



Full Length Research Paper

Availability and utilization of information and communication technology (ICT) in Ebonyi Local Government area of Ebonyi state: implications for effective teaching and learning

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Abstract

Effective communication is of great importance in teaching-learning situation. That is why Federal Republic of Nigeria (FRN, 2004) provides that ICT devices will be used to improve communication as well as for expansion of instructional techniques in schools. Information and Communication Technologies (ICTs) are technological gadgets that receive, process, store, retrieve and disseminate information. It is in response to the need for ICT in schools that this study was undertaken to assess the availability and utilization of Information and Communication Technology (ICT) devices in senior secondary schools in Ebonyi Local Government Area of Ebonyi State. Four research questions guided the study. The population of the study comprised of two hundred and twenty five (225) teachers and Eight thousand one hundred and twenty eight (8,128) students in the fifteen (15) senior secondary schools in the study area. Simple random sampling technique was used to select ten (10) teachers and twenty six (26) students from ten (10) schools used for the study to give a sample size of three hundred and sixty (360) respondents. The instrument used for data collection was structured questionnaire. Pearson's Moment Correlation Co-efficient was used to calculate the reliability co-efficient of the pilot tests to get established reliability value of 0.78. the data collected were analyzed using mean scores. It was found among other things that ICT devices are not adequately utilized, personnel to operate ICT devices are not adequately trained and most of the ICT devices are not in good working condition in schools studied. Based on the findings, the following recommendations were made: urgent review and implementation of policy on ICT adaptation in secondary schools, recruitment and posting of qualified personnel to operate ICT devices in secondary schools, review of teacher education curriculum to incorporate ICT skills and training and encouraging individuals and non governmental agencies to participate in the provision and maintenance of ICT devices.

Keywords: Information and Communication Technology (ICT), effective teaching and learning, public senior secondary school system.

INTRODUCTION

Transferring relevant information, values, skills, attitudes, beliefs, and moral for the collective wellbeing of the individual and his society requires proper and effective communication. Teaching and learning is all about communication between the teacher and the learner or between the learner and the learning materials which

involves giving and receiving information. Means of transferring Information or lesson content to learners are of great importance. Since the evolution of Information and Communication Technologies (ICTs), giving and receiving information have not remained the same. ICT is gaining global recognition in the evolution of information

dissemination (National Open University 2012).

According to Homby (2004), Information and Communication Technologies (ICTs) are electronic technologies used for information storage and retrieval. Ayodele (2002) in Oluwarobi (2012) defined ICT as electronic-based technology that is generally used to retrieve, store, process, and package information as well as provide access to knowledge. The development of micro computers, optical disc, the establishment of telecommunication network, television, internet, etc. have assisted in broadening peoples knowledge and facilitating effective communication. Ugwu and Oboegbulem (2011) stated that ICTs in education encompasses a great range of rapidly evolving technologies such as desktops, notebooks, digital camera, local area network (LAN), the internet and the World Wide Web (WWW), CD Rom and DVDs and applications spread sheets, tutorials, simulations, electronic mails, digital libraries, computer mediated conferencing, video conferencing and virtual reality. In effect, ICT has reduced the barriers that characterized interrelationship in terms of space, time, and learning activities. ICT tools for teaching and learning include Computer, Internet, PowerPoint, Television, Overhead Projectors, Camera, Radio Cassette, Video Tape, Audio Cassette, Audio CD, World Wide Web (WWW), Telephone, etc. Gannon (2004)

Effective according to Homby (2004) is a condition of producing result that is desired or intended. In other words it is producing a successful result. Teaching and learning produce result that is wanted or intended when the learner is able to exhibit behavior that reflect the objectives of the instructional programme. It is when this happens that we can say that teaching and learning is effective. This can only take place where the learning environment is supportive. ICT has the potentials to transform and enrich the classroom environment to achieve qualitative education, meaningful and lifelong learning at all levels of education especially secondary school which is a base and criteria for higher level education.

