Availability and Utilization of Information and Communication Technology Gadgets in Faculties of Education in Rivers State Universities, Nigeria

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Abstract
The study examined the availability and utilization of information and communication technology gadgets in faculties of education in Rivers State Universities. Descriptive survey design was adopted and the population comprised of 237 lecturers and 9,945 students giving a total population of 10,182. Sample was drawn from the study and analysis was done with 168 lecturers and 232 students who returned their instruments. Test re-test method was used for the reliability test which yielded a co-efficient of 0.90. Mean and standard deviation were used to analyse the research questions while z-test was used to test the hypotheses. Findings from the study revealed that information and communication technology gadgets available are moderately and also not effectively utilized for teaching and learning in faculties of education in Rivers State Universities as there was no significant differences in the responses of the respondents on availability and utilization of information and communication technology gadgets in Rivers State Universities. Based on the findings, conclusion were drawn and recommendations made amongst others includes that Government and NGOs including stakeholders should endeavour to make available information and communication technology gadgets in Faculties of Education in Rivers State Universities, lecturers and students should endeavour to utilize the available information and communication technology gadgets available in teaching and learning education courses in Faculties of Education in Rivers State Universities and regular appraisal of available information and communication technology gadgets should be initiated to identify critically needed information and communication technology gadgets in faculties of education.

Introduction
Information and communication technology is an innovation with a wide range of digital pedagogical tools available nowadays for teachers, students and administrators. They include internet (intranet and extranet), computer email, e-presentations, discussion rooms, platform, video-conference, disks, flash memories, multimedia projectors, interactive white boards and many more to come in future. These new gadgets, equipment method play a crucial role in virtually all areas of modern information delivery. Not surprising, educational faculties are areas that would benefit from the application of information and communication technology (ICT). Globally, information and communication technology has initiated a transition of emphasis from analogous education research based on technological development in education (Jude & Dankoro, 2012).

The emergence of information and communication technology prompted many observers to predict the end of traditional pedagogical, didactic and philosophical approach. Porta (2010) argued that information and communication technology can be used to extend access to educational delivery techniques, to support the ongoing professional development of teachers and to facilitate education related data collection and processing efforts in ways previously not possible. Existing providers had to adjust fast or risk being side lined by whole new players made up of business schools that had successfully reinvented themselves as e-learning providers and other institutions drawn from outside the ranks of traditional suppliers but with the capacity to respond more effectively than their established rivals to changed world.

To achieve a broad range and successful implementation of information and communication technology in teaching and learning programme needs better knowledge and understanding of information and communication technologies, how it functions and how it can be implemented to enhance the education and the needs of students and their future employers. Maki (2008) viewed that technology can be used right from students' affair administration to various aspects of administrations in an educational institution.

E-learning technology has the potential to transform how and when learners learn. Learning will become more integrated with work and will use shorter, more modular, just in time delivery systems. E-learning delivers contents through electronic information and communication technologies. According to Ajayi (2008), the use of these facilities involves various methods which include systematic feedback system. Computer-based operation network, video conferencing and audio conferencing, internet worldwide websites and computer assisted instruction. This delivery method increases the possibilities for how, where and when learners can engage in life-long learning - lecturers are especially excited about the potential at e-learning for just-in-time learning delivery. The products of business education to maintain technological leadership, they must be equipped with technological competencies to meet up with the tremendous surge and demand of the ever changing technologies in the world of work. Osuala (2009) recognizes new technologies as a developing force. Above all, the infrastructures of information and communication technology in Rivers State Universities are always not accessible. According to Philip; Oluwaghema and Oluwaranti (2010), tertiary institutions lack adequate infrastructure to effectively tap into the opportunities offered by the cyberspace. Moreover, where they are available they are plagued by one problem or the other. Despite the development in the capacities of information and communication technology and its impact, Aginam (2006) as cited in Uchendu, (2012) stated that the level of application of information and communication technology in Nigerian universities is less than five percent. Information and communication technology is still not fully reflected in the teaching and learning process in faculties of education in tertiary institutions in Rivers State. Because of lack of such facilities teachers do not seem to be using them in teaching and learning. Students are not also exposed to their use where they can apply their knowledge. Hence, the basic aim of this research is to provide a framework of the extent of utilization of information and communication technology in faculties of education in Rivers State.

