ASUU JOURNAL OF HUMANITIES
A Journal of Research and Development
Vol 4, No. 2, December, 2017; pp.210-224

Evaluating Ict Integration and Implementation on Student's Proficiency in South East Universities in Nigeria

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Abstract

This study tried to examine how the integration and implementation of information and communication technology (ICT) in teaching learning has impacted on proficiency in the use of ICT by students in the universities in South East of Nigeria. The design of the study is a descriptive survey which involved nine universities comprising of three federal, three state and three private universities purposely from the area of study. A sample of 2,868 graduating students were selected from the population multiple random sampling. The instrument for data collection was a 25-item question based on the research question with Likert-scale four point rating. The data generated was analyzed with simple descriptive statistics. Findings showed that almost all the universities are aware of ICT and its advantages to education but the full integration and implementation in the universities is not encouraging due to insufficient fund, inadequate facilities, lack of experience staff and others. These problems have negatively affected many students academically. Parents Teachers Association (PTA) and other nongovernmental organizations were pleaded to support Nigerian government to integrate and implement ICT in the teaching, learning and research.

Keywords: Information and communication technology, integration, students, teachers, university education, classroom

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Introduction

The Internet in conjunction with World Wide Web which was invented by Tim Berners-Lee has facilitated information sharing among scientists and people from different works of life thus leaving an indelible mark on educational system at all stages worldwide (Wishart, 2010). Technologies like telephone, television, cassettes, radio, digital personal assistants (PDAs), web2.0, computers, satellites and others are all assisting to revolutionize education and science. Nevertheless, the initial introduction of these technologies created some level of impact on the general education practice, functioning effectively but did not address properly the process of teacher's interaction with the learners or students. Just as Livingstone (2012) said that, ICT is universally seen as enhancing knowledge both at home and school,and this led to its rapid diffusion and implementation all through the civilized societies. Rosenblit (2005) noted that the positive predictions of information and communication technology (ICT) as to transform and restructure education at tertiary level are yet to materialize especially in the developing nations. Livingstone (2012) agreed that positive change and opportunities expected from ICT will come only when curriculum structures, materials, educational infrastructures, teacher training, modes of assessment and classroom practices must have been redesign at all levels.

Without doubt, the internet has broken through into teaching and learning more than any other technology the human mind could think of, apart from printed materials. The internet and mostly, the World Wide Web are complementing each other, depending on their measure and their level of educational impact. The internet which is also a part of information and communication technology (ICT) has transformed reading books to e-reading books which improves the performance of the learners (university students).The integration of ICT into the educational system according to Altun, Kalayci & Avci, (2011) is a process of utilizing hardware and software which consist of information from the web, CD-ROMs multimedia programs, teaching and learning objects and other educational tools to improve students' learning skills. ICT is not only meant for education but also for enhancing economic development. Koçak-Usluel, Mumcu-Kuşkaya & Demiraslan, (2007) as cited in Altun *et,al.* (2011)

concluded that the focal point of the meaning of ICT is that it is an instrument that helps to achieve learning objectives while Drent & Meelissen (2007) cited in Kwabena, Kwame & Kyere-Djan (2013) suggested that ICT should also be assumed as a supporting agent for educational goals and objectives which link to skills for assessing useful information, solving problems, communication, cooperation etcetera. Based on the explanations of ICT integration, ICT can be regarded as agent of positive change for educational enhancement.

The application of ICT in the classroom or teaching and learning has positive and strong responsiveness support in any nation's development. Notwithstanding the resistance to its integration, ICT in the field of teaching and learning had been regarded as a commercial development and normal extension of e-commerce. Tony Bates (2008) in one of his studies concluded that Charles Chambers optimistically confirmed that education will be ICT dependent in future and popularly called "killer application". The Internet which is part of ICT facilities in e-learning is very crucial for enhancing educational quality and improving the work force quality. There is thus a strong link between ICT usage and the improvement of teaching and learning.

