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The Place of Information, Communication and Technology (ICT) in Teaching and Learning in Nigerian Tertiary Institutions

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Abstract ICT is an accepted acronym of the word Information and Communication Technology. It include diverse set of technology and technological tools used to communicate, disseminates, store and manage information. The use of ICT in schools by staff and students have become a necessity as it can be used to improve the quality of teaching and learning in any tertiary institution. ICT is also a key tool that is having a revolutionary impact on educational methodology globally; however, this revolution is not adopted and widespread in Nigerian universities, it needs to be strengthening to reach the large percentage of universities in the country as only a few universities can boast of ICT and internet connectivity on campus. This study investigated the availability of ICT facilities as well as its usage in one of the newest government owned universities in the oil rich Niger Delta region of Nigeria. The research design was a survey research with a sample size of 843 undergraduate students from three faculties out of the six faculties in the Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria. Quantitative and qualitative methods of data collection were employed in this study. The quantitative method of data collection involved questionnaire while the qualitative method of data collection involved interview schedule. These two methods of research were adopted in this study in order to triangulate the findings from both instruments. The face and content validity of the instrument was validated by two experts in measurement and evaluation while a reliability index of 0.86 was obtained using Pearson Product Moment Correlation Coefficient after the instrument has been administered twice to the same respondents not involved in the study (test re-test method of determining reliability). The research questions posited for this study were analysed using percentages while the hypotheses were tested using chi-square. The study revealed that basic ICT facilities like computers are unavailable, students are unable to afford personal laptop, this has grossly affected e-learning and e-communication channels like email, e-board, internet and organized networking system between staff and students. It is therefore recommended that there should be provision of student workstation and the inculcation of ICT in the curriculum to enable students to be computer literates so they can accept and use ICT in their everyday studies. It is interesting to note that, even in today's globalizing world, traditional education still continues to exist in the form of socialization, cultural instruction and vocational training. Be it as it may, globalization has come to stay as it reflects the idea that life is a process and that human or a nation's existence is a process that unfolds with time.

Keywords: *ICT, Nigeria, Tertiary Institution, global, usability, acceptability*

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1. Introduction

The introduction of ICT into universities clearly changed the way education is conducted. It paves the way for a new pedagogical approach, where students are expected to play more active role than before (i.e. getting more involved in the learning process, being active participants of knowledge creation not mere recipients of knowledge). Using information and known ICT tools in education, students should be able to communicate, create preservatives in PowerPoint, and interact with colleagues and teachers using technology. According to Yusuf (2005), 'culture and society which are major factors of education, have adjusted to meet the challenges of the knowledge age'. These prevalence and rapid development in ICT has transformed human society from the information age to the knowledge age. The use of ICT in education by staffs and students is becoming a necessity as it can be used to improve the quality of teaching and learning in any tertiary institution.

Oduma (2013) likened ICT to a utility like water and electricity which plays a major role in education and has impacted on the quality and quantity of teaching and learning as well as research in educational methodology to

initiate a new age in education. Internet as a digital tool of ICT has strengthen teaching and learning as it provides powerful resources and services for students, thereby enabling them meet their educational needs, it also allows for networking among students and teachers to facilitate exchange of ideas and improve opportunities for connecting schools to the world as learning is expanding beyond the classroom, so real life context can be established (Dotimi and Hamilton-Ekeke, 2013).

Etim, Akpan, and Ibok (2013) defined the internet as the inter connection of system of subsystems of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or information. Dickson (2012) noted that the internet can be seen to provide resources and services that are used for accessing, processing, gathering, manipulation and presenting or communicating information. The use of internet in education is now growing in all parts of the world and their application is becoming an integral part of education in many parts of the globe. Abascal and Nicolle (2005) indicated that most developed countries have exploited the potential of internet to transform their education landscape.

Nigeria as a country is yet to make available and use ICTs to transform its' educational system. Ololube (2007, 2008) indicated the benefits of internet use in education, and also found positive and moderately high achievement at all educational level, from computer use in school subjects, which allows students to focus on strategies and interpretation of answers rather than spend time on tedious computational calculation. It is then generally believed that the use of internet in the educational sector in a developing nation like Nigeria would help bridge the information barrier between developed and developing nations. However, improved access does not result in improved utilization in educational institutions.

