AVAILABILITY AND UTILIZATION OF COMMUNICATION TECHNOLOGY IN THE IMPLEMENTATION OF UPPER BASIC EDUCATION CURRICULUM IN ABIA STATE, NIGERIA

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Abstract
This study investigated the availability and utilization of Information Communication Technology in the implementation of Upper Basic Education Curriculum in Abia State. Research Questions formulated for the study were: i) Are there ICT facilities for the teaching and learning of Computer Studies in Abia State Junior Secondary Schools for effective implementations of Universal Basic Education Curriculum? ii) To what extent are the available ICT facilities being utilized for the implementation of Upper Basic Education Curriculum in Abia State? iii) Do the numbers of students correspond with the number of available computers for the effective teaching and learning of computer studies for the implementation of Upper Basic Education Curriculum in Abia State. The population of the study was 225 public schools in the 3 educational zones in Abia State. 75 schools were selected as sample using Proportionate Stratified Sampling Technique. The subjects were the computer teachers in Upper Basic Education in the selected schools. The availability and the utilization of ICT facilities were arrived at using checklists and questionnaire respectively. Percentages, frequency counts, ratio and mean were used in the analysis. The result showed that the ICT facilities are inadequately available, the available ones were not being utilized, and there was no proper utilization of the available ICT facilities in the implementation of Upper Basic Curriculum.

Introduction
The use of Information Communication Technology (ICT) has spread across the world as it has been embraced by every sector such as health, economy,
agriculture including education. ICT has the potential to transform learning in and beyond the classroom when it is available and in use. However there is no much information about its availability and use in the implementation of Universal Basic Education in Nigeria. Nigeria has gone through diverse stages of educational reforms for the purpose of providing the citizenries with appropriate skills and knowledge necessary for the 21st century work place among others (The Educational Reform Act of 2007 (FME, 2007).

The Federal Government of Nigeria realized the need for the citizenries to acquire computer knowledge hence set up a national committee on computer education which was headed by Alhaji Hafiz Wali in 1987. The following cardinal objectives of computer education in Nigeria were also highlighted:

1. To bring about a computer literate society in Nigerian within a short space of time.
2. To enable the present generation of school children at all levels appreciate the potentials of computer.
3. To enable them use computer in various works of life and later education. (Eze, 2007)

The National Policy on Education (FRN 2004:17) emphasised the need for the integration of Information Communication Technology in the Nigerian Education system thus, “in recognition of the prominent role of information and communication technology in advancing knowledge and skills necessary for effective functioning in the modern world, there is urgent need to integrate ICT into education in Nigeria”. The government has declared her support in the acquisition of the ICT facilities which was clearly stated under section 5(30) of the National Policy on Education (FRN, 2004) that Government shall provide necessary infrastructure and training for the integration of ICT in the school system in recognition of the role of ICT in advancing knowledge and skills in modern world.

The Universal Basic Education (UBE) programme of the Federal Republic of Nigeria aims at achieving the following objectives as stipulated in the implementation guidelines for the Universal Basic Education (2000:2) -

- Developing in the entire citizenry a strong consciousness for Education and a strong commitment to its vigorous promotion.
- The provision of free, Universal Basic Education for every Nigeria child of school-going age.
- Reducing drastically the incidence of drop-out from the formal school system (through improved relevance, quality and efficiency).
- Catering for the learning needs of young persons who for one reason or another have had to interrupt their schooling through appropriate forms of complementary approach to the provision and promotion of basic education.
- Ensuring the acquisition of the appropriate levels of literacy, numeracy, manipulative, communicative and life skills as well as the ethical, moral and civic values needed for laying a solid foundation for life-long learning.
A close study of the new 9-Year Basic Education Curriculum for computer studies for Upper Basic Education revealed that for the proper implementation of Information technology in UBE, there is need for the acquisition of ICT facilities. The issue of improvisation does not apply at this level as the topics specified for Basic 8 and 9 demand physical presentation of computer room, computers, internet, application software, telephone (GSM – Global system for Mobile Communication), cellular networks, satellite communication and Television. At this level the learners are also expected to get familiarized with the workings of ICT gadgets and their applications.