Many tertiary institutions in the South East geopolitical zone of Nigeria have invested much in ICT projects yet greater part of the students from these institutions don't seem to be measuring up to the expected ICT utilization standard in their project research and class assignments. This has affected their academic careers and future expectations which are made manifest during job interviews and over sea trips for further studies. For example, most students from the universities in the South East of Nigeria are not conversant with connectivity for e-leaning during lectures or classroom activities. Lectures are mostly face-to-face relationship with the teacher and students and marker-board method until their graduation. These institutions find it difficult to provide effective functional virtual libraries for students to carry out research and class assignments so as to expand their knowledge or interact with other researchers worldwide. This has led to some of the students to always search for already submitted approved projects mostly in the libraries in the various universities to plagiarize. Many students that graduated from the higher institutions in Nigeria nowadays find it difficult to carry out

research because they are not properly taught and supervised. Moreover, most universities lack adequate facilities for valuable virtual libraries. Thus these students cannot effectively apply ICT in their classrooms, career and further studies due to insufficient ICT integration by the stakeholders. It is an agonizing experience for these students to boldly defend their various areas of specialization authoritatively because of inadequate background in research. This problem is disturbing and requires urgent attention by the government, policy makers and chief executives of higher institutions. The National ICT Policy (Federal Republic of Nigeria, 2012) was predicated on a Knowledge-based society whose task is to fully integrate ICT into her educational system and economic development so as to transform her economy. This study therefore is aimed at identifying the challenges that has led to the gap between the national ICT policy and its implementation in the South east universities in Nigeria.

Statement of the problem

It is observed that graduates from many of our universities find it difficult to apply ICT during further studies. They do not perform excellently in interviews especially when ICT is involved and above all find it difficult to apply ICT in carrying out a simple research study without fidgeting. Moreover, the undergraduate students always look for who will help them out when they are given an assignment that involves the use of ICT information. Many students do not make use of the library until they finish their course work. It is noticeable that students' responses to class assignments, research and project work often times seem shallow because of inability to use ICT for their research study. These challenges may have arisen due to inadequate access to internet facilities and their use for proper research work in the institutions of higher learning in Nigeria. Therefore, this study seeks to evaluate ICT integration and implementation, its impact on student's proficiency in the use of ICT in universities in South east Nigeria.

Scope of the Study

This study covers the students from all the universities in the South east of Nigeria. South East Nigeria consists of Abia, Anambra,

Ebonyi, Enugu and Imo State. It has common boundary with Bayelsa State in the South, Kogi State in the North, and Delta State in the South of Nigeria. South East has universities which are made up of federal, state and private universities. The federal universities were purposely selected for the study are: Federal University of Technology Owerri (FUTO) Imo State, Michael Okpara University of Agriculture Umudike (MOUAU) Abia State, University of Nigeria Nsukka Enugu State, and Nnamdi Azikiwe University (NAU) Awka Anambra State, while the state universities are: Abia State University Uturu (ABSU), Anambra State University Uli, Ebonyi State University (EBSU), Enugu State University and Imo State University, and the private universities are: Caritas University Enugu State, Madonna University Onitsha Anambra State, Renaissance University Enugu State Tansian Umunya Anambra State and Veritas University Obehie Abia State.

Purpose of the Study

The purpose of this study is to evaluate ICT integration and implementation and its impact on student's proficiency in the use of ICT in the universities in South East of Nigeria. More explicitly this research tries to:

- Find out if there are functional ICT facilities for teaching and learning in these universities
- To find out if the students are utilizing the ICT facilities for learning and research
- To find out from the students the extent of their proficiency in the use of packages like excel, Microsoft Word etc for academic purposes
- Make some recommendations as a result of the findings of the study.

The study was guided by finding answers to the following research questions.

