Information Communication Technology Utilization and Instructional Service Delivery among University of Uyo Lecturers in Akwa Ibom State

Ngozika, A. Oleforo (Ph.D)
Department of Curriculum Studies, Educational Management
University of Uyo, Uyo
Email: ngozikaoleforo2015@gmail.com

Angela E. Abba (Ph.D)
Educational Foundations
National Open University of Nigeria

Nsikak, Mkpong Okon
Department of Curriculum Studies, Educational Management
University of Uyo, Uyo

Abstract:
The study examined the relationship between Information and Communication Technology (ICT) and Instructional Service Delivery among University of Uyo Lecturers in Akwa Ibom State. To achieve the purpose, two specific objectives were stated, two research questions were raised and two null hypotheses formulated to guide the study. Ex-post facto research design was employed. The study population consisted of 1270 lecturers from university of Uyo and the sample size of 305 lecturers representing 24% of the population. Multi-stage sampling technique was used to draw up the sample for the study. The researcher developed two instruments titled 'Information and Communication Technology Questionnaire (ICTQ) and Instructional Service Delivery Questionnaire (ISDQ) were used for data collection. Both instruments were validated by three validates and used for the study. The reliability Co-efficient of the instrument were determined using Cronbach Alpha Reliability Co-efficient analysis and reliability indices of .72 and .82 for ICTUQ and ISDQ respectively were obtained. Pearson's Product Moment Correlation statistic was used to analyse the data and to test the hypotheses at 0.05 level of significance, r-value of PPMC was used to answer the research questions. The findings revealed that, there is a low positive relationship between ICT utilization and instructional service delivery among University of Uyo lecturers. It was concluded that, the lecturers' utilization of ICT for instructional service delivery significantly determined their effectiveness because the availability and utilization were seen to impact positively on instructional service delivery. Based on the findings it is recommended among others that, Information communication technology gadgets should be made available, facilities establish also ensuring effective internet connectivity and this will provide opportunities to educational leapfrog into the modern era.

Keywords: Information and Communication Technologies,Utilization, Instructional Delivery**,** University lecturers.

Introduction:

Information and Communication Technologies (ICT) is increasingly becoming more widespread throughout University education worldwide, which is in line with UNESCO's policy paper for change and development in higher education. The policy urges higher institutions to make greater use of the advantages offered by the advancement of communication technology to improve the provision and quality of their education. University lecturers have various tasks to accomplish and these range from teaching, research and publications, marking of tests and examinations, supervising students' research activities, supporting students through advisory roles, attending conferences, providing community services etc. In other for them to be effective and efficient, they need to acquire an appreciable level of information Communication Technology (ICT). This is necessary in order to meet up with the demands of their job. The extents to which they succeed in carrying out tasks depend on several factors such as availability of ICT, Utilization and ICT competence among lecturers.

Information communication technology (ICT) refers to various supports activities involving the creation, storage, manipulation and communication of information together with their related methods, management and application. Edom (2007) defined ICTs as the electronic tools or technological resources that are used to gather, process, store, preserve, access, disseminate and retrieve information when required with ease. Communication technology consists of both physical devices and soft-wares that are used to transfer data from one physical location to another. Computer and communication equipment can be connected to networks for handling voice, data, images, sound or even video. These information technology infrastructures provide the foundation or platform on which an organization can build its specific information system. It encompasses the computer hardware and software, the network and several other devices (video, audio, photography camera, etc) that convert information (text), images, sound, and motion and so on into common digital form. ICT has a wider spectrum of applications with enormous relevance to universities' teaching and learning activities. ICTs transform teaching and helps teachers to be more efficient and effective, thereby increasing their interests in teaching. ICTs increase teachers' emphasis on individualized instruction, and as such enable them spend more time with individual students. This helps students to carry out more independent work and gives the teacher more time to focus on teaching higher level concepts in the classroom. ICTs provide teachers with opportunities for experimenting with emerging technologies, thereby aiding in the provision of interesting and creative presentation of content. It is important to note that for university lecturers to carry out their job efficiently and effectively especially in this age of knowledge-based technology and globalization, the availability of information and communication technology (ICT) becomes imperative.