The UBE is designed to lay the solid foundations for scientific and technological development in Nigeria (Enamiroro, 2009). There is need therefore to ensure the availability of these facilities in order to achieve the proper implementation of its integration in education. The achievement of the objectives of UBE can only be made realistic through proper implementation and effective monitoring to ensure that things are put in place. Enwereuzoh (2008) is also of the same view that effective monitoring, inspection, supervision and evaluation with proper mercenaries put in check will go a long way to sustain the good quality of the programme.

ICT is an asset to both the teachers and students who want to enrich their experiences and knowledge of global events and situations (Mangywat, 2006). It is therefore expected that at Upper Basic level of Education, learners should acquire some level of computer literacy before going to the next phase of education.

The recent study revealed that some schools acquired computer just for formalities without actually utilizing them in their teaching. This could be that teachers or learners do not have access to them as it has been observed that some computers are under the custody of the school principals who only use them for office decoration. Such schools may not even see any need for going further into getting connected to the internet for the implementation of computer literacy in Universal Basic Education. Ajayi and Ekundayo (2009) also add that it seems the schools could not purchase computer for use because of inadequate fund. Akudolu (2006) spells out that the major way of developing the ICT capability of citizens is through the implementation of the three facets of ICT-based curriculum which comprise learning about ICT, learning with ICT and learning through ICT. This can be made possible as it is already integrated in the curriculum because curriculum is the heart of education, the sharing of learning experiences between the teacher and the learner and as a result, the allocation of resources necessary for the system to function should be handled seriously.

Yusuf (2005) opines that students need not learn about computer only, ICT should be integrated for the development and management of teaching and learning in Nigerian Schools hence the new curriculum in computer Studies.

At upper basic education, most subjects are being taught in a conventional way of chalkboard and textbook as a result of unavailability of necessary resources or teaching aids. The integration of ICT came with the need for a change in the
technology age even as Nigeria presses towards educational reforms. The teaching of computers studies which is the reflection of integration of ICT into Universal Basic Education Curriculum is expected to be embraced and be properly implemented which could be achieved through the availability and utilization of necessary ICT gadgets especially as specified in the curriculum. The educational effectiveness of ICTs depends on how they are used and for what purpose (Wikibook, 2010).

The skills the learners acquired through ICT is capable of enabling them to manipulate computer in solving other educational problems. There are lots of educational websites which can enable the learners acquire deep knowledge about a particular concept. Building self reliant citizenries who will be able to fit into technology age requires adequate provision of needed resources with their full utilization.

Okebukola (1997) observed that computer is not part of classroom technology in over 90% of public schools in Nigeria, thus chalkboard and textbook continue to dominate classroom activities. It is also important to note that even though ICT facilities are available in some schools, they are inadequate, while some are not functional. Availability of facilities is one thing, while adequacy is another thing after which utilization comes in.

If the ICT facilities are not available, how would the implementation take place in Universal Basic Education? Most schools appear to be teaching computer just as a subject without even any computer set as teaching aid.

Implementation guidelines (FME 2000:12-13) states that UBE is also an excellent opportunity for Nigeria to confront head-on the challenges and to take full advantage of the possibilities offered by new information and communication technologies for improving the quality of education. The information age is also the age of knowledge. No educational system can afford to stay outside the knowledge age while operating in a world that is now run by knowledge. The way out of the dilemma is the integration of computer awareness, computer appreciation, computer literacy and computer applications into UBE. This indicates the interest of Federal Government hence the need for ensuring implementation of ICT through its availability and utilization.

In spite of the gains of information communication technology in its integration in Universal Basic Education Curriculum in which at upper Basic Education the learners are expected to have attained some level of computer literacy as Yusuf and Yusuf (2009) posit that the goals of ICT were as identified for primary schools but to be pursued at a higher level, the graduates of UBE appear to have little or no knowledge about what ICT is all about needless to talk of their appreciating its importance.