ICTs as a field of education has been there in the form of teaching aids or apparatus, as it was earlier called (Abimbade, 2002). But current achievement in the field of ICT has offered tremendous opportunities for learning by electronic means, the use of e-learning and internet technology in learning. It is seen as a means to improve accessibility, efficiency and quality learning. The 21st century ICTs has stretched educational boundaries and created new ones, some of which are internet, e-learning and m-learning. The concept of mobile learning (m-learning) is facilitated by mobile devices. M-learning according to Sharples, Arnedillo Sánchez, Milrad and Vavoula (2007) is an emergent paradigm in a state of intense development fuelled by technological streams, good competition power, good communication and development intelligent interface. Dickson (2012) defined mobile learning as the intersection of mobile computing and communication device and e-learning (learning facilitated and supported through the use of ICT). M-learning (which is mobile-learning) takes place through wireless devices like mobile phones, Ipad, Mp3 player, personal digital assistance etc. According to Sharples *et al*. (2007) M-learning now plays a great role in activity-based and technology base learning. Despite the rapid growth of e-learning, most educational institutions lack consolidated and comprehensive curricula for training in ICT. The provision of appropriate framework for full integration of ICTs into the educational system of any nation's university is the responsibility of the federal or central government (Yusuf, 2006), for the proper integration of ICTs and related technology into the educational system there is need for a comprehensive policy document to serve as a guide for stakeholders in the education sector, competence, adequate funding, provision of infrastructural facilities, institutional factions, environmental factors, students attitude, skill, students interest to usage. These factors help determine the successful use of ICT for information retrieval and sharing in education (Gillwald and Esselaar,2005).

There have been some studies on the factors influencing the adoption and integration of ICTs for educational purposes among others (Oladokun, 2012). In spite of the benefits derived from ICT use, Nigeria is still disadvantageous over their counterparts elsewhere (Ololube, Eke, Uzorka, Ekpenyong and Nte 2009). Thus this study intends to specifically focus on the adoption of ICT by provision of facilities and usage for educational revolution in universities with specific focus on the students of Niger Delta University, Wilberforce Island, Bayelsa State, one of the States in the South-South geo-political zone of Nigeria.

1.1. Statement of Problem

The influence of ICT to education and educational activities worldwide is very glaring, especially in the reliance of ICT facilities to institute the expected change in teaching and learning. The development has placed a pressure on educators to transform schools through technology and ICTs. The availability of ICT facilities and its utilization is a key factor for the adoption of ICT for educational activities such as teaching and learning. The availability and utilization of ICTs on the other hand is a major challenge across higher institutions of learning Hamilton-Ekeke (2011). But if academic institutions fully adopt the use of ICTs in higher institutions of learning, then goals would be achieved within a short period of time. Hence this study is focused on the adoption of ICT for an educational revolution in Niger Delta University, Wilberforce Island, Bayelsa State.

1.2. Research Questions

The variables investigated in this study are availability, acceptability and utilization of ICT facilities in learning. The following three research questions are posited for this study:

1. Are ICT facilities available for students
2. Do students readily accept ICT facilities for learning
3. Do students often use ICT facilities for learning

1.3. Research Hypotheses

The following null (Ho) and alternate (Ha) hypotheses were coined from the research questions:

- Ho 1: ICT facilities are not readily available for student of tertiary institutions for effective learning.
- Ha 1: ICT facilities are readily available for student of tertiary institutions for effective learning.
- Ho 2: Students of tertiary institutions do not readily accept and adopt ICT facilities for learning.

- Ha 2: Students of tertiary institutions readily accept and adopt ICT facilities for learning.
- Ho 3: Students of tertiary institutions do not often use ICT facilities for learning.
- Ha 3: Students of tertiary institutions often use ICT facilities for learning.

1.4. Significance of Study

The significance of this study cannot be over estimated as it is obvious that ICT has the potential to accelerate, enrich and deepen basic skills in teaching and learning, it also helps in motivating and encouraging students in learning, as they are encouraged to be more dependent and responsible for their own learning. Most importantly, this study provides basic understanding of ICT pervasiveness in education and strengthen teaching and learning, to provide powerful resources and services for students, thereby enabling them to meet their individual needs and also for networking among students and teachers. Thus teachers and students are more connected to each other.

