
**INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) AND
STAFF CAPACITY BUILDING IN SELECTED PUBLIC
UNIVERSITIES IN NORTH CENTRAL NIGERIA.**

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Abstract

This study investigated the Role of Information and Communication Technology (ICT) on Capacity Building of Staff in some selected public Universities in the north central zone of Nigeria. The purpose of the study was to ascertain the role of e-library services, e-learning and laptops on capacity building of Staff in some selected Public Universities. Three research questions were raised to guide the study. Three hypothesis were formulated and tested at 0.05 level of significance. The design of the study was the descriptive survey design. The population of the study was all the 13784 academic staff, non-teaching and senior administrative staff in the selected public universities in the study area. The sample of the study consisted of 1,379 universities staff, nine hundred and seventy one respondents came from the federal universities while 408 were from state-owned universities. This sample was chosen through proportionate, stratified and simple random sampling techniques. Data were collected using a researcher-made structured questionnaire titled "Information and Communication Technology Staff capacity building questionnaire. (ICTSCBQ)". The ICTCBQ was subjected to a reliability analysis using croubach Alpha which yielded a reliability coefficient of 0.77. mean and standard deviation were used to answer the research questions while chi-

square (x^2) test of goodness was used to test the hypotheses. The findings of the study showed that e-learning services played a significant role in staff capacity building. There was also a significant role of e-learning platform and laptops on staff capacity building. Based on the findings, the study recommended among others that governing councils of all universities in the North Central zone of Nigeria should ensure that there is adequate provision and utilization of ICT facilities in all departments and faculties as well as all the critical administrative organizations. Faculties in collaboration with the university management should continually organized training/workshop and seminar for staff to update their ICT skills for effective capacity building.

Keywords; ICT, Capacity Building, Application

The twentieth Century was shaped by sweeping changes in communication technologies. The emergence and use of information technology is the century's most significant development affecting scholarly communication. The application of computers to information processing has brought several products to the scene. Consequently, the academic community has undergone tremendous changes during these years, assuming new dimensions influenced by technology-driven application libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structures. Thus libraries are using technology to improve the management of scholarly information to strengthen and speed access to scholarly information not held locally. Over the years, significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials Sharm,(2009 and Ani, 2008) states that "the transition from print to electronic medium apart from resulting in a growth of electronic information has provided users with new tools and applications for information seeking and retrieval.

The role of ICTs in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policies (Thier, 2002) Ogbene and Oheholume (2014) and Ogbaji (2006) are of the view that most experts in the field of education agreed that when properly put to use, ICTs have the capacity of improving teaching and learning. In addition, ICTs could shape workforce and workplace behavior and opportunities of staff of any organization.

The first holistic attempt at introducing ICT in all facets of the country's higher education level was the approval of the Federal Government's National

Policy on ICT, the Nigerian National Policy on information Technology (NNPIT) (FRN, 2001) recognizes the need for ICT to be used in education system. Three major objectives amongst others are the need to empower youth with ICT skills to prepare them for competitiveness of the global stage, integrate ICTs in the mainstream of all the education system, training and establishment of multifaceted ICT institutions as centre of excellence on ICT. The document specifically notes the need for restructuring the education system at all levels to respond effectively to the challenges and in particular, the allocation of a special development fund for education at all levels”.

Another significant document on ICT was the Federal Ministry of Education ministerial initiative on e-learning for Nigeria Education system (FME, 2004) unlike the previous document, the initiative was drawn based on input from major educational and human development commissions as well as boards (National universities commission, National colleges of Education Commission and National Board for Technical Education). However, the document could not be implemented because the minister who initiated the document was removed. Yusuf (2011). Notes that the Nigerian National Policy for Information Technology (FRN, 2011) was inadequate for positive capacity building on the Nigerian Education system. This, the author notes, stems from the fact that the philosophical frame of reference was market driven and that there was little emphasis on the capacity building.

Statement of the Problem

Information Communication Technologies (ICT) are important inputs of the university system. The ability or otherwise of university staff to meet the demands of information Technology could enhanced the capacity building of the staff in the university system. Concerns have been expressed by relevant stakeholders of university education, particularly the staff, students and parents, on the non-integration and implementation of ICT policy into the university system of education in some selected public universities in the North-Central Nigeria. It has been thus argued that this may have lowered the standard and be responsible for poor capacity building of the staff. It is also perceived by the stakeholders that non-integration of ICT policy into the university system such as the provision e-libraries, e-learning platform and laptops in some selected public universities in the north central Nigeria, may be responsible for poor staff job performance.