In past decades, computer became a laudable technology in Nigeria but after some years it was discovered that computer may not really give the best or meet educational needs without its being combined with other telecommunication gadgets especially, the internet. Achuonye (2004) sees ICT as the application of
computers and telecommunication gadgets to process, store, retrieve and send information of all kinds in whatever form or distance. Ayeni (2008) adds that ICT is a combination of various information gadgets/equipment to make useful information available to the end users. The end users could be the learners, the teachers, stakeholders, school administrators, and those in other fields outside education.

The concept and meaning of ICT are numerous by experts and scholars. They all are of the opinion that ICT comprises all telecommunication gadgets including internet in which the computer is central. The wealth of knowledge acquired through ICT is such a long-lasting asset both for livelihood and otherwise hence its inclusion in the Upper Basic Education.

**Universal Basic Education and Education Reform**

Having education available to all could be traced back to 1976 when UPE (Universal Primary Education) was introduced under the administration of General Olusegun Obasanjo. This was started well until 1980 when it failed to be effective for various reasons like economic, religion and political instability among others. At mid 80s, 6-3-3-6 system of education was introduced.

In 1990s Universal Basic Education was seen to be country’s attempt to join the global concern for making education available for all. Emergence of Universal Basic Education came to stay when it was launched in October 2000 under the same Olusegun Obasanjo Democratic regime.

Universal Basic Education as stated in the compulsory free Universal Basic Education Act (F.R.N 2004) means early childhood care and education, the nine years of formal schooling, adult literacy and non-formal education skills acquisition programme and the education of special groups such as nomads, girl-child and women, almajiri, street children and disabled groups. The nine year duration programme comprises 6 years in Primary education and 3 year in Junior Secondary Education. Onuoha (2008) views Universal Basic Education as a policy reform measure of the Federal Government of Nigeria, aimed at rectifying distortions in basic education. Universal Basic Education can therefore be seen as an opportunity given to citizensries to acquire minimum standard of literacy to enable them add value to their lives.

The Universalization of basic education is in keeping with the requirements of the constitution of the Federal Republic of Nigeria (1999) the educational objectives of which are stated in section 18 as follows:

... Government shall eradicate illiteracy; and to this end Government shall as and when practicable provide:

(a) Free, compulsory and Universal Primary Education;
(b) Free secondary education;
(c) Free University education; and
(d) Free adult literacy programme”.

(Implementation guidelines for the UBE programs 2000:3).

Enwereuzoh (2008) adds that to sustain the laudable project, the Federal
Government should map out enough funds that should take care of the implementation of the programme. It is believed that whatever foundation to be laid in one's academic life, it should not go beyond Junior Secondary School when distractions are minimal. The Universal Basic Education programme needs a competency based teacher, a teacher who can effectively combine theory with practice, a teacher able to stimulate others so as to produce promising graduates of Universal Basic Education.

The integration of ICT into Universal Basic Education was clearly spelt out in the implementation guidelines (2000) which has reflected in the Junior Secondary School Curriculum on computer Studies. It has been observed that most graduates of Universal Basic Education are not computer literate despite the laudable project by the Federal Government and its universal recognition in the contemporary era of globalization where the free flow of information via satellite and the internet hold sway in global information dissemination of knowledge. It could be that ICT gadgets are yet to be made available to various schools for the implementation of universal Basic education or they are inadequate. It could also be that even though they are available but in limited numbers compared to the number of students or the available ones are not functional hence the need for this study.

The study was carried out among the Junior Secondary School computer teachers in the three Education Zones in Abia State namely, Umuahia, Ohafia and Aba Education zones respectively.

The purpose of the study was to ascertain the availability and utilization of ICT in the implementation of Upper Basic Education Curriculum in Abia State. The study was carried out

i) To ascertain the availability of ICT facilities for the teaching and learning of Computer Studies in Junior Secondary Schools in Abia State

ii) To find out if the available ICT facilities are being properly utilized in teaching and learning of computer studies as specified in the Upper Basic Education curriculum

iii) To ascertain if the number of computers correspond with the number of students per class for the effective teaching and learning of computer studies.

The following research questions guided the study.

1) Are there ICT facilities for the teaching and learning of Computer Studies in Abia State Junior Secondary Schools for effective implementations of Universal Basic Education Curriculum?