2. Method

Niger Delta University, Wilberforce Island, Bayelsa State is one of the newest State funded universities in Nigeria. Nigeria consisted of six geo-political zones with Bayelsa State in the South-South geo-political zone. Bayelsa State is the richest oil producing State in the zone and it will be nice to see if the monies are put into useful ventures like tertiary education which will in turn produce the required manpower and human capital for the State.

The population of the study consists of students of the main campus of the only State funded university - Niger Delta University which consist of six faculties namely: Faculties of Agricultural Technology, Arts, Engineering, Education, Management Science and Sciences. Two out of these six Faculties were randomly picked by writing the names of the Faculties on pieces of paper and shuffling in a bag. Without replacement, two pieces of papers were picked out of the bag in turns. The Faculties on the pieces of papers were Faculties of Agricultural Technology and Education. These Faculties constituted the sample for the study.

The Faculty of Education comprises of three departments which are: Department of Teacher Education, Educational Foundation and Vocational/Technology Education, whilst the Faculty of Agricultural Technology comprises of four departments namely: Department of Livestock Production, Fisheries, Crop Production and Agricultural Economics and Sociology. Three Departments were randomly picked from the seven Departments from both Faculties using similar randomization technique as described previously. The three Departments that make up the actual sample of this study are: Livestock Production and Fisheries from the Faculty of Agricultural Technology and Educational Foundation from the Faculty of Education. A total of 843 students (179 from Livestock Department, 147 from Fisheries Department and 520 from Educational Foundation Department) make up the sample population for the study. A total of 250 questionnaires were issued at random to respondents from the sampled population of 843 students, with 150 questionnaires shared to respondents in the Department of Education Foundation as it constitutes a greater population of the sample, 50 questionnaires each was then shared to respondents in the Departments of Livestock Production and Fisheries.

The instruments employed in data collection were a structured response questionnaire and interview schedule developed by the researchers. The questionnaires were structured to avoid ambiguity and simple to understand. Multiple choice questions were included to ensure a wide range of choice for the respondents. The questions were designed on an ordinal scale to elicit the following information:

- Are ICT facilities available for students use?
- Do students readily make use of ICT facilities?
- How often do students use ICT facilities for learning?

The questionnaires contain twenty five (25) questions in two sections A and B. Section A contains five background information questions (demographic data), section B contains twenty (20) questions in three tables to ascertain the availability, acceptability and usage level of ICT facilities in the Departments (See Appendix).

In section ‘A’, respondents were asked to fill in the correct information or by ticking the closest option that suits their answers. Section B – Table one which seeks to ascertain the availability of ICT for students’ use employed a three point Likert scale in eliciting respondent responses having ‘3’ and ‘1’ as the extreme values and ‘2’ as undecided, thus in Table one, ‘3’ means ‘available’, ‘2’ means ‘undecided’, and ‘1’ ‘not available’. Table two and three have five questions each. Table two was on acceptability of ICT facilities by students and a five point Likert scale was employed having ‘5’ and ‘1’ as extreme values. Thus ‘5’ means ‘strongly agree’, ‘4’ means ‘agree’, ‘3’ means ‘undecided’, ‘2’ means ‘disagree’, and ‘1’ means ‘strongly disagree’. For Table three 3 which seeks to determine how often students make use of ICT facilities, a four point Likert scale was employed in eliciting the desired information to answer the research question. Thus ‘4’ means ‘frequently’, ‘3’ means ‘occasionally’, ‘2’ means ‘sometime’ and ‘1’ means ‘never’.

Face and content validity of the instrument were confirmed by professional experts in measurement and evaluation from the Department of Teacher Education, Niger Delta University. In order to test the reliability of the instrument, a test re-test method was used where the instrument was administered to a small sample of twenty five (25) students who are not involved in the main study, and after a two weeks interval, the same instrument was re-administered to the same 25 students. The two responses were collated and analyzed using Pearson Product Moment Correlation Coefficient. A coefficient value of 0.86 was obtained which is within the acceptable benchmark of reliable coefficients.