1) Are there available functional ICT facilities for effective learning by students in the South east universities in Nigeria?
2) Are there enough functional virtual libraries for learning and research in universities in the South east of Nigeria?
3) Are the students effectively utilizing electronic learning in

universities in the South east of Nigeria?

4) How proficient are students proficient in the use of some packages like excel, Microsoft Word etc for assignment, project and research?
5) What are the possible suggestions that would enable proper integration and implementation of ICT in teaching and learning in schools.

Methodology

The study adopted the descriptive survey design. The target population 24,264 graduating students are from the state, federal and private universities in the South east, Nigeria consisting of 14 universities. This class of students was chosen because they are on the verge of graduating and they have mastered all the universities' intricacies as per ICT integration and implementation. These students will also reveal true situation and give first hand information about ICT integration and utilization in their various universities.

Nine out of the14 universities that were used for this study were selected by cluster-random sampling technique. They consist of 3 private, 3state and 3federal universities respectively making it a total of nine universities. The names of the private universities are Veritas University Obehie, Madonna University and Renaissance University. The state universities are Imo State University (IMSU), Ebonyi State University (EBSU) and ABIA State University Uturu (ABSU). While the federal universities comprise University of Nigeria Nsukka (U.N.N), Michael Okpara University of Agriculture Umudike (MOUAU) and Federal University of Technology Owerri (FUTO). A sample of 2,868 students were selected for the study from the 9 universities by stratified random sampling representing 10% of the total population.

The instrument for data collection a validity 15-item questionnaire called "Student ICT Availability, Usage and Self Assessment Questionnaire (I.A.U.S.A.Q)" with a reliability coefficient of 0.81.

Fifteen item questionnaire called "Student ICT Availability, Usage and Self Assessment Questionnaire (I.A.U.S.A.Q)" was administered to 200 students from a different university for scrutiny and validity purposes. And the test was re-administered again to the same university after two weeks. The two results were statistically

correlated using Pearson Product Moment. The coefficient of the instrument is 0.81. The questionnaire was administered to the 2,868 students from the selected university for the study to obtain their opinions which were rated on a four point Likert scale.
Very High (VH) =4, Moderate (M) =3, Low (L) =2, Very Low (VL) =1.
Descriptive statistics of frequency was used to analyze the data.

Results

Table 1: Students' Responses on Availability of ICT Facilities for Effective Learning in the various Universities in South east of Nigeria

UNIVERSITIES	VERY HIGH (VH)	MODERATE (M)	LOW (L)	VERY LOW (LV)	No of Students
VERITAS	11	40	34	10	95
RENAISSANCE	2	9	23	6	40
MADONNA	39	64	41	8	152
IMSU	49	96	170	237	552
ABSU	58	140	240	142	580
EBSU	85	121	45	25	276
NSUKKA	100	138	178	41	457
MOUAU	31	102	107	80	320
FUTO	44	117	125	110	396
	419	827	963	659	2,868

From table1, 2,868 students responded to the questionnaire, 'LOW' (L) has 963 highest response of inadequate ICT facilities, followed by 'Very Low" which has 659 responses. This shows that there is inadequate availability of well equipped functional ICT facilities which students from these universities could use for effective learning and research.

Table 2: Students' Responses on the Effective utilization of Electronic learning in the various Universities in South east of Nigeria

UNIVERSITIES	VERY HIGH	MODERATE	LOW	VERY LOW	No of Students
VERITAS	10	32	42	11	95
RENAISSANCE	3	6	17	14	40
MADONNA	16	22	50	40	128
IMSU	50	95	180	251	576
ABSU	51	130	188	211	580
EBSU	26	41	89	120	276
NSUKKA	109	168	147	33	457
MOUAU	22	80	124	94	320
FUTO	45	79	152	120	396
∑F	332	653	989	894	2,868

Table 2 contains 2,868 responses, 'LOW' (L) has the highest occurance 989 followed by 'Very Low' (VL) 894 . This shows that there is unsatisfactory effective integration of e-learning by students in universities in the South east of Nigeria due to insufficient facilities.

