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Assessment of Secondary School Teachers' Use of Information and Communication Technology (ICT) in Anyingba Metropolis, Kogi State, Nigeria

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Abstract

This study aimed at assessing teachers' competency in the use of ICT. Five research questions and two hypotheses tested at 0.05 alpha level guided the study. Using purposive sampling techniques, 140 respondents were sampled from the total population of secondary school teachers in Anyingba metropolis. The population consist the entire teachers of both public and private secondary school in Anyingba metropolis. A modified instrument tagged "Teachers ICT use survey" (TICTUS) adapted from ICT survey indicator for teachers and staff by UNESCO (2004) was used to gather data for the study. The instrument was trial tested on 30 respondents from Benue State which was outside the study area. The reliability coefficient was determined using Cronbach Alpha (α). The overall reliability index was 0.82. Statistically weighted mean and simple percentage (%) were used for answering research questions, t-test was used for testing the null hypotheses and Special Package for Social Sciences (SPSS) version 21 was the software used to run the analysis. The findings of the study revealed among others that there is poor teachers' use of ICT to facilitate teaching and learning. Recommendations were made based on results found.

Keywords: Assessment, Teachers, information and communication technology (ICT), secondary schools and Kogi State.

Manuscript History

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In Nigeria, General Muhammadu Buhari at the March 28 polls, promised to make education one of the top priority in his administration, saying no nation can progress without educating her people and late President Musa Yar'Adua also listed education among his seven point agenda that will guide his administration in the vision 20-20-20 which was aimed at ensuring that Nigeria is placed among the leading 20 world economies by the year 2020 in global technology. In the light of these, United Nations Educational, Scientific and Cultural Organization (UNESCO) in Sub-Sahara Africa Regional Bureau for Education in Nigeria designed a project named 'Preparing the Next Generation of Teachers through ICT'. It is one of the most recent initiatives of UNESCO for the professional development of teachers (UNESCO, 2004). Teachers in all nations constitute a major input in the accomplishment of educational goals and objectives. The National policy on Education (Federal Republic of Nigeria, 2004) in Nigeria reiterates that no education system can rise above the quality of its teachers. Hence, teachers are indispensable within the teaching – learning process. Also trained and effective teachers are the principal assets of any educational system. Adako (2006) stated that if Nigeria must catch up with other developed countries at a very reasonable pace, the nation builders (teachers) must be abreast of all new development around the world more so that the world is now seen as a global village. Considering the impact of ICTs in the modern world as conceived by Obodo (2004), it means that education reform practices should focus on equal access and quality of education which should highlight the importance of change in the education sector through the use of ICTs and equipping new generation teachers with enhanced skills to operate in this 21st century.

In order to meet the goals such as; Sustainable Development Goals (SDGs), Education for All (EFA), World Summit on the Information Society (WSIS) by 2030 and beyond, UNESCO-UIS (2006) Posit that adequate teachers' training in ICT both in-service teachers and teachers trainees must not be taken for granted along side with investment of ICT in both secondary schools and teachers' training institutions across the Nation especially the developing countries. Hence, in the preparation of teachers for effective teaching and learning at all levels of education system starting from pre-primary to tertiary, availability of computer, ICT tools and use are the keys. Meanwhile, the assessment of teachers' use of ICT in facilitating teacher education for effective teaching and learning in secondary schools in Nigeria is still a challenge as many of the teachers cannot operate computer rather than use it to teach effectively and those under training in Colleges of Education, Institutes of Education and faculties of Education in Nigerian universities are not fully exposed to the use of ICT in the acquisition of skills and practical teaching.

Though, the use of ICTs in Nigeria and African countries generally is increasing and dramatically growing and there is a great deal of knowledge about how ICTs are being used in developed countries, but however no much information on how ICTs are being introduced into schools in developing countries (Beukes, 2006). From literature, it was evident that in some schools teachers and students accessibility to ICT is very limited because of the inadequacy of ICT tools and where they are privilege, they spent less time to access internet (Chiwere, 2006). This implies shortfall in teachers' knowledge of Information and Communication Technology (ICT) across the developing countries which is affecting their educational standard from meeting up the global demand on education. As a matter of fact with advancement in technology in this era, availability of ICTs vis-à-vis access in term of teachers and students ratio will make learning becomes a truly lifelong activity- an activity in which the pace of technological change forces constant evaluation of teaching process itself, and making lesson presentation an exciting experience. Teachers can use computers to simplify teaching, make learning experiences more effective and to offer students access to a