Availability of Information and Communication Technologies in Faculties of Education in Tertiary Institutions
Faculties of Education like other areas in education need the extensive use of modern office or classroom technologies in the process of preparing young generation towards their potential workplace. Such facilities include computers, internet, telex and telecommunication facilities data processing machines, laboratories, many more. However, in most of these

institutions, information and communication technology department is made available for easy records of students' information and to update their result, also students are made to write some of their examinations. Observation show that information and communication technology facilities exist among faculties of education in tertiary institutions in Rivers State. But they are unable to incorporate the benefit of computer technology in teaching and learning process. Consequently, less than 12 percent of the Nigeria academic curricula have digital content. Infinedo (2010) used a conceptual framework to illustrate challenges facing the diffusion of e-learning in the Nigeria tertiary education environment.

Everest and Laura (2011) in their study on learning electronically in Nigerian universities revealed that the e-learning facilities were inadequate and students' access to these facilities is very negligible. They also revealed some inhibitors to the use of e-learning facilities which include power outage, obsolete e-learning facilities, lack of skilled manpower and poor infrastructure and recommended that government should show more political will by increasing the financial resources available to the universities especially in the area of e-learning facilities which is capital intensive among others.

Anumnu (2008) is of the opinion that non-availability of information and communication technology resources in schools hinders the actual utilization of information and communication technology in our school system. Jegede and Owalabi (2008) observed that out of the estimated 818 million people in Africa, majority cannot boast of radio, television, mobile phone, personal computer, satellite television or even make use of internet. However, Oyedeji, Salew and Oluwalola (2008) viewed that despite the poor picture presented by Jegede (2004), considerable progress have been made in accessing and availability of information and communication technology resources in Nigeria. In 2000 only 0.2 percent of the population used internet and the growth rate of the personal computer was only 1.2 percent. In 2004, about 0.9 percent of Nigerians have access to the internet and personal computer (PC) growth rate has risen to over 6 percent.

According to the Federal Ministry of Education (2004), the Federal Ministry of Education and its allied have introduced or provided several information and communication technology based programmes among which are school Net, the National Open University of Nigeria and National virtual liberty project. At the State level, all ministries of education have on-going projects and programmes on computer education that will automatically be documented as part of national survey on the state of information and communication technology in Nigerian schools. Information and Communication Technology in tertiary institutions are still inadequate. Although the development of information and communication technology based initiative in Nigeria was kick started 2002 (Jegede, 2004).

According to Akomolate (2008), concerted efforts are on to improve the level of information and Communication Technology, infrastructure and accessibility. Anumnu (2008), non-availability of information and communication technology resources in schools hinders the actual utilisation of information and communication technology in our school system. Akomolate (2008) stated that schools have been benefiting from several donor bodies, such as the Universal Service Provision Fund (USPF) and Petroleum Development Trust Fund (PDTF) and many more

To ensure the availability of quality content online and through devices both in the private sector and non-private sector in the State. Enrichment of existing curriculum and pedagogy by employing information and communication technology tools for teaching and learning.

To enable students to acquire skills needed for the digital world for higher studies and gainful employment. To promote the use information and communication technology tools in classroom environment including employment of audio-visual medium and satellite based devices. It is important for government or school management to provide information and communication technology learning facilities in schools. Availability of information and communication technology makes distinctive difference in the learning environment. Information and communication technology availability enhances teachers and students knowledge to become more self-sufficient but absent of information and communication technology in the learning environment destabilizes the students and make them not current in the aspect of Information and Communication Technology.

Information and communication technology makes information acquisition and management easier and more efficient to the students and also the teachers and open up possibilities across all sectors of global access to information, knowledge and markets. Information and communication technologies expand the range of choices and opportunities by facilitating greater access to students' educational development. It opens up equal opportunities to both students and teachers as well as help to level the playing field by increasing the students' participation in economic and human development.

Utilization of Information and Communication Technology Gadgets in Faculties of Education in Tertiary Institutions

Implementation of any curriculum as dependent on the intelligent and rational choice the classroom teachers make about curriculum programme and materials needed for use in schools. This is because the teachers are charged with the responsibility of the effective implementation of curriculum at all levels of education. It is therefore important that teachers should have unconditional access to information and communication technology facilities, such as computers, the internet sourcing among others.

Integrating information and communication technology processes into the education system, there is little doubt that Rivers State education sector is missing out on the benefits of information and communication technology. Observation shows that many students and teachers are losing out on better education and well-paying information and communication technology jobs. It is through this realization that some institutions in Rivers State are striving to seize this opportunity to exploit the benefit of information and communication technology for the purpose of teaching and learning, their efforts are informed by the understanding that information and communication technology in education is a significant key driver for pupil achievement through enhanced production of information and knowledge.