The researcher observed that if this is not properly addressed, it may have consequent result on the needed flow of information as well as poor

capacity to assess current useful information and research activities. Delay in the compilation and release of results. This could make staff unproductive in their various duty schedules. The problem of this study therefore, put in the question forms is what will be the role of information and communication Technology (ICT) on the capacity building of staff in some selected public universities in the north-central zone Nigeria.

Purpose of the Study

The main purpose of this study was to investigate the role of Information and Communication Technology (ICT) on the capacity building of staff in some selected public universities in the north-Central Nigeria. Specifically, the study sought to:

- (1) Find out the role of e-library on capacity building of staff in selected public universities in north central Nigeria.
- (2) Ascertain the role of e-learning on staff capacity building in selected universities in the north central Nigeria.
- (3) Find out the use of laptop on staff capacity building in selected public universities in the North-central Nigeria.

Research Questions

- (1) To what extent does e-library impact on staff capacity building in public universities?
- (2) To what extent does e-learning platform influence staff capacity building in public universities?
- (3) To what extent do the use of laptops influenced staff capacity building in public universities?

Hypotheses

The following Null hypothesis are formulated to guide the study and are tested at 0.05 level of significance.

- (1) Provision of e-library has no significant impact on staff capacity building in public universities.
- (2) E-learning practices have no significant influence on staff capacity building in public universities.
- (3) Use of laptops has no significant influence on staff capacity building in public universities.

Research Design

The study adopted the descriptive survey design. The descriptive design is one of the methods used in education to verify knowledge that will help educationist in making vital decisions and policies. It is considered the most appropriate for this study because it sought to find out certain occurrences, practices, outcomes, conclusions or types of behaviour by analysis of past events or already existing conditions.

Area of the Study

The study area was North central Nigeria, one of the Six Geo-political zones of the country (including Federal Capital Territory). It comprises Benue, Kogi Kwara, Nasarawa, Niger, Plateau.

Population of the Study

The population of the study comprised 13,784 academic and senior administrative staff of Federal and state Universities in the North Central zone of Nigeria making up a total of 9,708 staff from seven federal universities and total of 4,076 staff from six state universities in the zone.

Sample and Sampling

The sample of the study was 1,379 respondents chosen from seven federal and six state universities in the zone. The respondents consisted of 971 or 10% of the nine thousand, seven hundred and eight (9,708) staff of the federal universities and (408) or 10% of the population of the state universities staff.

Method of Data Collection

In view of the large geographical location of the respondents of the study, the researcher engaged thirteen research assistants in administering and retrieving copies of the questionnaire. The choice of the research assistant was based on their states of origin and or domicile, qualification and availability.

Method of Data Analysis

Quantitative data was analyzed using descriptive statistics of mean and standard deviation to answer the research questions.

Analysis and Interpretation

A total of 1,379 copies of the questionnaire were taken to the field and administered to 1,379 academic and administrative staff of federal and state universities in the North-Central states of Nigeria. A total of 1,362 copies representing 98.76% were returned answered. This means that 17 copies were

damaged or lost. The presentation, analysis and interpretation of the data were organized around the three research questions and three hypotheses posted for the study. Means and standard deviation were used to answer the research questions.

Analysis of Research Questions

This section presents analysis and interprets data to answer the three research questions posted in the study.

Research question 1

To what extent does e-library impact on staff Capacity Building in Public Universities?

Table 1: Mean rating and standard Deviation of the influence of e-library on staff capacity building in public universities.