variety of learning tools, especially the e-learning and alternative view points. It affords teachers and students the opportunities to appreciate positively their cardinal tasks of teaching- learning and research activities. ICT has been a veritable tool that could be used to enhance quality of education in various ways by increasing learner's motivation and engagement, facilitating the acquisition of basic skills and enhancing teacher training. Adeyinka and Toyobo (2007) affirms that ICTs are transformational tools which when used appropriately can promote the shift to a learner- centered learning approach.

Thomas, (2004) and Ranga (2004) classified the application of computers and other communication technologies in education into three broad categories: Pedagogy, Training and Continuing Education. The pedagogical applicability of the ICTs is about learning with the support of various components of computer. Olakulehin (2007) emphasized that pedagogic application of ICTs, involves effective learning with the aid of computers and other information technologies, serving the purpose of learning aids, which plays complementary roles in teaching/learning situations rather than supplements the teacher. This means that ICTs can facilitate learning in schools and learning at home on one's own through methods like modeling, simulation and so on. The effective application of ICTs has advantage of increasing the learners' motivation to learn more and desirable attitudes towards actualizing more of ICTs tools.

The pronouncement of the government toward investing on ICT in education is a welcome development, and highly justified considering the backwardness of African nations in education. The National Universities Commission (NUC) made a laudable achievement in this direction by putting in place physical ICT infrastructures in some selected universities in Nigeria. Even the National Commission for Colleges of Education (NCCE) has mandated all colleges' education to be computer literate. Expectedly, the Federal Government of Nigeria has put ICT and teacher education in the fore front as one of the parameters for ensuring the achievement of the Millennium Development Goals (MDGs) in Nigeria which now re-branded to Sustainable Development Goals (SDGs).

In addition, 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 Federal Government commissioned a Mobile Internet Unit (MIU) again 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 together networked and connected to the internet. The MIU is also equipped with printers, photocopiers and a number of multimedia facilities. Internet connectivity is provided through 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 to train teachers and students (Kpangban, 2010). Meanwhile, the number of these buses is so small and as a result most rural secondary schools are yet to benefit from this project.

Secondary school as the name implies in this work can be describe as education children receive after primary education and before tertiary stage and it is aimed at preparing the youth for a useful living within the society, for those who are able and willing, and the preparation for higher education (Abdul-Salam,2007). It is a six years course and it is in two stages of three years each, called the junior and senior stages of schools respectively. The Federal Government funds 60% secondary schools and the rest are funded by the State governments. The education that is offered at this level has two purposes according to National Policy on Education (FGN, 2004);

- The one purpose is to prepare pupils to exit school with the necessary skills to find employment.
- The other is to prepare them to continue with academic careers in higher education.

Teachers of secondary schools in this regard are those teachers who have acquired skills and training in teaching at this level of education following the curriculum to provide appropriate knowledge to the target learners. They are capable of creating behavioural change in terms of cognitive, psychomotor as well as affective domain to the learners (Yusuf, 2005). So, to successfully initiate and implement ICTs in education or school curriculum depends strongly on teachers " support". If teachers are trained on the use of technology in education, the adoption and integration of ICT into teaching and learning processes will be easy and government target of supplying ICTs tools to schools to revolutionize the learning process will be achieve.

Regrettably, research works have shown that most secondary schools have either insufficient or no ICT tools especially in the rural areas 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, 2001; Chiemeké, 2004). Fakeye (2010) also found out in a study carried in Ibadan that most of the schools covered do not have computers, hence are not connected to the internet. He added that 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 Yusuf, (2005) 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, many teachers in Nigerian secondary schools are not competent in basic computer operation and in the use of generic software (Yusuf, 2005). This finding revealed the low level of ICT availability and utilization in Nigerian school system.

It is against this background, that the researchers are triggered to assess teachers' use of ICT for Teaching in Secondary Schools in Anyigba Metropolis, Kogi State, Nigeria.