Also face to face in-depth interview was done with selected sample (thirty) of the participating students. The intent was to triangulate the findings from the questionnaire. Although thirty persons were to be interviewed only twenty persons participated. In phenomenological study (qualitative), data emerge from rich description of phenomenon and the inquiry utilizes inductive theory development (Creswell, 2013). Though there was an interview guide questions developed through evolution of conservation with the participants. The

format includes detailed orient probes, elaboration probes and clarification probes to enhance the understanding and clarity of statements as appropriate. Open-ended questions were used to obtain data from the participants. This gave the participants opportunity to express themselves to their satisfaction as regards the phenomenon under study. They express the non availability of ICT facilities and low usage through their words, actions and gesticulations. A tape recorder was used during the interview with the consent of the interviewees. Transcription software would have been used if it was accessible. In place of transcription software, the researchers did the transcription manually and compared it with audio version. Copies of participants individual transcription was made available to participants for verification and revision suggestions to ensure validity. In order to checkmate bias, the researchers maintained bracketing during the interview data collection by isolating their own preconceived notions and beliefs; but focus on the participants so that they can understand the phenomenon from the participants own perspective to glean meaning from their experience as an interpreter. Phenomenological research focus on achieving resulting meaning and bracketing is the only way this can be achieved and checkmate bias.

3. Result

The data collected were analyzed to answer the research questions posited for the study and the analyses are presented in three Sections A to C. Section A which analyzed the Demographic Data are presented in Tables 1 - 5. Section B analyzed the three research questions and the results are presented in Tables 6 - 8. Section C tests the three research hypotheses derived from the research questions.

Section A: Demographic data of the Respondents (Biodata)

Table 1. Frequency Distribution of Department of Respondents

Department	Frequency	Percentage
Livestock Production	50	20%
Fisheries	50	20%
Educational Foundation	150	60%
Total	**250**	**100%**

Table 1 displayed the number of participants from each Department who were involved in the study also Table 2 shows distribution of their levels in the university i.e. Year 1 (100 Level) is the first year in the university.

Table 2. Frequency Distribution of Year of Study of Respondents

Year of study	Frequency	Percentage
Year 1(100 Level)	70	28%
Year 2 (200 Level)	80	32%
Year 3 (300 Level)	60	24%
Year 4 (400 Level)	40	16%

Table 3. Frequency Distribution of Ages of Respondents

Ages	Frequency	Percentages
18-28	130	52%
29-38	80	32%
39-48	40	16%

Table 3 shows that 70 (28%) are respondents between ages of 15-20, 120 (48%) are between the ages of 21-25, 50 (20%) between ages of 26-31 and 10 (8%) of respondents between ages 31-35.

Table 4. Frequency Distribution of Gender of Respondents

Gender	Frequency	Percentages
Male	120	48%
Female	130	52%
Total	**250**	**100%**

Table 4 shows that 120(48%) of the sample population for the study are male and 130(52%) of the sample population are female, this shows that there are more females in the study. Table 5 shows that only 40(16%) of respondents own a computer and 210(84%) of respondents do not have computers.

Table 5. Frequency Distribution of Computer Owners

Own a computer	Frequency	Percentages
Yes	70	28%
No	180	72%
Total	**250**	**100%**

Section B: Answering the three research questions posited for the study

Table 6. Availability of ICT materials in the University

S/No	Statements	Responses		
		Available	Undecided	Unavailable
1	Computer training centers for students on campus	60 24%	10 4%	180 72%
2	Computer systems and printers for print out by students	60 24%	10 4%	180 72%
3	Internet cyber café on campus for students use	80 32%	10 4%	160 64%
4	WIFI internet network on campus for free browsing by students.	30 12%	11 4.4%	209 83.6%
5	Audio visuals/instructional television and radio for students	30 12%	11 4.4%	209 83.6%
6	Computer power point facilities for students use.	40 16%	10 4%	200 80%
7	Centralized E-mail transfer system for students	0 0%	10 4%	240 96%
8	Stored lecture notes on CDROM for supplementary learning by students	45 18%	10 4%	195 78%
9	Electronic blackboard facilities for teaching and learning by students	25 10%	10 4%	215 86%
10	An organized networking system between staffs and students	20 8%	10 4%	220 88%

Source: Responses to the ten questionnaire items in Section – B -Table one of Appendix A

From the responses received from question one, 60(24%) responded that computer training center for students on campus are available, 10(4%) were undecided and 180(72%) indicated unavailable. For question two

which stated that: computer systems and printers for printing by students are available, 10(4%) were undecided and 180(72%) response was unavailable. For question three, 80(32%) of responses from respondents indicated that internet cyber café on campus are available, 10 (4%) were undecided and 160(64%) responded that it is unavailable.