Item No	Item Statement	N	SA	A	D	\bar{X}	SD	Decision Rule
1.	Use of e-library in my university has changed the way we study and source for educational learning materials	1362	702	581	56	3.44	0.66	Accepted
2.	Library automation in my university permits decentralized access to records and easy verification of status of other branch library	1362	550	629	84	3.20	0.85	Accepted
3.	Use of e-library in my university has enhanced the performances of librarians for its eases the burden	1362	575	607	103	3.23	0.85	Accepted

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	and increases the effectiveness of handling records							
4.	Use of e-library in my university has established educational potentials as valuable source of information for lecturers and researchers.	1362	665	523	94	3.23	0.85	Accepted
5.	Use of e-library serve as a useful tools for lectures' lesson preparation and material on sites.	1362	625	591	81	3.30	0.84	Accepted
6.	e-library in my university serves as a forum to promote group discussions.	1362	625	591	81	3.30	0.79	Accepted
7.	e-library in my university enhances distance learning.	1362	647	618	46	3.37	0.72	Accepted
	Cluster mean and Standard Deviation					3.30	0.79	Accepted

Table 1 shows that item 1-7 had mean scores of 3.44, 3.20, 3.23, 3.23, 3.330, 3.20 and 3.37 with corresponding standard deviations of 0.66, 0.85, 0.82, 0.85, 0.84, 0.79 and 0.72 respectively. Based on the boundary criteria for decision making, it means all the mean scores for the items were rated above the cut-off point of 2.50. This means that respondents agreed that use of e-library in their universities has changed the way they study and source for educational learning materials. Library automation in their universities permits decentralized access

to records and easy verification of the status of other branch library. They agreed that use of e-library in their universities has enhanced the performances of librarian for they ease the burden and increase the effectiveness of handling records. Use of e-library in their various universities has established educational potential as valuable sources of information for lecturers and researchers. Use of e-library serves as a useful tool for lecturers' lesson preparation and material on sites. They also agreed that the presence of E-library in their universities serves as a forum to promote group discussions. Furthermore, they agreed that e-library in their university enhances distance learning. The cluster mean of 3.30 with standard deviation of 0.79 was also above the cut-off point of 2.50. This implies that e-library has positive influence on staff capacity building in public universities.

Table 2
Percentage response of the oral interview on the influence of e-library on staf capacity building in public universities

Themes	Frequencies	Percent (%)
Teaching are easily assessed	36	36.0
Lecturers are well equipped with the knowledge and of what to teach	18	18.0
Distance assessment is easily done	46	46.0
Total	100	100.0

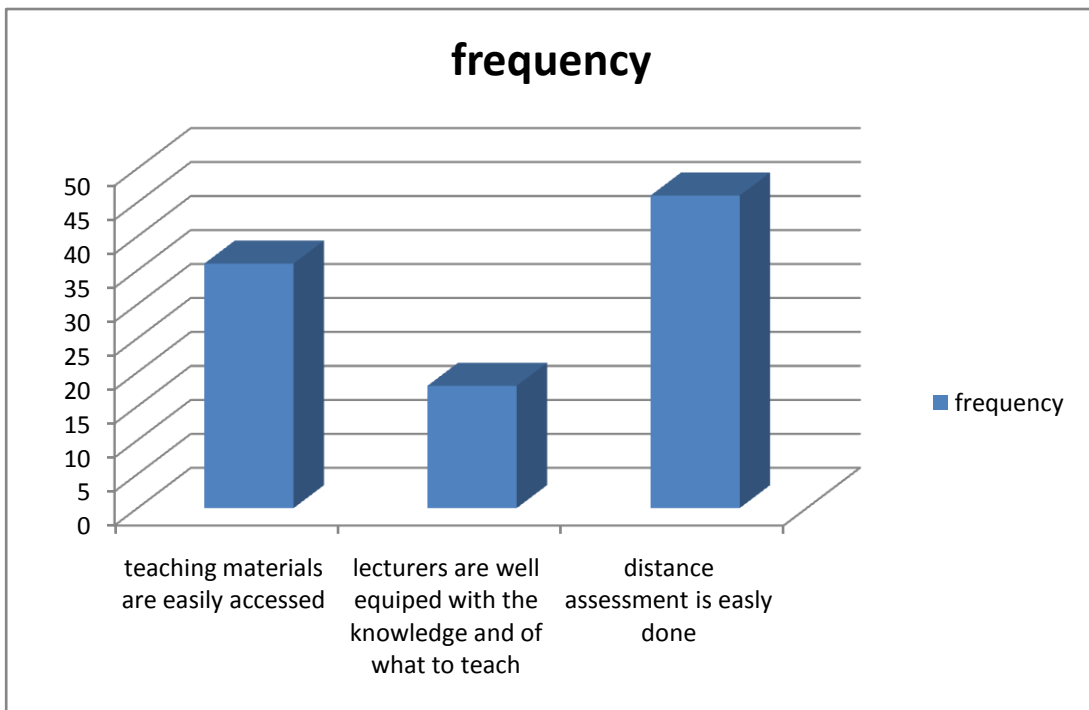


Figure 1: Bar Chart of the Responses of the Oral Interview the influence of e-library on staff capacity building in public universities