Availability of ICT refers to a state in which computer is handy for lecturers to use or service. Availability of ICT infrastructure and resources in schools is a necessary condition to the integration of ICT in education (Plomp, Anderson, Law, and Quale, 2009). Effective adoption and integration of ICT into teaching in schools depends mainly on the availability and accessibility of ICT resources such as hardware, software, etc. it is important to note that, if ICT is not available for teachers, then they will not use them and as such cannot perform

their duty efficiently and effectively. Therefore, availability of computers, updated software and hardware are key elements to successful adoption and integration of technology.

Again, Akuegwu, Ntukidem and Ntukidem (2014) on ICT the study investigated Information and Communication Technology (ICT) facilities utilization for quality instruction service delivery among universities lecturers in Nigeria with focus on Akwa Ibom and Cross River States. A total of 400 lecturers were selected for the study using stratified random sampling technique. Four hypotheses were postulated to give direction to the study. Data collection was carried out with the instrument called ICT Utilization for Instructional Service Delivery Questionnaire (I.U.I.S.D.Q.). Population t-test and independent t-test statistical analyses were used to test the hypotheses. Results obtained revealed that availability of ICT facilities for quality instructional service delivery in Universities in Akwa Ibom and Cross River States, Nigeria is significantly low except internet-connected desktop computers and institutional cybercafés; lecturers' utilization of ICT facilities is significantly low; lecturers from federal universities in the two states utilize ICT facilities more than their state universities counterparts. Lecturers from universities in Akwa Ibom State differed significantly with their Cross River State counterparts in their utilization of some of the ICT facilities.

Utilization of ICT as used in this study refers to the ability of a university lecturers to make use of the various ICT tools such as e-mail, facsimile, internet, World Wide Web, intranets, extranets, online databases and other networking technologies in the performance of their job. (The act of putting into use). Utilization according to Ngurukwem (2005) is the proportion of the available time a system is operating. By this description, ICTs can be used for various purposes, especially for achieving the objectives and establishing its global integration. Utilization can also be viewed as a fraction of a specified time period that is actually used to produce quality work. ICT utilization is the presentation and distribution of instructional content through web environment (e-teaching) to support learning and communication (Yusuf, 2005). When ICT is well utilized for instructional service delivery by the University lecturers, it can assist in reducing the lecturer's workloads on lesson preparation and instructional delivery, individualized and collaborative learning as well as learning evaluation. Thus, Ogwo (2005) asserted that utilization of ICT would aid lecturers to become learning facilitator, collaborator, coach, mentor, knowledge navigator, and co-learner and not only a dispenser of knowledge. Hence, the use of ICT in the teaching and learning process is imperative for sustainable development.

Ben (2015) conducted a study investigated the utilization of information and Communication Technologies (ICTs) and lecturers' job performance in tertiary institutions in Akwa Ibom State, Nigeria. Three research questions and three research hypotheses focusing on instruction delivery, acquisition of instructional materials and conservation as well as the preservation of instructional material resources guided the study. The survey research design was adopted for the study. 100 Agricultural Education lecturers working in both private and public tertiary institutions in Akwa Ibom State in Nigeria constituted the population of the study. Questionnaire was the instrument used for data collection. Pearson Product Moment Correlation Analysis was the statistical tool used for data analysis. The findings of the study revealed that there was significant relationship between ICT usage and lecturers' job performance in tertiary institutions in Akwa Ibom State, Nigeria. Olabiyi, Jimoh, and Akanni, (2015) conducted a study on Utilization of Information Communication Technology

(ICT) by Vocational Technology Teachers for Effective Instructional Delivery. A survey design was adopted. Two research questions and two hypotheses, tested at .05% level of significance, guided the study. The respondents for the study consisted of 210 technical teachers. Mean and standard deviation were used to answer the research questions, while t-test statistics was employed to test the hypotheses. The findings of the study revealed among others that technology teachers are expected to be skilled in using media and tools to address differences in children's learning and performance; media and technology to support learning of students with special needs; and develop performance tasks that require students to locate and analyse information as well as draw conclusion.