Therefore introducing ICT to teaching and learning will give the students the opportunities to access information of their interest and interact with experts in other parts of the world. This will help to further develop their understanding, knowledge as well as make them gain new information. This is in line with Ugwu and Oboegbulem (2011) who held that effective use of ICTs in schools guarantees more access to information and experience in this era of globalization. Badmus (2004) stated that introduction of ICT in the school setting has a great impact in contributing to the achievement of the educational objectives, aims and goals as well as improving teaching and learning. In similar vein, Hadda and Draxler (2002) stated that ICTs have brought about a personalized, just-in-time, up-to-date and user-centred educational activities. For Selinger (2005), students' learning is more robust and their knowledge and

understanding increase where ICTs are used. So at the look of things, all human institutions including schools will be inefficient and unproductive without ICT. But despite the benefits of ICT in teaching-learning process, teachers and school management are not interested in using ICT for instructional purposes. This has been attributed to many factors which include inadequate funds, poor condition of electricity, teachers incompetence and pervasive poverty in the society (Aja, 2013). It is based on this reason that the researchers sought to investigate the availability and utilization of ICT in public secondary schools in Ebonyi Local Government Area of Ebonyi State.

The role of the teacher cannot be underrated for proper and effective use of ICT in the teaching and learning process, in as much as the teacher is the actual implementer of any curriculum. So the ability, skill, knowledge, resourcefulness and competence of the teacher is of great importance. In effect, Ajeyalemi (2005), stated that for any teacher at any level to be able to contribute to national development in this global world, he/she must be empowered to provide ICT based training for the students. Thus, his/her education must include opportunities to acquire skills in the selection, application and use of ICT tools and materials for instructional exercise.

Statement of Problem

ICT are electronic devices that receives, store and disseminate information. Studies have revealed that, students who learn in a technology-rich environment experience positive effects on their performance in all subject areas (Fagbamiye, 1977). In the same line of thought, Becta (2003) in his study pointed out that, ICT provides fast and accurate feedback to student and speed of computation and graphing, thus freeing student to focus on strategies and interpretations. Despite the benefits of ICT devices to teaching and learning, their usage in secondary schools are still low as teachers and school management are yet to embrace and integrate ICT in instructional exercise. That is why Onyejemezie (1981), maintained that the usefulness of educational technology devices depend on what the teacher makes out of them.

Studies have shown that ICTs are not considered central to the teaching and learning process especially in the developing countries as most of the tests and examinations in schools follow traditional paper and pencil instead of the use of improved technology on-line assessment, tele-conferencing etc. The problem of the study put in question form is: what are the available ICT devices and their utilization in public senior secondary school system in Ebonyi Local Government Area (L.G.A.) of Ebonyi State?

Purpose of the Study

The general purpose of the study is to find out the availability and utilization of information and communication technology in Senior Secondary School System in Ebonyi L.G.A of Ebonyi State.

Specifically, the study sought to find out:

1. The available ICT devices/tools in Senior Secondary School System in Ebonyi L.G.A. of Ebonyi State.
2. The utilization of available devices in Senior Secondary Schools in Ebonyi L.G.A. of Ebonyi State.
3. The adequacy of personnel operating ICT devices in Senior Secondary School System in Ebonyi L.G.A. of Ebonyi State.
4. The quality of ICT devices in Secondary School system in Ebonyi L.G.A. of Ebonyi State.

Research Questions

The following research questions were formulated to guide the study:

1. What are the available ICT devices in Senior Secondary School System in Ebonyi L.G.A of Ebonyi State?
2. How are the available ICT devices used in Senior Secondary School System in Ebonyi Local Government Area of Ebonyi State?
3. What are the adequacy of personnel to operate ICT devices in Senior Secondary School System in Ebonyi L.G.A. of Ebonyi State?
4. What are the quality of ICT devices in Senior Secondary School System in Ebonyi L.G.A. of Ebonyi State?

METHODOLOGY

Descriptive survey research design was used for the study. Survey research in the view of Olaitan, Ali, Eyo and Sowande (2002) is a design that employs the study of a sample of large population to discover the relative incidence, distribution and interrelations of sociological and psychological variables through the use of interview or questionnaire.

The study was carried out in Ebonyi Local Government Area of Ebonyi State. The total population of the study was 8353 (225 teachers and 8128 students) from the fifteen (15) secondary schools in the study area, (Secondary Education Board: Abakaliki Education Zone, 2013). Ten (10) secondary schools were selected for the study. Simple random sampling technique was used to select ten (10) teachers and twenty six (26) students each from the ten (10) selected secondary schools. This gave a sample size of three hundred and sixty (360) respondents.