Table 1 and Figure 1 show that from the oral interview on influence of e-library on staff capacity building in federal and state universities, 36% reported that teaching materials are easily accessed, 18% pointed out that lecturers are well equipped with the knowledge of what to teach, while 46% opined that distance assessment is easily done. This implies that more of the interviewees agreed alongside with those who responded to the questionnaire that e-library influences staff capacity building in public universities.

Research question 2

To what extent does e-learning platform influence staff capacity building in public Universities?

Item No	Item Statement	N	SA	A	D	\bar{X}	SD	Decision Rule
8.	E-learning in my university facilitates efficient	1362	735	519	67	3.43	0.72	Accepted

	transfer of knowledge anywhere and anytime regardless of subject matter.							
9.	E-learning empowers staff of university with the information technology awareness and skills crucial to succeed in today's global knowledge economy.	1362	515	681	101	3.21	0.78	Accepted
10.	E-learning in my university enable staff to design and develop learning contents in line with National Universities Commission's (NUC) directives.	1362	483	714	79	3.17	0.80	Accepted
11.	E-learning in my university has change the pattern of teaching and learning and improved problem solving skills	1362	538	620	115	3.18	0.84	Accepted
12.	E-learning in my university makes available information in the classrooms thereby overcoming	1362	498	718	56	3.19	0.80	Accepted

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	shortage of learning resources.								
13.	Blended e-learning combines the traditional classrooms or face to face method of teaching and learning.	1362	571	624	99	3.25	0.80	Accepted	
14.	E-learning system is used for an open, flexible and diverse e-learning environment.	1362	710	540	31	3.30	0.76	Accepted	
	Cluster mean and Standard Deviation					3.30	0.79	Accepted	

Table 2 shows that items 8-14 had mean scores of 3.43, 3.21, 3.17, 3.18, 3.19, 3.25 and 3.30 with corresponding standard deviations of 0.72, 0.78, 0.80, 0.84, 0.80, 0.80 and 0.76 respectively. Based on the boundary criteria for decision making, it means that all the mean scores for the items were rated above the cut-off point of 2.50. This means that respondents agreed that e-learning in their university facilitates efficient and effective transfer of knowledge anywhere and anytime regardless of subject-matter. E-learning empowers staff of universities with the information technology awareness and skills crucial to succeed in today's global knowledge economy. E-learning in the university enables staff to design and develop learning contents in line with National University Commission (NUC) directives. Respondents agreed with the statement that e-learning in their university has changed the patterns of teaching and learning and improved problem solving skills. They also agreed with the statement that e-learning in their university makes available information in the classrooms thereby overcoming shortage of learning recourses and e-learning combines the traditional classroom or face to face methods of teaching and learning. Moreover, they agreed with the statement that e-leasing system is used for an open, flexible and diverse e-learning environment. The cluster mean of 3.25 with standard deviation of 0.78 was also above the cut-off point of 2.50. This implies that e-learning has influence on staff capacity building in public universities.

Figure 2: Percentage Response of Oral Interview on the influence of e-learning on staff capacity building

Themes	Frequency	Percent (%)
Knowledge can be transferred to learners irrespective of their location	34	34.0
Easy assessment is done by lecturers	20	20.0
Students can access learning materials on their own	20	20.0
Teaching is done without stress	26	26.0
Total	100	100.0