2) To what extent are the available ICT facilities being utilized for the implementation of Upper Basic Education Curriculum in Abia State?

3) Do the numbers of students correspond with the number of available computers for the effective teaching and learning of computer studies for the implementation of Upper Basic Education Curriculum in Abia State,
Method

The design of this research is descriptive survey which describes the availability and level of utilization of Information Communication Technology in the implementation of Upper Basic Education Curriculum in Abia State.

The study covered the three educational zones of Abia State which comprises of Aba Education Zone, Ohafia Education Zone and Umuahia Educational zone which are Abia South, Abia North and Abia South Senatorial zones respectively.

The population of the study comprised two hundred and twenty-five (225) Junior Secondary Schools in the three (3) educational zones in Abia State: Umuahia – fifty four (54), Ohafia – seventy-eight (78), and Aba – ninety-three (93) respectively.

A proportionate stratified random sampling technique was used to select seventy-five (75) Junior Secondary Schools in the three (3) education zones in Abia State. Eighteen (18) schools were selected in Umuahia, twenty-six (26) in Ohafia and thirty-one (31) in Aba where a total number of ninety (90) computer teachers were derived.

The instruments were a researcher developed questionnaire and a checklist. The questionnaire was a 9 item questionnaire with two sections. Section A-Personal data, and Section B, the questionnaire items for the utilization of ICT facilities. Respondents were asked to tick for the options Very Often (4), Often (3), Sometimes (2), Never (1) for the section B on a four point-likert type scale.

The instruments were developed by the researcher. A checklist was developed to ascertain the availability of Information Communication Technology Facilities while the questionnaire was to ascertain the utilization of the facilities. The instruments for this study were validated by the experts in Computer Education and Measurement and Evaluation. Based on their necessary modifications a checklist was developed to ascertain the availability while questionnaires were used for the utilization of availability of Information Communication Technology.

The reliability of the instrument was determined by using the split-half method. The two means were correlated and the reliability co-efficient of 0.95 was obtained and was therefore deemed reliable.

The sampled schools were visited to observe the availability of facilities and also personally administered the questionnaires to computer teachers. The Questionnaires were collected on the spot. However, fifty-seven (57) out of the seventy-five (75) sampled schools have computers and fifty-eight (58) schools have computer teachers therefore reducing the number of sampled schools to fifty seven (57).

Data were collected and analysed using frequency counts, percentage, ratio and mean. Frequency counts and percentage were used to analyse the data gotten from the checklist on the availability of ICT facilities in the implementation of upper basic education curriculum. Adequacy of such facilities were also analysed using ratio of total number of computers and total number of students per class (of
average of 39 students per class) while the mean for the utilization of availability were derived using four point-likert type scale of very often (4), often (3), sometimes (2) and Never (1) A mean rating of 2.50 indicated an item as acceptable and a mean rating below 2.50 regarded the item as not acceptable or rejected.

**Research Question One:**
Are ICT facilities available for the implementation of upper basic education curriculum in Abia State?

**Table 1** – Percentage analysis of the availability of ICT facilities for the implementation of upper basic education curriculum in Abia State

<table>
<thead>
<tr>
<th>Total No of schools with computers</th>
<th>Total No of schools without computers</th>
<th>Total No of available computers</th>
<th>Average no of students per class</th>
<th>% Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>18</td>
<td>564</td>
<td>39</td>
<td>19.3%</td>
</tr>
</tbody>
</table>

**Table 1b** - Percentage analysis of the availability of other ICT facilities

<table>
<thead>
<tr>
<th>Items</th>
<th>No of Schools</th>
<th>% Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Computer Laboratory</td>
<td>21</td>
<td>28</td>
</tr>
<tr>
<td>Power supply</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Computer Teachers</td>
<td>58</td>
<td>77.3</td>
</tr>
</tbody>
</table>

Table 1a shows that computers are not available at all in 18 schools while 57 schools have 564 computers with the average number of 39 students per class giving 19.3% availability while table 1.1b shows availability of internet facilities in 3 schools (4%), Computer laboratory in 21 schools (28%), Power supply in 15 schools (20%), and computer teachers in 58 schools giving 77.3%.