Instructional service delivery refers to the teaching/learning activities that take place in the classrooms which include lesson preparation, lesson presentation and curriculum development. Therefore, quality of instructional service delivery entails the extent of effectiveness to which lecturers carry their classroom teaching/learning process. The use of ICTs can assist in the organization and the structure of the course and course materials, thereby promoting rethinking and revision of curriculum and instructional strategies. The importance of Information communication technology (ICT) to instructional service delivery cannot be underestimated in the sense that the use of ICT in instructional service delivery is a relevant and functional way of providing education to learners in order to assist them imbibing the required capacity for the world of work (Kosoko-Oyedeko and Tella, 2010). Ajayi (2008) posited that with the aid of ICT, lecturers can take students beyond traditional limits, ensure their adequate participation in teaching and learning process and create vital environments to experiment and explore. Thus, ICT has been recognized to be a very powerful tool in education reform in the sense that there has been a tremendous transformation in the education sector as a result of rapid advances in Information and Communication Technology (ICT). It has radically influenced the way knowledge and information are generated, developed and transmitted. ICT has also reduced the entire world into a global village and replaced the use of physical strength in performing task with automation. Teachers, teacher trainer and educationists who are not familiar with ICT would find themselves threatened by professional obsolescence (Adewoyin, 2009). The problem is that lecturers who are confronted with this radical change experience shock, confusion and become disoriented. In other words, some lecturers are still out of touch with reality of utilizing ICT in the performance of their work roles.It is against this back drop that thisstudy intends to determine the relationship that exists between information communication technology utilization and instructional service delivery among university of Uyo lecturers with regards to availability and utilization.

Statement of the Problem

In every tertiary institution, lecturers play a significant role and act as hinge for learning. The duties of lecturers include among others instructional service delivery (teaching), evaluation and research. Studies have confirmed that lack of computer skills exists among faculties of Universities in Nigeria. As such, they are unable to incorporate the benefits of computer technology in their teaching, research and service to the University community. Less than 12 percent of the Nigerian academic curricula have digital content. This technology deficient therefore translates into a major handicap in effort to bridge Nigerian digital devices (Aniebonam, 2008). This situation has resulted in adverse

consequences such as the use of ineffective instruction delivery, mutilation of examination and other academic records, fruitless efforts at tracing and acquisition of some instructional materials leading to time and energy wastage as well as difficulty in retrieval of important information and documents. The conventional method is also subject to perennial backlogs and errors in service delivery. Hence the lecturers get so fatigued and often end in frustration, resentment and ultimately poor academic performance by students. The problem is that lecturers who are confronted with this radical change experience shock, confusion and become disoriented. In other words, some lecturers are still out of touch with reality of utilizing ICT in the performance of their work roles. The problem may be blamed on availability, utilization and competency of ICT in instructional service delivery among University of Uyo lecturers. Therefore, the problem of this study is to determine whether there is any relationship between ICT and Instructional Service Delivery among University of Uyo, Lecturers in Akwa Ibom State?

Purpose of the Study

The purpose of this study was to examine the relationship between information and communication technology and instructional service delivery among lecturers in the University of Uyo, Akwa Ibom State. Specifically the study seeks to:

1. Determine the relationship between availability of ICT and instructional service delivery among University of Uyo lecturers
2. Determine the relationship between utilization of ICT and instructional service delivery among University of Uyo lecturers

Research Questions:

The following research questions were raised to guide the study:

1. What is the relationship between availability of ICT and instructional service delivery of university of Uyo lecturers?
2. What is the relationship between utilization of ICT and instructional service delivery of university of Uyo lecturers?