Statement of Problem

Students' performance in many subjects has consistently been reportedly low over the years in Nigeria especially in public examinations such as SSCE and JAMB, see WAEC Chief

Examiners' Report, 2010, 2013 and 2014). In 2011, the registrar and Chief executive of JAMB reported that a total of 1,493,603 candidates sat for UTME, but 28,069 failed. In 2012, a total of 1,503,931 candidates sat for UTME but 27,266 failed. In 2015 a total of 1,644,110 candidates sat for UTME but 12,110 candidates results were withheld while 68,309 candidates from various centers failed. This dwindling performance has become a source of worry to parents and other stakeholders in education. What could be responsible for this abysmal performance? Is it the use of computer base test that is responsible for this failure? Therefore, there is the need to investigate teachers' use of ICTs for teaching and learning at secondary school level in Kogi State to know where the problem is emanating from because teachers in all nations constitute a major input in the accomplishment of educational goals and objectives.

Purpose of the Study

The main purpose of the study is to assess secondary school teachers' use of information and communication technology (ICT) in Anyingba Metropolis, Kogi State. Specifically, the study seeks to find out the:

1. ICT tools teachers have access to in their schools
2. frequency of access to ICT by teachers per week
3. adequacy of the ICT tools in schools
4. ease of use of ICT tools by the teachers
5. hindrance to use of ICT tools by the teachers
6. teachers' perception of the usefulness of the ICT tools.

Scope of the Study

The study was conducted in Anyingba metropolis of Kogi State. The focus is on assessment of secondary school teachers' use of information and communication technology (ICT) putting into consideration variables like gender and school-type.

Research Questions

The following research questions were raised:

1. Which ICT tools do teachers have access to in their schools ?
2. How often do teachers have access to ICT tools per week?
3. What is the adequacy level of various types of ICT available in the school?
4. What are the factors hindering teachers use of ICT in schools?
5. What is the perceived ease of teachers use ICT tools in their schools?
6. What is the teachers' perceived usefulness of ICT tools in schools?

Hypotheses

Two hypotheses were formulated to guide the study and were tested at 0.05 probability level.

H0₁: There is no significant difference between male and female teachers' perceived use of ICT tools in Kogi State.

H0₂: There is no significant difference between Private and Public secondary school teachers' use of ICT tools in Kogi State.

Methodology

Research Design

Descriptive research design was adopted. Onwuegbuzie and Colins (2007) defined descriptive design studies to concern mainly with describing events as they are, without any

manipulation of what caused the events. That is, any study which seeks merely to find out “what is” and describes it, is descriptive. This design seemed to be very appropriate for the study since the study concerned mainly with investigating, documenting and describing secondary school teachers’ use of information and communication technology (ICTs) in Anyigba Metropolis, Kogi State, Nigeria.

Area of the study

The geographical location from where the teachers were drawn was Anyingba Metropolis under Dekina LGA of Kogi State. There are fifteen (15) viable and functional government secondary schools and six (6) private in this area. This metropolis constituted 68% of the population of government teachers in Kogi State. Anyigba is the headquarter of Dekina LGA, the peoples’ common language is Igala and major occupation is farming dominated with Muslim religion. The reason for choosing this area for the study was that a great number of teachers are here because is an urban area, food affordable, good road network, electricity supply fairly good, standard private schools, medical facilities and other social amenities.

Population of the Study

The target population for this study was made up of entire secondary schools’ teachers in Anyingba metropolis of Kogi State. Data from the Kogi State Secondary Education Board (KSEB) Lokoja, shows that the total populations of government teachers in Anyingba Metropolis are two hundred and twenty (220).

Sample and sampling technique

The sample size for this study was 140 secondary school teachers drawn out of the population size of 220. The sample size was computed using Yamane (1967) sample size determination formula.

$$n = \frac{N}{1+N(e)^2}$$

where n = sample size

N = total population

e = sample error (usually, 5% or 0.05)

Hence,

$$n = \frac{220}{1+220(0.05)^2} = \frac{220}{1+220(0.0025)} = \frac{220}{1.55} = 141.935$$

Hence, the sample size was 140 teachers approximately.

These teachers were drawn from the **sample frame** through simple random sampling techniques.