For question four, 30(12%) responded that WIFI internet network system on campus is available, 11(4.4%) were undecided and 209(83.6%) response was unavailable. For question five, 30(12%) responded that audio visuals/instructional television and radio for students use are available, 11(4.4%) were undecided and 209(83.6%) responses are unavailable. For question six, 40(16%) responses indicated that computer PowerPoint facilities for students use are available, 10(4%) were undecided and 209(83.6%) responses are unavailable. For question seven, none of the respondents indicated that a centralized E-mail message transfer system on campus is available, 10(4%) are undecided and 240(96%) responses are unavailable. For question eight, 45(18%) of responses indicated that lecture notes are stored on CDROM, 10(4%) are undecided and 195(78%) responded in the negative. For question, 25(10%) responded that electronic black board facilities for teaching and learning are available, 10(4%) are undecided and 215(86%) responses are unavailable. For question Ten, 20(8%) of responded that an organized networking system between staffs and students are available, 10(4%) are undecided, and 220(78%) responses are unavailable. Data shows that ICT facilities are not readily available to the sampled undergraduates' students.

Table 7. Acceptability of ICT facilities for use

	Statement	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	Students attend computer training classes	25 10%	60 24%	5 2%	90 36%	70 28%
2	Students regularly access the internet for search of information	30 12%	60 40%	5 2%	70 28%	70 18%
3	Students own personal e-mail address, for sending and receiving messages	50 20%	70 40%	5 27%	70 24%	45 18%
4	Stored lectures notes on CD-Rooms are purchased by students for supplementary learning	50 20%	70 40%	5 27%	70 24%	45 18%
5	Students belong to online conferencing and study group to share information	30 12%	70 28%	5 2%	100 40%	45 18%

Source: Responses to research question two.

From the responses above, the number of respondents who 'disagreed' and 'strongly disagreed' outnumbered the respondents who 'strongly agreed' and 'agreed' to the various statements on Table 7 on the acceptability of ICT facilities. The data confirm that ICT facilities are not readily accepted by the sampled students.

Table 8. Usage of ICT facilities by students

S/N	Statements	Frequently	Occasionally	Sometimes	Never	Total
1	Students make use of computer systems for data research	50 20%	90 36%	70 28%	40 16%	250
2	Students access the internet in search of information	50 20%	90 36%	70 28%	40 16%	250
3	Students make use of CD-Roms as supplementary learning materials	50 20%	90 36%	70 28%	40 16%	250
4	Students use e-mail for sending and receiving messages	50 20%	100 40%	60 24%	40 16%	250
5	Students make use of the electronic blackboard for learning	40 18%	80 32%	90 36%	40 16%	250

Source: Responses to research question three of the questionnaire.

An overview of Table 8 shows that the column of 'occasional' use of ICT facilities has the highest number of respondents, meaning that ICT facilities which is supposed to be used often by tertiary student as their academic pursuit will be go too far without these facilities is rather occasionally used. So also the column of 'never' which should have 'nil (zero)' student has as high as 16% of the sampled respondents across all the statement on the use of ICT facilities. This is very disappointing.

Section C: This section tested the hypotheses posited for the study. The hypotheses were tested using Chi-square at 0.05 significant levels. Three null hypotheses were derived from the three research questions posited for this study i.e. ICT facilities are not readily available for students; secondly, they are not readily acceptable by the student and thirdly they are not used by the students of tertiary institutions. In all the three hypotheses, the calculated value was greater than the critical value meaning that the null hypotheses are accepted and the alternate hypotheses rejected. The null hypotheses (ICT facilities not readily available; not readily acceptable and not readily use) are accepted.

