

Assessment of School Teachers' Use of Information and Communication Technology (ICT) in Oyo Metropolis of Nigeria

Abdul-Salaam Aminat Obakhume

*Department of Computer Science,
Federal College of Education (Special), Oyo, Nigeria*

Abstract *This study examines the availability and usability of Information and communication technology among secondary school teachers in Oyo Metropolis. The Research Design employed is the descriptive survey design. Three research questions were formulated for the study. The population for the study consisted of 120 secondary school teachers. Questionnaire was used as the instrument for gathering data for the study. Data collected were analyzed using frequency tables and simple percentage. Results of the study showed that ICT facilities are not available in most of the schools covered. It was also observed most teachers used as the sample for the study, are not competent in the use of ICT. Recommendations were then made to the government.*

Introduction

Information and Communication Technology (ICT) may be viewed in different ways. Rodriguez and Wilson (2000) defined ICT as a set of activities which facilitate by electronic means the processing, transmission and display of information. ESCAP (2000) in its own definition defined ICT as techniques people use to share, distribute, gather information and to communicate through computers and computer networks. Marcelle (2000) described ICT as a complex varied set of goods, applications and services used for producing, distributing, processing, transforming information (including) telecoms, TV and radio broadcasting, hardware and software, computer services and electronic media. Ogunsola and Aboyade (2005) viewed ICT as a cluster of associated technologies defined by their functional usage in information access and communication of which one embodiment is the internet. Information and Communication Technology are computer based tools used by people to work with information and communication processing needs of an organization. It purview covers computer hardware, software, the network and other digital devices like video, audio, camera and so on which convert information (text, sound, motion etc) into digital form (Moursund and Bielefeldt, 1999). Information and Communication Technology as tools within the school environment include use for school administration and management, teaching and learning of ICT related skills for enhancing the presentation of classroom work, teaching/learning repetitive tasks, teaching/learning intellectual, thinking and problem solving skills, stimulating creativity and imagination, for research by teachers and students and as communication tool by teachers and students (Collis and Moonen, 2001, Derbyshire, 2003; Moursund and Bielefeldt, 1999).

The field of education has been affected by ICTs, which have undoubtedly affected teaching and research (Yusuf, 2005). A great deal of research has proven the benefits of ICT in improving quality of education (AL-Ansari, 2006). As a result of this, developed nations have integrated ICT into their educational system. Adomi and Kpangban (2010) observed that there are developments in the Nigerian education sector which indicate some level of ICT application in secondary schools in Nigeria. They traced the introduction of computer education in secondary schools to 1988, when Nigeria government enacted a policy on computer education. The Federal Government of Nigeria in the National Policy on education 2004 recognizes the prominent role of ICTs in the modern world and has integrated ICTs into education in Nigeria (Adomi and Kpangban, 2010). To actualize this goal, the document states that government will provide basic infrastructure and training at the primary school. At the junior secondary school, computer education is made a pre-vocational elective and is a vocational elective at the senior secondary school.

The Federal Ministry of Education launched an ICT-driven project known as SchoolNet, which was

intended to equip all schools in Nigeria with computers and communication techniques. Under the SchoolNet programme, MTN provided fully operational computer laboratories with 21 personal computers, VSAT interconnectivity, hand-on training in 24 secondary schools in Kaduna, Lagos, Enugu, Kwara, Rivers and the Federal Capital Territory Abuja. In all, over 49,524 pupils and 2,412 teachers were trained on how to use ICT facilities (Abdul-Salaam, 2007).

To adequately provide ICT facilities to secondary schools, the Nigerian Federal Government commissioned a Mobile Internet Unit (MIU) which is operated by the Nigerian National Information Technology Development Agency (NITDA). The MIU is a locally-made bus that has been converted into a mobile training and cyber centre. Its interior has ten workstations, all networked and connected to the internet. The MIU is also equipped with printers, photocopiers and a number of multimedia facilities. Internet connectivity is provided via VSAT with a 1.2m dish mounted on the roof of the bus. It is also equipped with a small electric generator to ensure regular power supply. The MIU takes the internet to places, areas and various secondary schools (Adomi and Kpangban, 2010). They added that the number of these buses is so small and as a result most rural schools are yet to benefit from this project.