Instrument for Data Collection

A modified instrument tagged “Teachers ICT use survey” adapted from ICT survey indicator for teachers and staff by UNESCO (2004) was used to gather data for the study. The instrument consists of two sections. Section one sought the respondents’ demographic information like sex, name of school and school type. The second section contained ten (10) items which respondents were required to answer. Items 1-8 were dichotomous items. While items 9 and 10 were modified response format of likert four point rating scale of strongly agree (SA), agree (A), disagree (D) and strongly disagree (SD) respectively. To ascertain the reliability of the instrument after modification, it was administered on 30 respondents outside the study area. The reliability co-efficient through cronbach alpha statistics yielded an r = 0.82. Special Package for Social Science (SPSS) software version 21 was used to run the analysis.

Procedure

The 140 teachers sampled were administered the “Teachers ICT Assessment Questionnaire (ICTA)” in their respective schools with the permission granted by the various authorities of the schools. The administration of the instrument took place after the school hour in each of the schools. The entire respondents were informed about the date of the exercise in advance. A day was set aside for each school. Out of the 140 instrument administered, all were valid for the analysis representing 100%.

Data Analysis

Data collected for the study were analyzed using frequency count, simple percentages and weighted mean. While t – test was used to test the null hypotheses that guided the study at 0.05 level of significance.

Results

The results of the analysis are presented in the tables below:

Research Question 1: Which ICTs tools do teachers have access to in their schools?

Table 1: Teachers Access to ICTs

| | YES | | NO | | Total | % |
|--------------------|-----------|-------|-----------|-------|-------|-----|
| | Frequency | % | Frequency | % | | |
| Computer | 24 | 17.14 | 116 | 82.86 | 140 | 100 |
| E-mail | - | - | 140 | 100 | 140 | 100 |
| Internet | - | - | 140 | 100 | 140 | 100 |
| Digital Camera | 15 | 10.7 | 125 | 89.29 | 140 | 100 |
| Scanner | 26 | 18.6 | 114 | 81.43 | 140 | 100 |
| Video Equipment | - | - | 140 | 100 | 140 | 100 |
| Digital Projector | 20 | 14.3 | 120 | 85.72 | 140 | 100 |
| Digital Calculator | 88 | 62.86 | 52 | 37.14 | 140 | 100 |
| Digital printer | 25 | 17.9 | 115 | 82.14 | 140 | 100 |

Table 1 above shows that 24 (17%) of the teachers had access to computer in their schools. While 116 (82.86%) of the teachers had no access to computer in their schools. In the case of E-mail and internet tools, none of the teachers in all the schools studied had access. The table also shown that 15 teachers (10.7%) indicated that they had access to digital camera while 125 (89.29%) had no access to digital camera. 26(18.6%) of teachers had access to scanner while 114(81.43%) had no access to scanner. No teachers in all the studied schools had access to video equipment. 20(14.3%) of teachers had access to digital projector while 120(85.72%) had no access. 88(62.86%) of the teachers had access to digital calculator while 52(37.14%) had no access. In the case of digital printer, 25(17.9%) had access while 115(82.14%) had no access.

Research Question 2: How often do the teachers have access to ICT tools per week?

Table 2: Teachers hours of access to ICTs tools per week

| Hours of Access per week | No of Teachers | % of teachers who have access to ICT per week. |
|--------------------------|----------------|--|
| 0 – 5 Hours | 59 | 42.1 |
| 6 – 10 Hours | 35 | 25.0 |
| 11 – 15 Hours | 20 | 14.3 |
| 16 – 20 Hours | 14 | 10 |
| 21 Hours above | 12 | 8.5 |
| Total | 140 | 100 |

Table 2 above shows that 59 (42.1%) of teachers have access to ICTs tools in their schools between 0 – 5 hours per week. The table also revealed that 35 teachers at (25.0%) had access to ICTs tools between 6 – 10 hours per week. 20 teachers at 14.3% access tools between 11-15 hours per week. While 14 teachers at 10% access ICT tools between 16-20 hours per week. Only 12(8.5%) of the teachers access ICTs tools at 21 hours and above per week. This indicated that teachers had access to ICT tools in their various schools with variation in the frequency to which they access them.

Research Question 3: What is the adequacy level of various aspects of ICTs tools available in the schools?