Table 3 Students' Responses on Enough Functional Virtual library in the Respective Universities in South east of Nigeria

UNIVERSITIES	VERY HIGH	MODERATE	LOW	VERY LOW	No of Students
VERITAS	10	30	42	13	95
RENAISSANCE	3	10	20	7	40
MADONNA	16	33	49	30	128
IMSU	61	245	181	89	576
ABSU	51	125	214	190	580
EBSU	40	90	126	20	276
NSUKKA	35	145	167	110	457
MOUAU	17	90	128	85	320
FUTO	44	150	112	90	396
∑F	277	918	1039	634	2868

Table 3 shows that' LOW' (L) has the maximum response. The response display that there is inadequate functional virtual library for learning and research by students in various universities. On the other hand, this illustrates that virtual library needed to be equipped and automated with ICT facilities to enhance academic activities.

Table 4: Students' Responses on the Extent of Proficiency in using packages like Microsoft word, excel etc in the universities in South east of Nigeria

UNIVERSITIES	VERY HIGH	MODERATE	LOW	VERY LOW	No of Students
VERITAS	29	44	9	13	95
RENAISSANCE	10	2	20	8	40
MADONNA	51	40	29	8	128
IMSU	49	100	178	249	576
ABSU	49	186	213	132	580
EBSU	84	72	94	26	276
NSUKKA	82	100	179	96	457
MOUAU	71	91	127	31	320
FUTO	46	78	120	152	396
∑F	471	713	969	715	2,868

Table 4 shows that "LOW" (L) has the highest students response value 969. This shows that the students' proficiency in the use of Microsoft Word Packages is not encouraging.

Discussion

Findings on the availability of functional ICT facilities for effective learning showed that there are inadequate ICT facilities in the universities in the South east for effective teaching and learning. This is in agreement with the findings of Hamilton-Ekeke & Mbachu (2015) which confirmed that many Nigerian tertiary institutions lack adequate ICT facilities and students themselves find it difficult to afford a laptop. Hamilton-Ekeke & Mbachu (2015) concluded that ICT facilities inadequacy has affected e-learning implementation as it is seen in this study that e-learning is not applied in the teaching and learning. Anene, Imam & Odumuh (2014) also reported that deficiencies in ICT infrastructure has hindered e-learning in many institutions in Nigeria. The available ICT facilities are not adequate to help the students in their class room work like assignments, interacting with their fellow students academically through social media, carry out research work etcetera. The current challenge is how to provide the facilities and still maintain these facilities to enhance and achieve ICT educational objectives in the academic settings.

The result on effective use of electronic learning by the students showed that e-learning to a large extent is not applied in the teaching and learning of students in from south east universities. Anene *et, al.* (2014) reported in the study on e-learning problem and prospect in Nigeria that the majority of the students in the tertiary institutions have neither e-learning library domain nor online discussion with their lecturers. Adegun (2007) observed that e-learning in Nigerian academic set up is still at elementary stage. The result of slow integration and implementation of ICT in the educational system has to some extent contributed to Nigeria's lagging behind in her human economic development. Adebayo (2008) observed that students and teachers are still depending on boxes of chalks and talk technique in the classrooms in exchange of sound computer hardware with up and running internet connectivity all through their duration in the tertiary institutions.

Anene *et. al* (2014) concluded that many schools in Nigeria are keen to embrace e-learning but challenges like inadequate infrastructure, high cost of bandwidth, proficient ICT staff, poor power supply and others have immensely contributed to its setback.