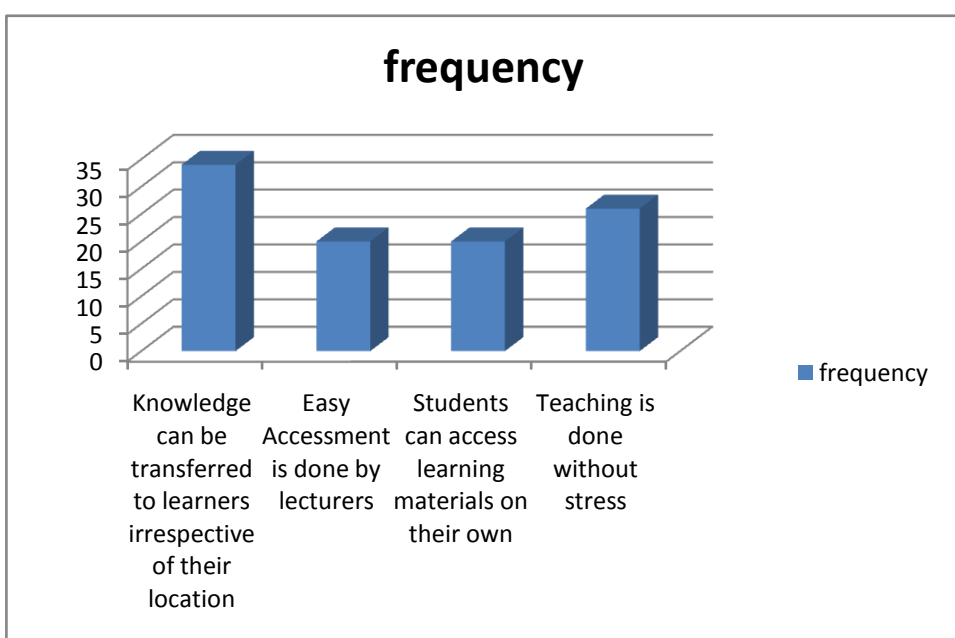


Figure 2: Bar Chart of the Responses of the Oral influence of e-learning on staff capacity building in public universities

Table 3 and Figure 2 show that from the oral interview on influence of e-learning on staff capacity building in federal and state universities, 347% said that knowledge can be transferred to learners irrespective of their location, 20% pointed out that easy assessment is done by lecturers, 20% also said that students can access learning materials on their own, while 26% said that teaching is done without stress. This implies that *more of the* interviewees agreed alongside with those who responded to the questionnaire that e-learning influences staff capacity building in public universities.

Question 3:

To what extent do the use of laptops influence on staff capacity building in public universities?

Table 3

Item No	Item Statement	N	SA	A	D	\bar{X}	SD	Decision Rule
15.	Access to laptops in my university facilitates different kinds of teaching and learning.	1362	612	651	58	3.35	0.70	Accepted
16.	Laptop computers in my university provide staff with multiple sources of research materials on topics.	1362	719	546	64	3.43	0.70	Accepted
17.	Availability of laptops enhance administrative responsibilities in my university.	1362	589	614	88	3.26	0.80	Accepted
18.	Unrealistic time deadline which put staff under pressure and stress are controlled in the university with the	1362	711	518	88	3.39	0.75	Accepted

	use of laptops.								
19.	Computer laptops networking in my university facilitates collaborative/team work.	1362	632	615	54	3.33	0.76	Accepted	
20.	Computer laptops in my university influence on reports and communication.	1362	783	520	42	3.52	0.62	Accepted	
21.	Computer Laptops in my university amplify what is already taking place through projecting.	1362	680	522	94	3.33	0.81	Accepted	
	Cluster mean and Standard Deviation					3.37	0.73	Accepted	

Decision rule: 1.00-1.49=VLE, 1.50-2.49=LE, 2.50-3.49=HE, 3.50-4.00=VHE
 Table 2 show that items 15-21 had mean score of 3.35, 3.43, 3.26, 3.39, 3.33, 3.52 and 3.33 with corresponding standard deviation of 0.70, 0.70, 0.80, 0.75, 0.76, 0.62 and 0.81 respectively based on the boundary criteria for decision making, it means that all the mean scores for the items were rated above the cut-off point of 2.50. This means that respondents agreed that access to laptops in their university facilitates different kinds of teaching and learning. They agreed with the statement that laptop computers in their university provide staff with multiple sources of research materials on various topics. Availability of laptops enhances administrative duty. Unrealistic time deadline which put staff under pressure and stress are controlled in the university with use of laptops. Computer laptop networking in their university facilitates collaborative/team work. Computer laptops in their university influence the production of reports and communication. In addition, they agreed with the statement that computer laptops in universities system amplify what is already taking place through projecting/animation. The cluster mean of 3.37 with standard deviation of 0.73 was also above the cut-off point of 2.50. This implies that laptops have influence on staff capacity building in public universities.