The effective use of information and communication technology in education also has the potential to enhance achievement among students through greater collaboration, improved communication and opening of wider opportunities to share information. On these note reasons of implementation of information and communication technology studies as a subject in institution as a curriculum reform or innovation is justified provided it is done in line with the principle of change. Also information communication technology (ICT) has been implemented in the curriculum of some schools in Rivers State even when there is no infrastructure; students are taught how to use information and communication technology to enhance learning, also given assignments on it. Most students in faculties of education are exposed to the course because information and communication technology usage is part of their curriculum and taught different topics on the course, Information and communication technology usage for teaching and learning is basically sometimes hindered by lack of

commitment by the government in terms of funding staff training, stable and formidable infrastructure, internet, power, e-library amongst others. Tertiary institutions around the world have increasingly adopted information and communication technology as a tool for teaching and curriculum implementation, teacher, student development and learning abilities. The integration of information and communication technology into our classrooms is determined by factors, such as the contexts in which teachers interact, their belief, and their attitude towards teaching and learning. The level of enlightenment on which information and communication technology could be used in education is still low, some lecturers hardly comprehend the benefit of information and communication technology in education. Most of the lecturers acknowledge the fact that internet could be browed as point of supply of teaching materials. Observations show that the depth of use of computer by tertiary institutions academic teachers in Nigeria, 58.5 percent use computers processing, 32 percent use it for spreadsheet and data processing and 20.5 percent use it for programming, 66 percent use it for other purposes apart from the aforementioned. That 90 percent of Nigerian educational institutions are in the emerging phase of information and communication technology, 7 percent in the applying phase, and 3 percent in the infusing and transforming phases. Information and communication technology is therefore in its infancy in Nigeria. However, the concern is whether tertiary institutions in Rivers State in terms of lecturers, students and management are prepared to integrate the technology that is feasible to them into effective lessons for their students.

Statement of the Problem

Teachers or educators in Faculties of Education are expected to integrate information and communication technology gadgets in the teaching and learning process, they ought to use technology so that it supports instruction and enables learners to use it as an important tool to meet their information and learning needs but this expectation has not been met in Faculties of Education in tertiary institutions in Rivers State (Inije, Utoware & Kren-Ikidi, 2013). This to an extent has hampered teaching and learning process in Faculties of Education in tertiary institutions in Rivers State. Observation from the researchers perspectives shows that teachers can make use of information and communication technology facilities in teaching in faculties of education if available but due to lack of information and communication technology facilities or gadgets, its utilization is being confronted with so much challenges. Most Faculties of Education curriculum have not fully embraced the use of information and communication technology gadgets or facilities in teaching and learning; this is as a result of the prevailing challenges like non-availability of information and communication technology gadgets or facilities and if available non utilization of it. However, it is quite uncertain whether Faculties of Education in tertiary institutions in Rivers State are utilizing the available information and communication technologies effectively to enhance the capacity of students through teaching and learning. These observations made by the researchers gave rise to the study and to proffer solution to it.

Purpose of the Study

The aim of the study was to investigate the availability and utilization of information and communication technology gadgets in faculties of education in Rivers State Universities, Nigeria. The study determined the:
1. Availability of information and communication technology gadgets in Faculties of Education in Rivers State Universities.
2. Utilization of information and communication technology gadgets in teaching and learning in Rivers State Universities.

Research Questions

The following research questions were posed for the study:

1.   What are the available information and communication gadgets in faculties of education in Rivers State Universities?
2.   What extent is information and communication technology gadgets utilized in teaching and learning in faculties of education in Rivers State Universities?

Hypotheses

The following null hypotheses were raised and tested at 0.05 level of significance

1.   There is no significant difference in the mean rating of lecturers and students on the availability of information and communication technology gadgets in faculties of education in Rivers State Universities.
2.   There is no significant difference in the mean rating of lecturers and students on the extent of utilization of information and communication technology gadgets in teaching and learning in faculties of education in Rivers State Universities.