Null Hypotheses

The following null hypotheses were formulated to guide the study:

1. There is no significant relationship between availability of ICT and instructional service delivery of University of Uyo lecturers.
2. There is no significant relationship between utilization of ICT and instructional service delivery of University of Uyo lecturers

Methodology

This study adopted ex-post facto design. The study area for this study is University of Uyo (UNIUYO).The University is located in Uyo, capital of Akwa Ibom State, Nigeria. The population of this study consisted of all the 1270 lecturers in the University of Uyo, Uyo Akwa Ibom State. (Source: Directorate of personnel Affairs University of Uyo, 2015/ 2016) This group was considered as the target population of this study.The sample of this study consisted of 305 respondents which represented 24% of the study population selected from 20 departments. A multi-stage sampling technique was used to draw the sample from the study population. This technique was adopted because it allowed the use of other sampling techniques in the study such that all the departments in the University can be equally represented since the population of lecturers in each of the department are not the same. At first, a cluster sampling technique was used to cluster the population into twelve (12)

Faculties and eighty one (81) Departments. In the second stage proportionate sampling techniques was used to select 20 department (25%) and 305 lecturers (24%) of their populations. Simple Random Sampling Techniquesusing hat and draw method was used in selecting the lecturers from the selected departments. Nine hundred and fifteen students representing 4.88% of students population were purposively selected to rate their lecturers instructional service delivery, three students rated one lecturer. Students were only used as raters, they did not constitute the population of the study. The reason for choice of students as raters was to remove the bias of the lecturers rating their level of instructional service delivery. The sample frame for the study is presented in Table.1.

Table 1: Sample Frame for Lecturers in University of Uyo, Uyo Akwa Ibom State

S/N	Names of Faculties	No.of Depts.	25% of Depts. Sampled	No of Lecturers.	24% of selected Lecturers Selected per department(4.88%)	Students per
1.	Faculty of Education	8	2	151	36	134
2.	Faculty of Agriculture	8	2	136	33	52
3.	Faculty of Arts	9	2	171	41	166
4.	Faculty of Basic Medical	3	1	54	13	39
5.	Faculty of Business Administration	5	1	62	15	57
6.	Faculty of Clinical Science	16	4	105	25	18
7.	Faculty of Engineering	5	1	132	32	142
8.	Faculty of Environmental Studies	7	2	105	25	52
9.	Faculty of Law	3	1	26	6	40
10.	Faculty of Pharmacy	5	1	65	16	26
11.	Faculty of Science	7	2	161	39	86
12.	Faculty of Social Science	5	1	101	24	103
Total	**12**	**81**	**20**	**1270**	**305**	**915**

Source: Directorate of Personnel 2017. Key: Depts.-Department; No.-Number

Instrumentation

The researcher developed two survey instruments titled "Information Communication Technology Checklist (ICTCQ) and Instructional Service Delivery Questionnaire (ISDQ) for data collection in the study. Information and Communication Technology Checklist (ICTC) contained 30 items which the researcher used the Lecturers to measure the extent of utilization of ICT by them in the University while the second instrument was used by the researcher to measure the utilization of ICT by lecturers for instructional service delivery. Ten items were used for each of the sub-variables these were; knowledge of the subject matter, lesson preparation and lesson presentation. Lecturers were scored using 4 points rating scale; Part 1 sought information on the available ICT facilities for instructional delivery. The responses to the ten (10) ICT facilities included, Highly Available (HA) 'Available' (A) Fairly Available (FA) and 'Not Available' (NA). Part 2 dealt with the degree of utilization of some of the ICT facilities mentioned in Part 2. The responses were ranked as 'very frequently', 'frequently' Not frequent and 'not at all'. The Instructional Service Delivery Questionnaire (ISDQ) contained 10 items reflecting the lecturers' knowledge of the subject matter, lesson preparation and lesson presentation. The second instrument were given to the students to rate their lecturers on the use of ICT for instructional service delivery. The

responses to this were "strongly agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD)' at four point rating scale. This prevented the lecturers from being biased. More reliable information was given by the students whom they teach. The instruments were validated by two validates in Measurement and Evaluation in the Department of Educational Foundations, and three validates in Educational Management and Planning, Faculty of Education, University of Uyo. Cronbach's Alpha was used to establish the reliability of the instrument (ICTUCQ). To this end, the instrument (ICTUCQ) was administered one to 20 randomly select lecturers who did not participate in the actual study. The part of the ICTUCQ tested was the Utilization of the ICT. The result of the analysis shows that the reliability indices of .71 for ICTUCQ and .82 for instructional service delivery Questionnaire (ISDQ). This reliability index was considered high enough to ensure the reliability of the study findings as they were found fit enough to elicit the desired information for the study respondents.