Figure 3: Percentage Response of the Oral Interview of the influence of laptops on staff capacity building in public universities

Themes	Frequency	Percent (%)
Large information is easily stored in the laptop	40	40.0
Lecturers use laptop for projecting information during teaching	28	28.0
Information stored in laptop is retrieved easily at any time.	32	32.0
Total	100	100.0

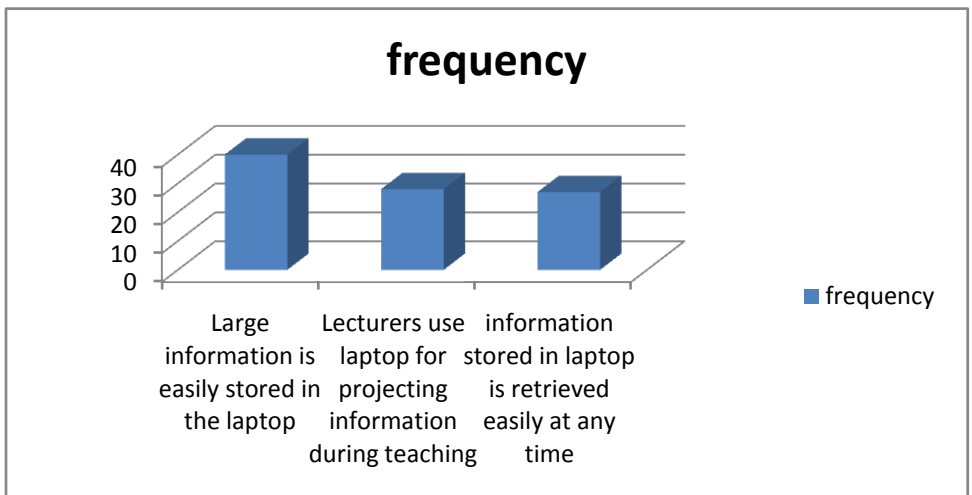


Table 3 and Figure 3 show that from the oral interview on influence of laptops on staff capacity building in federal and state universities, 40% reported that large information is easily stored in the laptops, 28% were of the view that lecturers use laptops for projecting information during teaching, while 32% said that information stored in laptop is retrieved easily at any time. This implies that more of the interviewees agreed

alongside with those who responded to the questionnaire that laptops influence staff capacity building in public universities.

Discussion of Findings

Based on the results of the analysis of the three research questions and testing of the three hypotheses posited for this study, the following findings are organized and discussed for ease of understanding.

The first finding of the study revealed that e-library services have significant positive influence on staff capacity building in public universities in North-Central Nigeria. This finding is in consonance with Babalola and Idowu (2014) who found that e-library services provided adequate information as well as saved time of the users. Moreover, the finding supports Uhamber (2014) who found that academic staff awareness of e-library services, internet telephony, e-mail, data transfer significantly impacts on their overall performance in Benue State University, Makurdi. The researcher observed that through e-learning, lecturer's access teaching materials easily, send and receive information at ease and also enhance mastery of teaching. It also builds confidence in lecturers as they use e-library materials that are up to date to teach students.

The second finding of the study showed that e-library has significant positive influence on staff capacity building in public universities. This finding agrees with Adamu and Shehu (2015) who found that power point presentation improve audience focus especially in large classes and in courses that are geared towards information exchange. Similarly, the finding supports Solbes and Vilches (2006) who found that computer animation had effects on cognitive skills and academic performance, computer animations and the internet are used widely by students and lecturers for school work and to obtain information, but whether animation can be used to make children "smarter" remains to be seen. The researcher observed from the field that animation helps in enhancing acquisition of practical skills for solving problems as well as easy assessment of students.