Methods

The design for the study was a descriptive survey design; because the variable being studied was not subjected to manipulation but was observed in their natural setting and questionnaire were used to elicit responses from the respondents. The study area was in Faculties of Education in Rivers State Universities, Nigeria. The population of the study consists of 10,182 lecturers and students in three universities in Rivers State which include Rivers State University, Port Harcourt, Ignatius Ajuru University of Education, Port Harcourt and University of Port Harcourt. Details of the population are shown in table 1 below. The sample size for the study is 469 respondents. The figure comprised the entire 237 lecturers and 232 students selected from 9,947 students using Taro-Yemen formula. Self-structured questionnaire titled 'Availability and Utilization of Information and Communication Technology Gadgets in Faculties of Education Questionnaire (AUICTGFEQ)' was used to collect data from both lecturers and students. The instrument was developed in two sections, A and B. Section A of the instrument was for the background information of the respondents while section B was used to elicit information for the research questions posed in the study, as it was organised. The respondents were made to choose the best options that suits their view about the question item raised. Four point scale of Highly Available (HA= 4 points), Available (A = 3 points), Moderately Available (MA = 2 points) and Not Available (NA = 1 point) was used to gather information for research question one and Highly Utilized (HU= 4 points), Utilized (U = 3 points), Moderately Utilized (MU = 2 points) and Not Utilized (NU = 1 point) was used to gather information for research question two. In all, the information gathered from the respondents was used for analysis. The instrument was subjected to content and face validity. Reliability of the instrument was done through test-re-test method using six (6) selected lecturers and students outside the population under study, who were not part of the study population. The second test was given at interval of two weeks after the first test and a Correction Co-efficient (r) and reliability of 0.90 was obtained and the instrument was deemed reliable by the researchers for the study. All the instrument administered were not retrieved and the researchers used only the retrieved instrument for analysis as 168 instead of 237 lecturers returned their instrument and 232 students also retuned theirs also. Mean with standard deviation was used to analyse the research questions posed. Decision for accepting the analysis was based on the mean score of 2.50 and above which was accepted while item with mean score below 2.50 was rejected. Z-test statistical tool was used to test the null hypotheses posed for the study and decision were made based on the results obtained.

Table 1: **Population Distribution**

S/N	Institutions	No. of Students	No. of Lecturers	Total
1.	Rivers State University, Port Harcourt	1,824	67	1,891
2.	Ignatius Ajuru University of Education, Port Harcourt	2,800	38	2838
3.	University of Port Harcourt	5,321	132	5,453
	Total	**9,945**	**237**	**10,182**

Source: Field Survey, 2018

Results

The results and analysis was presented as thus:

Research Question 1: What are the Available information and communication gadgets in faculties of education in Rivers State Universities?

Table 2: **Mean Rating of the Respondents on Available Information and Communication Technology Gadgets in Faculties of Education in Rivers State Universities.**

S/N	Item	Lecturers (N=168)			Students (N=232)		
		Mean	SD	Decision	Mean	SD	Decision
1.	Multimedia protectors are available for usage.	1.74	1.01	MA	1.73	0.94	MA
2.	Software packages are always available.	1.68	1.05	MA	1.66	0.91	MA
3.	Education faculties are connected to internet.	1.56	0.98	MA	1.73	0.97	MA
4,	There are available laboratories.	1.07	0.13	MA	1.34	0.47	MA
5.	There are interactive white boards in classrooms.	1.39	0.76	MA	1.56	0.92	MA
	Total mean/SD	**7.44**	**4.11**		**8.02**	**4.21**	
	Grand mean/SD	**1.48**	**0.82**		**1.60**	**0.84**	

Source: Field Survey, 2018

The results in table 2 shows that the lecturers and students rated the 5 items in the table low in terms of availability of information and communication gadgets. Thus, it indicates that there is poor presence of multimedia projectors, software packages, internet facilities, interactive white boards and laboratories. The grand mean of 1.48 for lecturers and 1.60 for students is a clear indication that information and communication technology gadgets are moderately available in faculties of education in Rivers State Universities as rated by the respondents.

Research Question 2: What extent is information and communication technology gadgets utilized in teaching and learning in faculties of education in Rivers State Universities?

Table 3: **Mean Rating of the Respondents on Extent Information and Communication Technology Gadgets is utilized in Teaching and Learning in Rivers State Universities.**

S/N	Item	Lecturers (N=168)			Students (N=232)		
		Mean	SD	Decision	Mean	SD	Decision
1.	e-Library	1.45	0.86	MU	1.63	0.94	MU
2.	Video/teleconferencing	1.74	1.01	MU	1.82	1.05	MU
3.	e-Presentation (PowerPoint)	1.39	0.76	MU	1.14	0.34	MU
4.	Internet and web browsing	1.41	0.81	MU	1.95	1.14	MU
5.	Personal computer, laptops classrooms.	1.72	1.16	MU	1.93	1.15	MU
	Total mean/SD	**7.71**	**4.60**		**8.47**	**4.62**	
	Grand mean/SD	**1.54**	**0.92**		**1.69**	**0.92**	

Source: Field Survey, 2018

The results in table 3 shows that the lecturers and students rated the 5 items in the table low in terms of utilization of information and communication technology gadget. Thus, it indicates that there is poor level of utilization of video teleconferencing, e-presentation, internet and web browsing, and personal computers and laptops. The grand mean of 1.54 for lecturers and 1.69 for students is a clear indication that information and communication technology gadgets is poorly utilized in faculties of education of the institutions studied as rated by the respondents.