Method of Data Analysis

Pearson Product Moment Correlation (PPMC) analysis was used to answer the research questions and in testing of null hypotheses at .05 level of significance. In testing the null hypotheses the calculated-r value and critical-r value were compared at 0.05 level of significance. If the calculated-r value was greater than the critical-r value the null hypothesis was rejected while if the calculated-r value was less than the critical-r value the null hypothesis was retained.

Decision Rule

According to Evans in Condouris, Meyer and Tager-fluberg (2003), the following were used to determine the strength / extent of coefficient of relationship.

The models interpretations are as follows:

+1.00	perfect positive relationship
+0.41-0.99	High positive relationship
+0.10-0.39	Low (weak) positive relationship
-0.09-0.09	Very weak negative relationship
-0.10-0.39	Low weak negative relationship
-0.40-0.99	High (strong) negative relationship
-1.00	Perfect negative relationship

Results

Research Question 1: What is the relationship between availability of ICT and instructional service delivery among University of Uyo lecturers?

Table 1: Pearson's product moment correlation analysis of the relationship between availability of ICT and instructional service delivery of University lecturers *(N=300)*

Variables	x y	x^2 $\sum y^2$	xy	r – cal	Remark
Availability of ICT (X)	7954	254658			
			17414	.275	Low Positive relationship
Instructional service(Y) Delivery	9460	312850			

Data as presented in Table 1 reveals the strength of the relationship between ICT availability and instructional service delivery among University of Uyo lecturers. The result

showed a calculated r -value of .275 shows a low positive relationship, this indicates that, there is a low positive relationship between availability of ICT and instructional service delivery among University of Uyo lecturers. The positive relationship occurs because increase in ICT utilization by lecturers is accompanied by an increase in their instructional service delivery.

Research Questions2: What is the relationship between utilization of ICT and instructional service delivery of University of Uyo, lecturers?

Table 2: Pearson's product moment correlation analysis of the relationship between utilization of ICT and instructional service delivery of University of Uyo lecturers *(N=300)*

Variables	x y	x^2 $\sum y^2$	xy	r - cal	Remark
Utilization of ICT (X)	7962	253028			
			25376	.156	Low positive relationship
Instructional service (Y) Delivery	9460	312850			

Data as presented in Table 2 reveals the strength of the relationship between ICT and instructional service delivery among University of Uyo lecturers. The calculated -r value of .156 indicates a low positive relationship between the two variables. It value indicates that, there is a low positive relationship between utilization of ICT instructional service delivery among University of Uyo lecturers. This result answers the research question two (2) which states "What is the relationship between utilization of ICT and instructional service delivery of University of Uyo, lecturers? This means that, lecturers utilization of ICT enhance effective instructional service delivery.

Testing of Hypotheses
Null Hypothesis 1: There is no significant relationship between availability of ICT and Instructional service delivery among University of Uyo, Lecturers.

Table3: Result of Analysis of Variance of Pearson Product Moment on relationship between Availability of ICT and Instructional service delivery among University of Uyo lecturers *(N=300)*

Variables	x y	x^2 $\sum y^2$	xy	r - cal	r-crit	Decision at P= .05
Availability of ICT	7954	254658				
				.275	.133	*
			17414			
Instructional service	9460	312850				

* Significant at P= .05; Level = .113; df = 300

Result in this Table 3 indicates that the calculated- r value of .275 is greater than the critical- r value of .113 at .05 level of significance with 300 degree of freedom. The result is significant; therefore, the null hypothesis which states that 'there is no significant relationship between availability of ICT and instructional service delivery' was rejected. The result means that availability of ICT is significantly related to instructional service delivery of university of Uyo lecturers.

NullHypothesis 2: There is no significant relationship between utilization of ICT and Instructional service delivery among University of Uyo, Lecturers.