**Research Question Two**
To what extent are the available ICT facilities being utilized for the quantitative implementation of upper basic education curriculum in Abia State

**Table 2**: Mean analysis of level of utilization of available ICT facilities in Abia State

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items</th>
<th>VO (4)</th>
<th>O (3)</th>
<th>S (2)</th>
<th>N (1)</th>
<th>No of Respondents</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I have access to computers in my school to prepare my computer lessons</td>
<td>68</td>
<td>24</td>
<td>28</td>
<td>46</td>
<td>85</td>
<td>1.95</td>
</tr>
<tr>
<td>2</td>
<td>I make use of computers while teaching computer studies</td>
<td>44</td>
<td>15</td>
<td>26</td>
<td>56</td>
<td>85</td>
<td>1.66</td>
</tr>
</tbody>
</table>
Table 2 shows that computer teachers who have access to computers to prepare their lesson obtained a mean of 1.95, those who make use of computers in teaching obtained a mean of 1.66, those whose students are allowed access to computers while teaching got a mean of 1.95, computer teachers who teach with the available application package got a mean of 1.59, those whose schools have power supply obtained a mean of 1.73, those whose students are allowed access to computers for their assignment/practical obtained a mean 1.54, those who use other ICT facilities as teaching aids got a mean of 2.55, teachers whose computers are connected to the internet obtained a mean of 1.1 while those who have all their computers functional got a mean of 1.68.

**Research Question 3:**
Do the numbers of available computers correspond with the number of students per stream for effective utilization of ICT facilities to enhance teaching and learning of Computer Studies?

<table>
<thead>
<tr>
<th>No of schools with computers</th>
<th>Average No of Students per class</th>
<th>Total no of Computers</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>57</td>
<td>39</td>
<td>564</td>
<td>1:5</td>
</tr>
</tbody>
</table>

The above table shows a ratio of 1:5.2 of the numbers of available computers in school and number of students per class.

**Discussion, conclusion and recommendation**

The research question one sought to find out the availability of ICT for the implementation of upper basic education curriculum in Abia State. The results shows 19.3% availability of computers which is the main ICT facility. It was
revealed that total number of available computers is 564 in 58 schools with the average number of 39 students per class which implies that 564 computers are available to 2,931 students in the teaching and learning of computer studies. This is considered to be inadequate for the proper implementation of upper basic education curriculum. Internet facilities were only discovered in about 4% of the sampled schools which is about 3 out of 75 schools. 28% of the schools have computer laboratory, 20% have power supply while 77.3% of the school have computer teachers. The overall percentage shows 24.77 availability of ICT facilities. This is close to the findings by Ajayi and Ekundayo (2009) which was carried out in Ondo and Ekiti States that ICT facilities were lacking in schools.

Research Question Two ascertained the extent of utilization of the available ICT facilities for the quantitative implementation of upper basic education curriculum. The result shows a mean of 1.8 which simply means that the available ICT facilities were not being utilized. This is also similar to the study carried out by the same Ajayi and Ekundayo that teachers and students were a little exposed to the use of ICT.

Research Question Three sought to find out the ratio of the available ICT to students per class/teaching in the implementation of upper basic education curriculum. The result shows a ratio of 1:5. This was derived from the available 564 computers and the average of 39 students in 75 schools. This shows inadequacy of computers for the proper implementation of Upper Basic Education Curriculum in Abia State.

From the findings of the study, the following conclusions have emerged.

1. ICT facilities for the implementation of Upper Basic Education Curriculum in Abia State are not adequately available.

2. The available ICT facilities in Upper Basic Education in Abia State are not being utilized for the qualitative implementation of Upper Basic Education Curriculum.

3. The number of students per class does not correspond with the number of available computers for the teaching and learning of computer studies.

In the light of the findings of the study, the following recommendations are made.

1. Agencies of Education should provide adequate ICT facilities in the upper basic education so as to ensure sustainability of the 9-3-4 quality system of education.

2. The ICT facilities should be properly utilized by ensuring both the teachers and the students have access to computers and computer laboratory.
References