4. Discussion of Findings

Three research questions were posited to ascertain the availability, acceptability and usage of ICT facilities by students of Niger Delta University, Wilberforce Island, Bayelsa State. The first research question, which was on the availability of ICT facilities, revealed that ICT facilities are unavailable for students' use. Responses from the interview triangulated the findings from the questionnaire. The findings collaborated with the findings of Ani (2012) who researched on the accessibility and usage of ICT among students of Technical Education in Tertiary Institutions in Niger State of Nigeria – one of the Northern States of Nigeria. The study found out that ICT facilities are not available for students use at the department and as such they do not have access to it.

Oduma (2013) study was carried out in the Northern part of Nigeria and its findings collaborated with a findings of a similar research carried out in the Southern part of Nigeria goes to show that the non availability of ICT facilities in tertiary institutions in Nigeria cuts across the country.

Hamilton Ekeke (2011) revealed in a study on 'competence and utilization of internet/internet facilities among students of the Faculty of Education, Niger Delta University', that majority of education students are not using the internet in studying; also internet/internet facilities are not readily available to students of education; it was also discovered that students do not make use of internet in studying and research writing. This finding collaborates with the findings of this research where a greater percentage of the respondents indicated that they do not use ICT facilities. Also Eze and Eze (2013) discovered a lack of ICT facilities and lack of trained personnel in schools to operate ICT facilities.

The second research question was on students' acceptability of ICT facilities. The study revealed that ICT facilities are not accepted by students, which become quite obvious, that the ICT facilities are not available in the first place. This finding collaborated with the findings of Nkanu (2007) who found out that ICT facilities are not availability and as such not acceptable and accessible by students. Oye, Alahad and Abraham (2010) posited in their research study on 'awareness, adoption and acceptance of ICT innovations in higher education institutions, a study in the Department of Information Systems, University of Technology, Malaysia, a survey research design was adopted in conducting the research, at the University of Jos, Plateau State Nigeria, as a pilot study. The question on barriers to the use of ICT facilities, have the majority of respondents (42%) which said that their problem is time; on the other hand (31%) said that the problem is training. Other respondents (4%) said that costs, is their problem, another group (20%) said that they need compensation and the final group (3%) said that, it does not fit their programme. Performance expectancy had a mean response of 4.32 and standard deviation 6.65, this determines the level of expected adoption of ICT by the respondents. Therefore performance expectancy is the most influential for the acceptance and use of ICT by the respondents.

With respect to the third research question which sought to determine the usage of ICT facilities by students, the study shows very poor ICT facilities usage because the percentage of students that make use of ICT facilities very frequently are low compared to students that make use of it occasionally and sometimes. Thus, it is an indication that the students do not frequently use ICT facilities, which might not be unconnected with the fact that the facilities are grossly unavailable in the first instance. This finding is in collaboration with Ezenwafor, Okeke and Okoye (2013) findings. Ezenwafor *et al* studied the extent to which technology and vocational educators in South-East Nigerian tertiary institutions utilize e-learning resources for instruction and found out that the respondents utilize e-learning resources to a low extent and lack of skills for utilizing the resources and their inadequate supply in institutions, are the major constraints. Also Oye, Shallsuku and AIahad (2012) in their study on the role of ICT in education: focus on University undergraduates taking mathematics as a course at the Federal University of Technology Yola, Adamawa State, Nigeria. According to the study ICT usage shows that less than half of the sample (32.7%) use technology once or more in a day. Again the number of the respondents (35%) said that the greatest barrier to using ICT is technical. The survey shows that there is no significant correlation between the students and the use of ICT in their studies. This shows that students have a negative attitude towards using ICT in their academic work. The findings of the respective empirical research studies are all in line with the findings of this study, that ICT facilities are not available, not acceptable and not in used adequately in tertiary institutions in Nigeria.

5. Conclusion

Despite the glaring fact that ICT is regarded as the world's most influential instrument for the development of quality teaching, learning, and research in the educational system around the world. The students of Niger Delta University, Wilberforce Island, Bayelsa State, are still conspicuously not carried along, with its monumental revolution in education. This is a result of the unavailability, acceptability and as well the infrequent usage of ICT facilities within the university under study. The findings of this study indicates that the students from this university do not benefit from the educational revolution derived from the frequent use of ICT and as well the impact cannot be felt on teaching and learning experiences of the students. This as shown in the background of the study, that this benefits can only be enjoyed if the target beneficiaries, which are students, have available ICT facilities, accept the use of ICT facilities and benefit by maximizing the use of these facilities.