Table 4: Result of Analysis of variance of Pearson Product Moment on relationship between utilization of ICT and instructional service delivery among University of Uyo lecturers (*N=300)*

Variables	x y	x^2 $\sum y^2$	xy	r - cal	r-crit at P= .05	Decision
Utilization of ICT (X)	7962	253028				
			25376	.156	.113	*
Instructional service (Y)	9460	312850				

* Significant at P= .05; Level = .113; df = 300

Results in this Table 4 indicated that the calculated r – value .156 is greater than the critical r-value of .113 at .05 level of significance with 300 degree of freedom. The result is significant; therefore, the null hypothesis which states that there is no significant relationship between lCT utilization and instructional service delivery was rejected. The result means that utilisation of ICT is significantly related to instructional service delivery of University of Uyo lecturers.

Discussion of Findings

The discussions presented below were done under the following sub-headings of the null hypotheses tested in the study.

Availability of ICT and Instructional Service delivery

The result of the analysis presented in null hypothesis 1 revealed that the availability of ICT is significantly related to Instructional service delivery of University of Uyo, lecturers. The result implies that when ICT is available it will increase lecturers' level of lesson preparation, presentation and content development. Thus, availability of ICT such as cameras, video recorders and multimedia projectors for lecturers enables all the relevant information/data about students to be stored in one folder which could be accessed at once for decisions and actions as required. This could also prevent mutilation or distortion of data of students results as at when it is kept in books, since there will be a back-up device when ICT is used.

The findings of this study agrees with the findings of Akuegwu et al (2011) who conducted a study to investigates Information and Communication Technology (ICT) facilities utilization for quality instruction service delivery, and found among others that

availability of ICT facilities for quality instructional service delivery in Universities in Akwa Ibom and Cross River States, Nigeria is significantly low. The results obtained revealed that availability and utilization of ICT facilities for effective instructional delivery is significantly low.

Utilization of ICT and Instructional Service delivery

Analysis of data for null hypothesis 2 revealed that Utilization of ICT is significantly related to Instructional service delivery of University of Uyo, lecturers. The result implies that there is a significant relationship between utilization of ICT and instructional service delivery of lecturers. With this result, the null hypothesis was rejected while the alternate was retained. The result came out positive because the more lecturers utilize ICT gadgets the more their instructional effectiveness increases in quality and quantity in University of Uyo. The use of ICT facilities such as (cyber café, data base, projector, laptops, e-library, camera, video recorder) etc in instructional service delivery helps in monitoring activities carried out by the school lecturer instructional purposes. These prevent corruption and malpractices.

The finding of this hypothesis is in line with the findings of Ben (2015) who conducted a study on the utilization of information and Communication Technologies (ICTs) and lecturers' job performance in tertiary institutions in Akwa Ibom State, Nigeria. The findings of the study revealed that there was significant relationship between ICT usage and lecturers' job performance in tertiary institutions in Akwa Ibom State, Nigeria. The findings of this hypothesis also agree with the findings of Olabiyi, et al (2015) conducted a study on Utilization of Information Communication Technology (ICT) by Vocational Technology Teachers for Effective Instructional Delivery. The findings of the study revealed among others that technology teachers are expected to be skilled in using media and tools to address differences in children's learning and performance; media and technology to support learning of students with special needs; and develop performance tasks that require students to locate and analyse information as well as draw conclusion.

Conclusion

It was concluded based on the findings that information and communication technology significantly relates to instructional service delivery among lecturers in University of Uyo, Akwa Ibom State. The availability and utilization of ICT will enhance lecturers' effectiveness for instructional service delivery. Therefore, effective instructional service delivery is a function of lecturers' effectiveness in the utilization of ICT gadgets such as Cyber café, Data base, Multimedia projector, Lap tops computers, E-library, Still/Digital camera, TV/Radio projector, Video recorder, Internet facility, E-mail etc.

Recommendations

This study recommends among others that,

1. Information communication technology gadgets should be made available, facilities establish also ensuring effective internet connectivity and this will provide opportunities to educational leapfrog into the modern era.
2. Workshop, training programs on the utilization of ICT facilities should be organized for lecturers at all levels of education.

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