Successful integration of ICT in the school system depends largely on the availability and competence and the attitude of teachers towards the role of modern technologies in teaching and learning. Research works have shown that most secondary schools have either insufficient or no ICT tools to cater for the ever increasing population of students in the schools and where they are available, they are by implication a matter of out-of-bounds to the students (Chattel, 2002; Cheng, 2003; Chiemeké, 2004). Fakeye (2010) also found out in a study carried in Ibadan that in most of schools covered in the study do not have computers, hence are not connected to the internet. He added those who have computers do not use them for teaching but solely for administrative purposes. In another study by Okwudishu (2005), he found out that the unavailability of some ICT components in schools hampers teachers' use of ICTs. Lack of adequate search skills and of access points in the schools were reported as forces inhibiting the use of internet by secondary school teachers (Adomi and Kpangban, 2010).

A survey carried out by Cirfat and Longshak (2003) revealed that only one school, out of ten has computer sets. It is worth noting that none of the ten schools has internet facility. Ozoji (2003) reported in a study that most of our secondary schools do not have software for the computer to function. One of the unity schools has five computers against a population of 900 and no internet software was installed. The facilities are grossly inadequate for any meaningful teaching or learning to take place. On teachers' competence, teachers in Nigerian secondary schools are not competent in basic computer operation and in the use of generic software (Yusuf, 2005), although they have positive attitude towards the use of computer in Nigerian secondary schools. This finding revealed the low level of ICT penetration in the Nigerian school system. This reveals the state of ICT in most of the Nigerian secondary schools. The main purpose of this study was to investigate the availability of ICT facilities, level of knowledge possessed by teachers in some selected secondary schools in Oyo Metropolis.

Research Design

The descriptive survey method was considered as the appropriate design because the study is directed towards people, their opinions, attitude and behaviors. The area covered by the study is Oyo Metropolis, covering the four local governments that make up Oyo Metropolis. They are Oyo East, Oyo West, Atiba and Afijio Local Government Area.

Research Question

The following research questions were formulated for the study:

- How readily available are ICTs facilities in schools for the purpose of teaching and learning?

- Do teachers use ICT in Teaching?
- Do teachers in secondary schools have the needed experience and competence in the use of computers either for educational or industrial purpose?

Population of the Study

The population of this study was made up of 120 teachers from twelve secondary schools that were randomly selected from the secondary schools in the four local governments using the random sampling technique. Ten teachers were randomly selected from each of the twelve schools making a total of one hundred and twenty (120) teachers for the study.

Research Instrument

The instrument for the study was developed by the researcher based on established procedures in literature. The instrument contained of three sections. Section A focused on the demographic information of the teachers. Section B focused on the availability of ICT facilities in the schools while section C contained questions on the usability of these facilities by secondary school teachers.

Validity and Reliability of Instrument

The face validity and content validity of the instrument were verified by experts in the Computer Science Department and School of Education, Federal College of Education (Sp) Oyo. The various suggestions made were used to modify the instrument. In order to ascertain the consistency of the instrument, test-retest method was used to ascertain the reliability. The questionnaire was administered twice on the sample. The interval between the first and second administration was three months. A correlation of 0.84 was achieved which was considered high enough to justify the reliability of the questionnaire.

Procedure for Data Collection

The researcher visited the selected schools to administer questionnaire developed for the study. The 120 copies of the questionnaire were administered on the respondents and collected back on the spot.

Methods of Data Analysis

Data Collected from the study were analyzed using descriptive statistics of frequency counts and Simple Percentage.

Results

The demographic information of the participants is given in table 1. Figures from Table 1 below shows that 8.33% of the respondents are between the ages of 21 and 30, while 50% falls between 31 and 40, 33.33% are between 41 and 50 while 8.33% are 50 years and above. It also showed that 58.33 of the respondents are female while 41.67% are male. 25% of the respondents are NCE holders, while 66.67% hold a first degree and 8.33% of the respondents are masters degree holder. 8.33% of the respondents have spent 1 to 10 and 31 years above respectively in the teaching service. 58.33% of them have spent 11 to 20 years while 25% of them have spent 21 to 30 years in secondary schools as teachers.

Table 1: Demographic Information of Respondents

ITEM	FACTOR	PERCENTAGE
AGE	Age (Year)	Percentage
	21 – 30	8.33
	31- 40	50
	41 -50	33.33
	51 and above	8.33
Sex Distribution	Sex	Percentage
	Female	58.33
	Male	41.67
Educational Qualification	NCE	25
	B.A/B.Sc/B.Ed/B.Sc Ed/B.A Ed./HND	66.67
	M.Sc/M.A/M.Ed	8.33
Years of Experience	1 – 10	8.33
	11- 20	58.33
	21 – 30	25
	31 and above	8.33

Research Question 1: How readily available are ICTs facilities in schools for the purpose of teaching and learning?