The instrument for data collection was researchers' self structured questionnaire. The questionnaire responses were graded as follows:

Strongly Agree	SA	4 points
Agree	A	3 points
Disagree	D	2 points
Strongly Disagree	SD	1 point

The questionnaire was face validated by three experts; two from measurement and evaluation while one from computer science education department, all of Ebonyi State University. Their corrections and suggestions helped to produce the final copy of the questionnaire (instrument).

RESULT

Research question one: what are the available ICT devices in Senior Secondary School System in Ebonyi Local Government Area of Ebonyi State?

Table 1 above shows that all the items except item 16 are found in some secondary schools in Ebonyi Local Government Area. It also revealed that availability of these ICT devices are not adequate as shown by the grand mean of 1.28

Research Question Two: How are the available ICT devices used in Senior Secondary School System of Ebonyi Local Government Area of Ebonyi State?

Table two above indicates that the available ICT devices are not effectively utilized as shown by the grand mean of 1.46. it was observed that most of the ICT devices are either locked up in a room or kept in the principal's office because of lack of technical know-how (technologists/operators or personnel) and electricity.

Research Question Three: What are the adequacy of personnel to handle ICT devices in Ebonyi State?

Table three above shows that there are inadequate personnel to operate ICT devices in the senior secondary schools in Ebonyi Local Government area of Ebonyi State. This can be seen from the response to the items 1-6 and the grand mean of 2.95 indicating that most teachers are not trained on the use of ICT devices.

Research Question Four: What are the qualities of ICTs devices in senior secondary schools system in Ebonyi L.G.A. of Ebonyi State?

Table four shows that most of the ICT devices found in the school under the study are not in good working condition especially with the absence of electronic local network and maintenance culture.

Summary of Finding

The result of the study as seen from the data analyzed in table 1-4 show the following findings:

Table 4. Mean response of respondents on the qualities of ICT devices in senior secondary school system in Ebonyi L.G.A. of Ebonyi State.

S/N	Item Statement	Teachers				N	FX	X
		SA 4	A 3	D 2	SD 1			
1	Computers in most secondary schools are not in good condition	720	324	144		360	1188	3.3
2.	ICT facilities in most secondary schools lack good Network connectivity within the school environment	864	216	144		360	1224	3.4
3.	ICT facilities in secondary schools are not connect to the internet	864	216	144		360	1224	3.4
4.	There is no local area network (LAN) system	864	216	144		360	1224	3.4
5.	There are good computers for instructional purposes			144	288	360	432	1.2
	Grand mean							2.94

1. That information and communication technology (ICT) devices are available but not adequate in most of the senior secondary schools studied in Ebonyi Local Government Area of Ebonyi State.
2. That the available ICT devices in some of the schools were not adequately utilized due to lack of technical know-how.
3. That most schools studied lack qualified personnel who could operate these devices.
4. That most of the ICT devices available are not in good working conditions because of absence of electricity, internal connectivity and maintenance culture.

3. There should be checks on how the money and ICT equipment provided in schools are used.
4. Qualified personnel should be recruited to enhance effective utilization of ICT in secondary schools.
5. Teachers should be encouraged to acquire ICT basic training in order to train others and maintain ICT devices.
6. Our teacher education curriculum should be reviewed to ensure not only that the would-be-teachers are taught but helped to develop the ability, competence, knowledge and skills to apply themselves to the real practical situation of ICT later in life.

CONCLUSION

ICT as an electronic based technology that receives, process, store, and retrieve information is useful in many fields of life including secondary school system. ICT makes information available no matter the distance and time.

Teachers, students and education practitioners should be encouraged to acquire skills, knowledge, and competences on ICT now that the world is becoming a global village.

RECOMMENDATIONS

For proper application of ICT in our school system, with reference to secondary schools;

1. Policy on ICT adaptation in school be reviewed and fully implemented
2. Non-governmental agencies and wealthy Nigerians should participate in the provision of ICT devices in secondary schools.

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