Test of Hypotheses
The hypotheses were tested according to each research question as thus:
Hypothesis 1: There is no significant difference in the mean rating of lecturers and students on the availability of information and communication technology gadgets in faculties of education in Rivers State Universities.

Table 4: z-test Result of the Difference in Mean Rating of the Respondents

Group	N	Mean	SD	L/Significance	z-cal	t-tab	Remark
Lecturers	168	1.48	0.82				
Students	232	1.60	0.84	.05	1.24	1.96	Accepted

Source: Field Survey, 2018

The analysis in table 4 shows that at 0.5 percent level of significance the calculated z value of 1.24 is less than the table value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference between lecture and students rating regarding on the availability of information and communication technology gadgets in faculties of education in Rivers State Universities.

Hypothesis 2: There is no significant difference in the mean rating of lecturers and students on the extent of utilization of information and communication technology gadgets in teaching and learning in faculties of education in Rivers State Universities.

Table 5 z-test Result of the Difference in Mean Rating of the Respondents

Group	N	Mean	SD	L/Significance	z-cal	t-tab	Remark
Lecturers	168	1.54	0.92				
				.05	1.73	1.96	Accepted
Students	232	1.69	0.92				

Source: Field Survey, 2018

The analysis in table 5 shows that at 5 percent level of significance the calculated z value of 1.73 is less than the table value of 1.96. Hence, the null hypothesis is accepted, meaning that there is no significant difference between lecturers and students rating regarding the extent of utilization of information and communication technology gadgets utilized in teaching and learning in faculties of education in Rivers State Universities.

Discussion
The findings on research question 1 proved that the respondents accepted the statement that there is poor presence of multimedia projectors, software packages, internet facilities, interactive white boards and laboratories. This finding is in agreement with the views of Everest and Laura (2011), who in their study on learning electronically in Nigerian universities revealed that the e-learning facilities were inadequate and students' access to these facilities is very negligible. However, the finding of the study is not in agreement with Jegede (2004) and Jegede and Owalabi (2008) who revealed that there is considerable progress in assessment and availability of information and communication technology resources in Nigeria. To this, the researchers were of the view that information and communication technology gadgets need to be available for students to learn and for lecturers to teach effectively.

The findings on research question 2 also proved that the respondents agreed with the statement that there is poor level of utilization of video teleconferencing, e-presentation, and internet and web browsing, and personal computers and laptops. This finding is in agreement with the view of Nwite (2007) who depicts that availability of computers and their connectivity to the internet was non-existent in virtually all the schools studied and utilization which is dependent on availability, and because availability is poor, thus usability was also found to be poor. The finding also agrees with Anumnu (2008) who revealed that non-availability of information and communication technology resources in schools hinders the actual utilization of information and communication technology in our school system. In agreement with the views of Nwite and Anumnu, Edet and Francis (2013) opined that there is minimal utilization of information and communication technology gadgets in Cross River State. The researchers viewed that the major issue confronting Rivers State Universities is non availability of information and communication technology gadgets and if these gadgets are available, they are not effectively utilized for the purposes of teaching and learning. It is the views of the researchers that information and communication technology gadgets ought to be made available for it to be utilized effectively.

Conclusion
Based on the findings of the study, the researchers concluded that the study examined it is only when information and communication technology gadgets are made available that it can be effectively utilized for teaching and learning. The researchers concludes that if projectors, computers, software packages and internet facilities are critically provided needed in Rivers

State Universities, effective teaching and learning will take place simultaneously. Based on the findings, universities in Rivers State need adequate availability of information and communication technology gadgets.

Recommendations

Based on the findings and conclusion, the following recommendations were made by the researchers:

1. Government and NGOs including stakeholders should endeavour to make available information and communication technology gadgets in Faculties of Education in Rivers State Universities.

2. Lecturers and students should endeavour to utilize the available information and communication technology gadgets available in teaching and learning education courses in Faculties of Education in Rivers State Universities.

3. Regular appraisal of available information and communication technology gadgets should be initiated to identify critically needed information and communication technology gadgets in faculties of education.

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