Table 3: ICTs tools adequacy in schools.

| Ratings | Computer | Scanner/ Printer | Digital Calculator | Digital Camera | Internet Access/ e-mail | Projector |
|----------------------------------|-------------|---------------------|-----------------------|-------------------|-------------------------------|-------------|
| Very adequate | 40 (28.57%) | 37(26.43%) | 47 (33.57%) | 30 (21.43%) | 0 | 12 (8.57%) |
| Adequate | 35 (25%) | 40 (28.57%) | 45 (32.15%) | 35(25%) | 0 | 18 (12.86) |
| Fairly adequate | 27 (19.29) | 45 (32.15%) | 38(27.14%) | 45(32.15%) | 0 | 30 (21.43%) |
| Poor | 18 (12.86) | 18 (12.86%) | 8 (5.71%) | 25(17.86%) | 75(53.57%) | 35 (25%) |
| V.poor/ Non existence | 20 (14.29) | 2 (1.43%) | 1(0.71%) | 5(3.57%) | 65(46.43%) | 45 (32.15%) |
| TOTAL | 140 (100%) | 140(100%) | 140(100%) | 140(100%) | 140(100%) | 140 (100%) |

Table 3 above shows a high rating of **very adequate** with 40 (28.57%) for computer hardware, 37(26.43%) for scanner/printer, 47(33.57%) for digital calculator, 30(21.43%) for digital camera, 0% for internet access, and 12(8.57%) for projector respectively; while **adequate** rating follows as thus; 35(25%) for computer hardware, 40(28.57%) for scanner/printer, 45(32.15%) for digital calculator, 35(25%) for digital camera, 0% for internet access and 18(12.86%) for projector. Under **fairly adequate**, computer hardware has 27(19.29%) rating, 45(32.15%) for scanner/printer, 38(27.14%) for digital calculator,

45(32.15%) for digital camera 0% for internet/e-mail and 30(21.43%). Under **poor rating**, computer hardware has 18 (12.86%), scanner/printer has also 18(12.86%), digital calculator has 8 (5.71%), digital camera 25(17.86%), internet/e-mail has 75(53.57%) and projector has 35(25%). Under **very poor/Non-existence**, 20(14.29%) for computer hardware, 2(1.43%) for scanner/printer, 1(0.71%) for digital calculator, 5(3.57%) for digital camera, 65(46.43%) for internet/e-mail and finally 45(32.15%) for projector.

Therefore, from this table 3, it was evidenced that Internet services is one of the major ICTs tools that is poor and not adequate for teachers in most of the secondary schools in Anyingba metropolis.

Research Question 4: What are the factors hindering teachers’ readiness and confidence in using ICT?

Table 4: Factors hindering teacher’s readiness and confidence in using ICTs

| S/N | ITEMS | Accepted Frequency (%) | Not Accepted Frequency (%) | Total (%) |
|-----|--|------------------------|----------------------------|------------|
| 1 | Teachers lack of expertise in ICT | 85 (60.71%) | 55(39.29%) | 140 (100%) |
| 2 | Lack of confidence in using ICT | 30(21.43%) | 110(78.57%) | 140(100%) |
| 3 | Lack of knowledge of necessary computer software | 100(71.43%) | 40(28.57%) | 140(100%) |
| 4 | Insufficient knowledge of e-learning process | 120(85.71%) | 20(14.29%) | 140(100%) |
| 5 | Lack of knowledge of how to evaluate the use of ICT in teaching and learning | 98 (70%) | 42(30%) | 140(100%) |

From table 4 above, 85 teachers with the percentage value of 60.71% accepted that lack of expertise had hindered many teachers readiness to use ICT in teaching/learning. While 55(39.29%) of teachers did not accept. Item 2, the case of lack of confidence in using ICTs, only 30 teachers with the percentage of 21.43% accepted while 110 teachers with percentage value of 78.57 did not accepted that lack of confidence was a factor hindering teachers use of ICTs to teach. In item 3, 100(71.43%) of teachers accepted that lack of knowledge of necessary computer software was the factor hindering teachers use of ICTs tools in class while 40(28.57%) of teachers did not accept. In item 4, 120(85.71%) accepted that teachers’ lack of e-learning knowledge was responsible for their readiness to use ICT in teaching/learning while 20(14.29%) of teachers did not accept. Finally, in item 5, 98(70%) of teachers accepted that lack of knowledge of how to evaluate the use of ICT in teaching/learning was the factor responsible for teachers’ readiness to use ICT in teaching while 42(30%) of teachers did not accept. Overall, it was evidence from the table that many teachers lack knowledge of how to evaluate the use of ICT in teaching/learning.