The third finding of the study revealed that use of laptops has significant positive influence on staff capacity building in public universities. The finding is in line with Righi (2012) who reported that laptop computers had a positive influence on students' learning behaviours, produced higher quality work, and had improved communication with their teachers when they had access to them. Scherer and Cator (2010) also found that access to laptop computers influences the learning behaviours of staff specifically their engagement level and depth of their completed assignment. They are more engaged in the learning process

because of the personalization that laptop computers offer. Because learning experiences are personal, staff and students take ownership in their learning and produce quality work that they can take pride in as students collaborate with one another on projects. As they explain their work to their lecturers, their communication skills and classroom relationships strengthen. The researcher discovered that lecturers use laptop for projecting information during teaching, storage and retrieval of information.

The fourth finding of the study revealed that laptop has significant positive influence on staff capacity building in public universities. This finding is in agreement with Oheholume and Ogbaji (2014) who found that laptop can be used for administrative purposes. It can be a useful tool for communicating day-to-day announcements that facilitate students' progress in their courses. The finding of this study also corroborates Ajayi and Oyedepo (2014) who found that lecturers, students, and administrative staff that used laptop discovered that schools and offices are more easily accessible than post office hours, *t*-mails extend office hours to virtually any time and lead to mutual convenience of staff and students. They have also learnt that resources existed beyond the boundaries of the school. From the field experience, the researcher discovered that e-mail enhances speedy performance of work of lecturers, storage of information for future use as well as makes communication easy among lecturers and students.

The fifth finding of the study indicated that e-learning has significant positive influence on staff capacity building in public universities. This finding is in line with Walter and Lumadi (2013) that e-learning was a significant influence on the performance of students as student-teachers taught using e-learning consistently performed better than student-teacher taught using the traditional method. Eze and Aja (2014) also found that ICT devices like e-learning significantly influence effective teaching and learning in secondary schools. The researcher observed from the field survey that e-learning resources enhance better and easy teaching. Lecturers need not to over stress themselves teaching the students in class. Students can be anywhere but receive lesson, have access to study materials and even get feedback of their performance.

The sixth finding of this study reveals that audio-visual sound has significant positive influence on staff capacity building in public universities. This finding also agrees with Stanley (2014) who found that children learn differently and audio-visual equipment give teachers the chance to stimulate each child's learning process with a combination of pictures, sounds and attention grabbing media. Stanley discovered that students are keen to understand technology and keep up to date with applied science. Having the

opportunity in the classroom helps to facilitate learning. Moreover, the finding of this study is also intandem with Rajeev (2006) who found that audio-visual sound has become a vital instrument for teaching, research and learning process. From filed observation by the researcher, it was discovered that when lecturers used audio-visual sound to teach students, it makes teaching easier and less stressful for them. This contributes greatly in enhancing their job performance. Moreover, from the field experience, the researcher discovered that the use of audio-visual sound makes students' understanding and hearing simpler and lecturers are more confident in themselves in achieving lesson objectives.

The seventh finding of this study revealed that e-library has significant positive influence on staff capacity building in public universities. This finding agrees with Uche and Isa (2016) who found that the influence of computer development programme and skills acquired enable librarians to give concrete and clear instructions to subordinates. Similarly, Kolade (2011) found that school media centres' resources must be stocked with collection well organized comprising both book and non-book resources appropriate for carrying out curricula instruction in different subject areas. The finding also corroborates that of Todd and Carol (2010) who reported that high quality good libraries not only help to improve teachers' job performance, but also help students to read more, learn how to use and process information better and to perform better on achievement tests. Levels of library funding and collection size all have a direct impact on teachers' job performance.

Conclusion

Based on the findings of this study, it was concluded that there is significant influence of ICT (internet services, e-learning, and laptop) on staff job capacity building in public universities in North-Central Zone of Nigeria.

Recommendations

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

1. Universities governing councils should, as a matter of importance make policies that ensure the provision and utilization of e-library services in all schools, faculties and departments in the universities within the study area.
2. Vice chancellors of the public universities must ensure that both academic and none academic staff are ICT compliant especially in the

- area of laptop that aid fast information delivery for effective and efficient services.
3. Management staff of public universities must ensure that workshops, seminars and conference are organized regularly on the need for the application of ICT in their daily operations like e-library which is the hub of universities.
 4. Management of public universities must ensure that both academic and non-academic staffs are given opportunities to go for in-service training in ICT related course to equip them with the basic for the use of ICT facilities.
 5. University governing councils must ensure that before any staff can be employed, he/she must be ICT literate so that the use of e-library resources will not be difficult for them.

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