The analysis as it applies to the above research question is as shown on Table 2 below

Table 2: Availability of ICT Facilities in Schools

SN	STATEMENTS	YES	%	NO	%
1.	There are enough computers in my school	30	25	90	75
2.	My school has Educational Software for teaching	10	8.33	110	91.67
3.	Our computers are connected to the internet	5	4.17	115	95.83
4.	We have interactive Boards in our schools	0	0	120	100
5.	There are Television set that we use for teaching	10	8.33	110	91.67
6.	We have enough printers	10	8.33	110	91.67
7.	There are Photocopiers in my schools.	15	12.5	105	87.5
8.	Multimedia Facilities are available for teaching	0	0	120	100
9.	We have Projectors in our schools	2	1.67	118	98.33
10.	Presence of a virtual library	0	0	120	100

The results in table 2 are on the availability of ICT facilities in secondary schools. Results showed that ICT facilities are not readily available, with items 1 to 10. 75% of the teachers stated that they do not have enough computers. The study showed that none of the school covered in this study have interactive boards, multimedia facilities and virtual library. 8.33% of respondents said that they have educational software, television set and printers, while 4.17% of the respondents said their computer systems are connected to the internet. 12.5% of the respondents said they have photocopiers in their schools.

Research Questions 2 & 3: Do teachers use ICT in Teaching? and Do teachers in secondary schools have the needed experience and competence in the use of computers either for educational or industrial purpose?

The Table 3 below shows results for the analysis of the research questions stated above.

Table 3: Teachers use of ICT Facilities

SN	STATEMENTS	YES	%	NO	%
1.	I can boot the computer	40	33.33	80	66.67
2.	I use the computer to teach my students	12	10	108	90
3.	I use the computer to keep records	02	1.67	118	98.33
4.	I use Microsoft Word to type Questions and other documents	18	15	102	85
5.	I use Microsoft Excel to teach basic mathematics	02	1.67	118	98.33
6.	I use Power Point In Presenting my Lesson	00	00	120	100
7.	I browse the Internet to get materials for teaching	09	7.5	111	92.5
8.	I have an e-mail address	35	29	85	71
9.	I can use a search engine such as google	12	10	108	90
10.	I use education software such as CAI for teaching	08	6.67	112	93.33
11.	I can set up a database using MS Access	00	00	120	100
12.	I can use a scanner to copy images	02	1.67	118	98.33
13.	I can operate a printer that is connected to the computer	40	33.33	80	66.67
14.	I can set up a multimedia projector	02	1.67	118	98.33

The Table 3 above provides answers to the research question 2 and 3. 66.67% of the respondents cannot boot the computer. 10% of them use the computer to teach their students. 1.67% use the computer to keep records and use Microsoft Excel to teach basic mathematics, while 15% use Microsoft word to type their questions and other document. 7.5% of the respondents get their teaching material from the internet, 29% have e-mail address, so it means 29% of the respondent use the computer to send and receive mail. 10% of the respondents can use a search engine, while 6.67% of them use educational software such as CAI for teaching. 1.67% of the sample can use a scanner and can also set a multimedia. 33.33% of the respondents can print using a printer. The study showed that none of the respondent use power point and Microsoft Access.

Discussion

The result of this study shows that ICT facilities are not readily available in the schools covered by this study. It also shows that most of the schools are not connected to the internet. Schools with computers do not have the relevant educational software required by their students. In addition, the computer available in these schools cannot meet the need of the large population of students in these schools. Some schools with internet connectivity have been cut off because they have not been able to pay their access fee. The findings of this study are in line with that of Fakeye (2010) and Oyejola (2007) that most schools in Nigeria are ill equipped for the application of ICT.

The study also showed that most teachers in secondary do not use ICT teaching students, for administrative purpose and for their personal purpose. It observed that most of these teachers lack the knowledge, competence to use ICT to facilitate teaching-learning process. This Fakeye (2010) attributed to non availability of ICT facilities. He believed that the non availability of these facilities greatly hinders access and inadequate training of teachers on the use and application of the computer.

Conclusion

From the study it was concluded that ICT facilities are not readily available in our secondary school and that there is low level of ICT utilization in our secondary schools. The study revealed that most teachers lack the basic skill to use the computer and other ICT devices. Based on the findings, it is however, recommended that:

1. Government should ensure that ICT facilities be provided in schools. Education Tax Fund should be involved in procuring computer for secondary schools.
2. Government should revisit the curriculum at secondary schools level with a view to incorporating the use of computer and ICT assisted instruction in the teaching and learning process.
3. Teachers at secondary school levels should be trained on the use of ICT facilities through regular seminars and computer literacy workshops to keep them abreast of computer and ICT based instruction.

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