Research Question5: what is the perceived ease of teachers’ use of ICT tools in their school? The responses of the teachers using the modified 4points likert scale of SA,A,DA and SD was subjected to SPSS software to compute the mean (x) and standard deviation(SD) The result is presented in Table below 5.

Table 5: Teachers perceived ease of using ICT

| S/N | ITEM | MEAN (X) | SD | Remark |
|-----|---|---------------|---------------|------------------|
| 1 | Using ICT makes it more easy to control the class | 3.1714 | .71914 | Agreed |
| 2 | ICT makes lesson more interesting to the learners | 3.1214 | .73424 | Agreed |
| 3 | ICT makes preparation of learning experience more difficult to teachers | 2.0571 | .63892 | Disagreed |
| 4 | Hardware and software problems often disrupt the lesson | 3.4714 | .56826 | Agreed |
| 5 | Using ICT in teaching is expensive & time consuming | 3.3143 | .66879 | Agreed |
| | GRAND MEAN | 3.0271 | 0.6659 | Agreed |

Note : accepted Mean = 2.55 and above, Not accepted Mean = 2.55 below. (benchmark)

Data in table five (5) above depicts a fairly mean and standard deviation analysis of the teachers' perception about the perceived ease of using ICT. Item one (1) had the mean score of 3.1714 and standard deviation of 0.71914, item two (2) had the mean score of 3.1214 and standard deviation of 0.73424, item three (3) had the mean score of 2.0571 and standard deviation of 0.63892, item four (4) had mean score of 3.4714 and standard deviation of 0.56826 and finally item five (5) had the mean score of 3.3143 with the standard deviation of 0.66879. From the table, all the items has mean scores above the benchmark except item three (3) with the mean score of 2.0571 which was below the decision point. This implies that all the items are relevant to the study except item three (3) which said that ICT makes preparation of learning experience more difficult to teachers. Conclusively, since the grand mean of 3.0271 is above the benchmark of 2.5, shows that the instrument was relevant the study.

Research Question 6: What is the teachers perception about the perceive usefulness of ICT? Teachers were asked to rate usefulness of ICT tools in their lesson. The result is presented in Table 6 below.

Table 6: Teachers perceived usefulness of using ICT

| S/N | ITEM | MEAN (X) | SD | Remark |
|-----|---|-------------|------|-----------|
| 6 | Using ICT makes lesson more interesting | 3.97 | .729 | Agreed |
| 7 | Using ICT in my teaching is not enjoyable | 2.89 | .778 | Disagreed |
| 8 | Using ICT in teaching makes lesson more funning | 3.48 | .744 | Agreed |
| 9 | Using ICT makes lesson more diverse & easy | 3.42 | .576 | Agreed |
| 10 | Using ICT improves presentation of teaching aid | 3.17 | .479 | Agreed |
| 11 | Using ICT makes lesson more difficult | 2.07 | .642 | Disagreed |
| 12 | Using ICT reduces students' motivation | 2.28 | .679 | Disagreed |
| 13 | Using ICT impair not students' learning | 2.88 | .791 | Agreed |
| | GRAND MEAN | 2.09 | 0.68 | Agreed |

Note : accepted Mean = 2.55 and above, Not accepted Mean = 2.55 below. (benchmark

The result in Table 6 above shows the Mean and Standard deviation of the teacher’s perception of the usefulness of ICT tools in teaching and learning. Item 6, 8, 9 and 13 with the mean score of 3.97,3.48, 3.42 and 2.88 respectively agreed that using ICT makes lesson interesting, fun, easy, improves presentation of teaching aid and improves students motivation. While item 7, 11 and 12 with the mean score of 2.89, 2.07 and 2.88 respectively has disagreement remarks. This implies that ICT does not make teaching not enjoyable, it does not make lesson more difficult and it does not reduce students’ motivation rather increase their motivations.