6. Recommendations

Based on the findings from the study, it is therefore recommended that:

1. The management of the institutions should urgently make sure ICT facilities available for students use, both in the studied university and other;
2. Institutions and their management should have ICT training centers on campus or involve ICT in their curriculum to enable students the opportunity to be computer literates, so they can accept and use ICT in their everyday studies;
3. Institutions should organize ICT training programmes for students, to expose them to the available ICT facilities and enable them have easy use at their own convenience and time;
4. Institutions should have an organized ICT center, with WiFi for free and easy internet connectivity, an organized e-mail transfer system between management, staff and students, to enable easy transfer of messages between students and staff;
5. The students should be given assignments, course projects, group work, which will involve sourcing for information from the internet as this will not only expose the students to the use of ICT but will

also encourage them to be conversant with the facilities and maximize its potentials;

6. Lecturers should encourage students to organize mini seminars for presentation of assignment through the use of PowerPoint, as this will acquaint them to tap the potentials derived from it;
7. Institutions should encourage students to conduct school registrations through the use of ICT facilities in order to maximize the usage;
8. Students should be encouraged to join online conferencing and study groups all over the world, to enable them get current educational information to assist them in their course of study;
9. The institutions should mandate all students to create e-mail addresses and students related information should be on the institutions website, for students to log on to the institutions portal for information, thereby making them more conversant with these facilities;
10. Parents should encourage undergraduate students, by purchasing a computer system for them to enable them meet the present educational trend;
11. The Government and Ministry of Education should implement policies on ICT usage in tertiary institutions, so as to adopt ICT use in teaching and learning.

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APPENDIX

QUESTIONNAIRE

SECTION A

BACKGROUND INFORMATION (BIODATA)

Instruction: Please put a tick in one box only and fill in where necessary.

1. Department: ……..
2. Level (year) of Study: ……..……..
3. Age: 15-20 21-25 26-30 31-35 above
4. Gender Male Female
5. Own a computer Yes No

SECTION B

To ascertain the availability of ICT facilities for students

Instruction: Please put a tick in one box from 3 to 1, thus

3 Means Available

2 Means Undecided and

1 Means Not Available

Question one (1): Are ICT facilities available on campus for students use.

Table 4.6

S/No	Statement	Response		
		3	**2**	**1**
1.	Computer training centre for student on campus			
2.	Computer systems and printers for print out by students			
3.	Internet, cyber café on campus for student use			
4.	Free to-air internet network on campus for students			
5.	Audio-visual/instructional television and radio for student use.			
6.	Computer power-point facilities for students			
7.	Centralized e-mail message transfer system for students			
8.	Stored lecture notes on CD-ROM			
9.	Electronic blackboard facilities for teaching and learning			
10.	An organized networking system between management staff and students			

Determining the acceptability level of ICT facilities by students

Question 2: Do student readily accept ICT facilities

Instruction: Please put a tick in one box only from 5 to 1, thus

5 Means Strongly Agree

4 Means Agree

3 Means Undecided

2 Means Disagree

1 Means Strongly Disagree

Table S/No	Statement	Response				
		5	4	3	2	1
1.	Students attend computer training classes					
2.	Students regularly access the internet for search of information					
3.	Students own personal e-mail address, for sending and receiving messages					
4.	Stored lectures notes on CD-ROMs are purchased by students for supplementary learning					
5.	Students belong to online conferencing and studying groups, to share information					

Question 3: How often do students use ICT facilities for learning?

Instruction: Please put a tick in one box only from 4 to 1, thus

4 Means Frequently

3 Means Occasionally

2 Means Sometime

1 Means Never

s/no	Statement	response			
		4	3	2	1
1	Students make use of computers system for processing data.				
2	Students access the internet in search of information				
3	Students make use of CDROM as supplementary learning material.				
4	Students use e-mails for sending and receiving messages				
5	Students make use of electronic blackboard for learning.				