

Use Of Information And Communication Technology (Ict) Devices For Instructional Delivery In Secondary Schools In Ebonyı State Of Nigeria

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Abstract

The study examined teachers perceptions on the use of information and communication technology (ICT) devices for instructional delivery in secondary schools in Ebonyi State, Nigeria. Four research questions guided the study. The population of the study comprised of all the three thousand two hundred and eighty-five (3,285) teacher in the two hundred and twenty-one (221) public secondary schools in Ebonyi State. Simple random sampling technique was used to select (8) teachers each from ninety schools used for the study to give a sample of seven hundred and twenty (720) 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 0.79. The data collected were analysed using mean scores. It was found among other things that ICT devices are not adequately available, most available ICT devices are not in good working condition in schools studied, hence they are not adequately used and above all trained personnel are not also adequately available to operate the functional ones. Government through her appropriate agencies should as a matter of urgency procure and distribute the necessary ICT devices to secondary schools, more trained personnel should be recruited but for the interim the available ones could be retrained through short term holiday programmes, workshops and conferences to ensure adequate use and maintenance of these ICT devices as this will go a long way in improving instructional delivery in Ebonyi State Secondary Schools.

Keywords: Information and Communication Technology (ICT), instructional delivery, secondary schools, Ebonyi State, Nigeria

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 (National Open University, 2012).

Information and Communication Technology (ICT) is often used extended synonym for information technology (IT), it is a more extensive term that stresses the role of unified communications and the integration of telecommunications, computers as well as necessary enterprise software, middleware, stored, and audio-visual system, which enable users to access, store, transmit and manipulate information. ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system (Wikipedia, 2015). 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 spreadsheets, tutorials, simulations, electronic mails, digital libraries, computer mediated conferencing, video conferencing and virtual reality. In effect, ICT has reduced the barriers that characterised 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 Hornby (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 behaviour 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 prelude 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-centered educational activities. For Selinger (2005), students' learning is more robust and their knowledge and understanding increase where ICTs are used. This implies that at this information age, no human institutions including schools will be efficient and productive 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 against this backdrop that the researchers sought to examine teachers' perceptions on use of ICT devices for instructional delivery in public secondary schools in 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. Obinwa (2015) opined 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. ICT also provides fast and accurate feedback to student to focus on analysis and interpretations of results. Despite the benefits of ICT devices in education, their usage in secondary schools are still low as teachers and school management are yet to embrace and integrate ICT in instructional exercise. The reasons are multifaceted, that is why it is not an overstatement 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 of online assessment, teleconferencing etc. The problem of the study put in question form is: How does teachers perceive the use of ICT devices in instructional delivery in secondary schools in Ebonyi State of Nigeria?

Purpose of the Study

The general purpose of the study is to find out the perceptions of teachers on the use of information and communication technology devices to enhance teaching and learning in Ebonyi State, Nigeria.

Specifically, the study sought to find out:

- (1) Teachers' perceptions on the available ICT devices/tools in secondary schools in Ebonyi State.
- (2) Teachers' perceptions on the quality of ICT devices in secondary schools in Ebonyi State.
- (3) Teachers' perceptions on the use of available devices in secondary schools in Ebonyi State.
- (4) Teachers' perceptions on the adequacy of personnel for operating ICT devices in secondary schools in Ebonyi State.

Research Questions

The following research questions were formulated to guide the study:

- (1) How does teachers perceive the availability of ICT devices in secondary schools in Ebonyi State?
- (2) How does teachers perceive the quality of available ICT devices in secondary schools in Ebonyi State?
- (3) How does teachers perceive the use of available ICT devices in secondary schools in Ebonyi State?
- (4) How does teachers perceive the adequacy of personnel for operating ICT devices in secondary schools in 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 in Ebonyi State. The total population of the study was 3,285 teachers from the 221 secondary schools in the study area, (Secondary Education Board, Abakaliki 2014/2015 teachers nominal roll). Ninety (90) secondary schools were selected for the study. Simple random sampling technique was used to select eight (8) teachers each from the ninety

(90) selected secondary schools. This gave a sample size of seven hundred and twenty (720) 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 and 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. The reliability estimate through test retest method was 0.79 which is high enough to consider the instrument suitable for the study. The instrument was administered through the help of three research assistants who were trained for the exercise. This measure helped to achieve a hundred percent return. Data collected were analysed using mean scores.