Hypotheses Testing

The null hypotheses that guided the study were tested using t-test at 0.05 probability level to establish whether significant difference existed between teacher’s gender and ICTs usage in secondary schools.

Hypothesis One.

There is no significant difference between male and female teachers` perceived use ICT tools.

Table 7: Summary of Analysis of T-test on assessment of secondary school teachers’ use of ICT with respect to Gender.

| | GROUP | N | Mean | SD | t | df | Sig. |
|---------------|---------------|----|-------|-------|-------|-----|------|
| GENDER | MALE | 70 | 39.19 | 4.505 | -0.38 | 138 | 0.97 |
| | FEMALE | 70 | 39.21 | 4.459 | | | |

The table above indicated that the null hypothesis was accepted given the fact that the probability level (p-value = 0.97) was greater than 0.05 level of significance at 138 degree of freedom. This implies that there is no statistical significant difference existed between male and female teachers` perceived use of ICT tools as an instructional strategy in classroom.

Hypothesis Two

There is no significant difference between Public and Private secondary school teachers perceived use ICT tools.

Table 8: Summary of Analysis of t-test on assessment of secondary school teachers’ use of ICT with respect to school-type.

| | GROUP | N | Mean | SD | t | df | Sig. |
|--------------------|----------------|----------|-------------|-----------|----------|-----------|-------------|
| SCHOOL-TYPE | PRIVATE SCHOOL | 60 | 39.28 | 4.381 | 0.191 | 138 | 0.85 |
| | PUBLIC SCHOOL | 80 | 39.14 | 4.556 | | | |

From table 8 above, the null hypothesis that there is no significant difference between Public and Private secondary school teachers perceived use ICT tools was accepted given the fact that the probability level (p-value = 0.85) is greater than 0.05 level of significance at 138 degree of freedom. This implies that both private and public secondary school teachers perceived the use of ICT tools equally to have immense impact on knowledge delivery and students learning.

Discussion of Findings

This discussion took cognizance of the six (6) research questions and hypotheses formulated for the study.

Teachers Access to ICTs Tools

The finding of research question one correctly showcase the kind of ICTs tools teachers have access to in their schools. From the data collection and analysis, it was evident that in the case of E-mail and internet tools, all the teachers in all the school covered have poor access the same was applicable to video equipments. While other tools like computer, 17.14% teachers have access to it, 10.7% teachers have access to digital camera, 18.6% have access to scanner, 14.3% have access to digital calculator and 17.9% have access to digital printer respectively. The findings are interested as they are in consonance with the earlier findings of Chiware (2006) who reported that in some schools, teachers and students accessibility to ICTs is very limited because of inadequate supply and where the ICT tools are available, they spent less time to access internet. That is while Obodo (2004) opined that education reform policy should focus on equal accessibility and equality of education which should highlight the importance of change in education sector through the use of ICTs and equipping new generation teachers with enhanced skills to operate in this 21st century.

Teachers Hours of Access to ICTs Per Week

The finding of research question two showcase the teachers hours of access to ICTs per week. It was very glaring from the data analysis that the number of hours teachers access ICTs per week was poor. This was a result of factors such as limited supply of ICTs tools and inadequate power supply. For instance, from the analysis 59 (42.1%) of teachers had access to ICT in their schools between 0-5 hours per week, 35 (25.0%) had access to ICTs tools between 6-10hours per week, 20 (14.3%) had access to ICT tools between 11-15hours per week, 14 (10%) teachers had access to ICTs between 16-20hours per week and 12(8.5%) teachers had access to ICTs tools between 21hours and above per week respectively. This is finding is very important because it is in line with the findings of Fakeye (2010) in Ibadan that most secondary schools have no computer system and those that have are not connected to internet while those that are connected to internet lack regular power supply to operate, these

affect many teachers hours of access to ICT tools per week. The finding concluded that there is low level of ICT accessibility and utilization by teachers in Nigeria Secondary schools.