Most of the e-libraries are ghost of themselves due to inadequate computers, low internet bandwidth and insufficient experience ICT personnel. Emojorho & Nwalo (2009) concluded that there are low ICT facilities in Nigerian libraries and the librarians are not competent enough to render library automated services to the users because of deficiency in ICT skills. There must be grossly adequate facilities for meaningful research development to take place in every virtual library else the students will not know their left from their right. Okite-Amughoro, Makgahlela & Bopape (2014) confirmed in their study on information resources for academic research that the postgraduate students in Delta State University could not carry out optimal academic research work due to limited access to digitalized information resources. The virtual libraries are not working effectively. Oghuiyi (2015) concludes that lack of computer skills and facilities with inadequate training hinder students in the South-Western universities from using e-libraries.

The study also showed that many students are not proficient in the use of Microsoft words to write their projects. This is as a result of lack of training as there is no mapped out programme to train the students. It is observed in their career as many fail interviews for job opportunity and some find it difficult to meet up with the specified time during further study. Ogbuiyi observed that only about 52.1% of students are computer literate which they acquired through self-teaching. It is practically seen that due to the fact that the students are not proficient in the use of Microsoft word packages, most of the students contract out their projects, seminars, assignments to cyber cafes and computer typing offices around the universities premises to type for them.

Recommendations

- Non government Organizations (NGOs), Parent Teachers Association (PTA) and other agencies should assist the government to provide more ICT facilities to enable tertiary institutions to enhance education
- Government should make e-learning the target of every tertiary institution so as to reduce the workload on the students as well as the teachers. This could be achieved by including some of the ICT charges in the students school fees in a mild format
- University authorities should use part of the Tertiary Education Trust Fund (TETFund) allocation fund to set up standard and functional e-libraries in the universities to enable more academic work and research. This is to enable the students of various universities in Nigeria to be academically sound and conduct useful research
- There should be mandatory computer training for both students and teachers to enable them to be proficient in the use of Microsoft word and other packages to carry out academic research and also effectively apply it in their career and further studies.

Conclusion

This study reveals that Nigerian students are losing much skills and knowledge by not applying ICT in their academics when compared with their counterparts in other countries. If ICT is well integrated

and implemented in our tertiary institutions as it is done in the developed nations. Nigerian students will perform better in their careers, further studies and research work like their counterparts in the developed countries.

Nigeria as a country has the enthusiasm to be among the nations that are educationally sound but the problem is that they have ignored to allocate their educational system enough fund . Nigeria has interesting series of educational policies like that of ICT policy which have created ICT awareness in her educational sector, but the challenge still remains on the integration and implementation. The integration and implementation of ICT in Nigerian universities is a project that cannot be ignored. The National Universities Commission (NUC), education policy makers, curriculum experts, university governing councils and the government all together needed to re-enforce their efforts to make sure that ICT is integrated in every sector of education especially the tertiary institutions so as to achieve the best. The findings of this study also revealed that ICT had been incorporated in our educational system curriculum but has not keen strictly implemented in the classroom so as to yield the expected results in the schools.

In an academic setting where there is full integration of ICT in teaching and learning, lecturers and students are the most experienced users for free flow of classroom work and research. If lecturers are proficient in the use of ICT for teaching, this will motivate the students to automatically struggle to learn how to apply ICT in learning and vice versa. Students have much regards for ICT so as to utilize it for project research, group collaborative study, carrying out class assignments and other necessary academic activities, (Ramboll Management, 2006). With the help of ICT, lecturers tend towards being more of an advisor, vital dialogue associates and specific subject domain organizers, (ITU, 2004 sited in Quaye*, et al*. (2015)). This will benefit the students the more. A particular ICT application impact relies deeply upon the ability of students to make use of it resourcefully for academic purposes. It is discovered that lecturers find it difficult to utilize the inspired potentials of ICT and yet engage students vigorously in the research and knowledge creation. ICT which has been integrated in the

educational system is still at the infancy stage as a result of inadequate skills, insufficient power supply, unsteady internet connectivity, lack of fund to procure hardware facilities, (Aduwa-Ogiegbaen & Iyamu, 2005).

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