Result:

Research Question One: How does teachers perceive the availability of ICT devices in secondary schools in Ebonyi State?

Table 1: Mean response of teachers on the availability of ICT devices in Ebonyi State public secondary schools.

S/N	ITEM STATEMENT	RESPONSES						
		SA	A	D	SD	N	FX	X
The School has the following ICT								
1	Television set			72	324	360	396	1.1
2	Radio		108	72	288	360	468	1.3
3	Computers	432		144	180	360	756	2.1
4	Printers	144		72	288	360	504	1.4
5	Overhead projectors			72	360	360	360	1.0
6	Scanners			72	324	360	396	1.1
7	Internet services			72	324	360	396	1.1
8	Video sets			72	324	360	396	1.1
9	CD-ROM			72	324	360	396	1.1
10	Electricity	144	108	72	252	360	576	1.6
11	Radio Cassette player		108	72	288	360	468	1.3
12	VCD/DVD/CD			72	324	360	396	1.1
13	Laptop	432		72	216	360	720	2.0
14	Electronic Typewriters				324	360	396	1.1
15	Manual typewriters				324	360	396	1.1
16	Camera				360	360	360	1.0
17	Generator	144			324	360	468	1.3
Grand mean								1.28

Table one above shows that all the items except item 16 are found in some secondary schools in Ebonyi Local Government Areas. 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 does teachers perceive the use of available ICT devices used in secondary schools in Ebonyi State?

Table 2: Mean responses of teachers on how available ICT devices are used in Ebonyi State public secondary schools.

S/N	ITEM STATEMENT	TEACHERS						
		SA	A	D	SD	N	FX	X
Utilization of available ICTs								
1	The available ICTs are used by teachers and students in the classroom for teaching and learning		216	288	504	720	108	1.4
2	The available ICTs are locked up inside a room because of technical know-how	864	432	360		720	803	2.3
3	Available ICTs are kept in the principal's office		432		566	720	108	1.4
4	The available ICTs are kept by the teachers to be used for their personal purpose			144	648	720	792	1.1
5	Students are given access to the ICTs			720		720	1.0	
Grand mean								1.46

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: How does teachers perceive the adequacy of personnel to handle ICT devices in Ebonyi State public secondary schools?

Table 3: Mean response of teachers on the adequacy of personnel to operate ICT devices in public secondary schools in Ebonyi State.

S/N	ITEM STATEMENT	RESPONSES						
		SA	A	D	SD	N	FX	X
Adequacy of Personnel to operate ICTs								
1	Most teachers do not even know how to use many of the facilities in their cell phone	1152	432	144	216	720	1944	2.7
2	ICT illiterate teachers are in greater number than ICT literate teachers	2016	216	144	72	720	3168	4.4
3	There are inadequate competent technical staff to operate ICT in secondary schools.	1152	648		216	720	2736	3.8
4	Most teachers cannot access the internet	1440	432		144	720	2232	3.1
5	Teachers had no ICT training while in school	1440	432		216	720	2088	2.9
6	Most teachers cannot operate other ICT tools without assistant	864	864	144	144	720	2016	2.8
Grand mean								3.28

Table three above shows that there are inadequate personnel to operate ICT devices in the public secondary schools in Ebonyi State. This

can be seen from the response to the items 1 – 6 and the grand mean of 3.28 indicating that most teachers are not trained on the use of ICT devices.

Research Question Four: How does teachers perceive the quality of ICT devices in public secondary schools in Ebonyi State?

Table 4: Mean response of teachers on the qualities of ICT devices in public secondary schools in Ebonyi State.

S/N	ITEM STATEMENT	RESPONSES						X
		SA	A	D	SD	N	FX	
1	Qualities of ICT devices in the schools 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 connected 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

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:

- (1) That information and communication technology (ICT) devices are available but not adequate in most of the public secondary schools studied in 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.

Conclusion

ICT as an electronic based technology that receives, processes, stores and retrieves 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 are not left out on this global trend of information super highway.

It is quite unfortunate there is sorry situation in our secondary schools as many of the necessary ICT tools/devices are virtually absent; coupled with the fact that where they exist, they are not been put into effective use .The obvious reason border on technical know-how. It is therefore expedient that something urgent need to be done to ameliorate the ugly situation.

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.
3. There should be checks on how the money on ICT equipment provided in schools are been utilized.
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.

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