Adequacy of ICT tools in Schools

The finding of research question three (3) revealed the adequacy of ICTs tools available in schools for teachers' use in Anyingba metropolis. From the data table, it was evident that ICT tools like projector had 12(8.6%) adequate, digital camera 30(21.43%), scanner/printer 37(26.43%), computer 40(28.57%) and digital calculator 47(33.57%) respectively. This implies that the hardware materials aspect of ICTs is what was available in most of the school covered. The software aspects of ICTs are not available as a result of no internet connectivity and electricity. So, lack of internet services is one of the major ICT tools that was poor and not adequate for teachers to use in most secondary schools in Anyingba , Kogi State. This finding was crucial for it has bearing with the finding of Ozoji (2003) in Abuja that one of the unity secondary schools covered had five (5) computers against the population of nine hundred (900) and no internet was installed. On teachers competency, the scholar reported that many teachers in Nigeria Secondary schools are not competent in the use of ICT tools in teaching and learning.

Factors Hindering Teachers Readiness and Confidence in Using ICT Tools

The result of the finding of research question four (4) showcase considerable number of factors hindering teachers' readiness and confidence in using ICTs. From the analysis, it was evident that lack of expertise in ICTs is one the factors hindering readiness and confidence of some teachers from using ICTs in teaching. Another thing was knowledge of necessary computer software that facilitates ease manipulation of computer. To add to these, was lack of insufficiency knowledge of e-learning and lack of how to evaluate the use of ICT in teaching and learning. This finding is very important because it corroborates the report by Abdul-Salami (2007) that most teachers in secondary schools are ready to use ICTs in teaching but needed training or technical support on how to use ICTs tools effectively. In the way, Adomi and Kpangban (2010) in a study conducted reported that teachers are ready to use ICT tools but needed technical support to maximize their expertise. This confirms the assertion that training and practice makes perfection and determine confidence. So, many secondary school teachers in the study area could not use ICTs confidently in teaching and learning process because they are not trained.

Teachers' Perception of Ease of ICT Tools

The findings in research question five (5) depict the perceived ease of teachers' use of ICT tools in school. In all the schools covered, teachers agreed that using ICT make it easier to control the class and make lesson more interesting to the learners. This finding is interesting because is in consonance with the finding of Olakulehim (2007) that ICTs application has the advantage of heightening the motivation, helping recall of previous learning, provide new instructional stimuli, activating the learners response, providing systematic and steady feedback on any learning content. That is, all subject can be learn with the aid of ICT tools ranging from simple to complex subjects.

Teachers Perceived Usefulness of Using ICTs

The result of research question six (6) showcase teachers' perception on the usefulness of ICTs in teaching. The finding revealed that teachers perceived using ICTs in teaching to be very useful because it facilitate knowledge delivery and improves learners performance. This finding corroborates with the discovering of Ozoji (2003) who stated that in this modern society of science and technology, effective teaching and learning cannot be separated from

the use of ICTs. Conclusively, it was evident also from the finding that gender has no statistical significant on the assessment of secondary school teachers use of ICTs. This means that both male and female teachers knows the usefulness of ICTs in teaching and can use it to teach irrespective of the subject.

Conclusions

The use of information and communication tools such as internet, e-mail, , computer video camera, projector etc in class and conferences have made it possible to overcomes barriers of space and time, and opens new possibilities for learning. There is now an increasing awareness regarding the potentials of ICTs in learning. Many private and public secondary schools in the country are now infusing ICT into their teaching activities. The race has become rather dramatic because the students seem to be leading the teachers in e-capabilities. The computers and Internet facilities in the homes of the affluent students complemented by the cybercafé proliferating the entire country have provided hundreds of thousands of Nigerian secondary school students an unprecedented opportunity to join millions of their colleagues around the globe to surf and navigate.

Therefore, this study has shown generally that ICT now have far reaching implications in teaching and learning at the secondary school level in Nigeria. This is because teachers themselves have now perceived it usefulness. However, we should not forget the fact that it's not every teacher in the country today that is now applying the use of ICTs during the lesson. The need for further development, provision of ICT tools and use among teachers particularly at this level is highly necessary.

Recommendations

Based on the findings of the study, the following recommendations were made:

- The ministry of education and local government education authority should provide computers, Internet and other ICT tools in all the government own schools so as to encourage teachers use of ICTs.
- Employers of teachers should give sufficient technical skills to their employees on ICT tools so as to make them competent with the use of ICT tools.
- Teachers training institutions like institutes of education, colleges of education, National Teachers Institutes and so on should make ICTs course compulsory for all the teachers under training to make them familiar with the use of ICTs in teaching and learning.

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