Education Libraries in Anambra State. MLS Dissertation, Abia State University Uturu. p34.

Okore AM (2005). The Challenges of Information and Communication Technologies (ICT) for Nigerian Academic Libraries. Global Review of Library and Information Science 1(1):84-93.

Oluyomı F, Njoku E (2016). Influence of library environment and user education on undergraduates' use of library at the university of Ibadan, Nigeria, European Scientific Journal July 12(19):1857-7881.

Ottong EJ (2005). Library-use-instruction and information literacy competence of undergraduates in selected Nigerian Universities. A Master of Philosophy thesis, Faculty of Education, University of Ibadan.

Portman CA, Roush AJ (2004). Assessing the effects of library Instruction. Journal of Academic Librarianship 30(6):461-465.

Utor JS, Agbi (2005). The benefit of ICT in science and technology education through enhanced library services: Challenges ahead. Nigerian Journal of Library Archives and Information Science 1(4):19-25.

Uwaifo SO (2010). Information and communication technologies and library services in society. In E.C. Madu and C.N Ezeandi (ed.), modern library and information Science for Information Professional

in Africa. 233-240 Ibadan: Text links publishers.

Uwakwe BS, Onyeneke CO, Njoku IN (2016). Effect of user education on law students' use of the library: A Case Of The Faculty Of Law Library, Imo State University, Owerri, Nigeria, Information Impact: Journal of Information And Knowledge Management 7(1):70-85.

Wole OM (2002). Today's library and information communication technology (ICTS): On electronic sources in Nigerian university libraries. A discussion paper presented at the University Of Agriculture, Abeokuta, Ogun State 24th April -26 April.