Information and Communication Technology in Primary Schools

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***Abstract*: This study examined availability and utilization of Information and Communication Technology (ICT) in primary schools in Federal Capital Territory (FCT), Abuja. The study adopted the survey research design. Population of the study comprised 25,791 teachers in public primary schools in Abuja. A sample of four hundred and thirty-five (435) were randomly selected across the six Area Councils in the FCT, Abuja. Instrument of the study was titled: Availability and Utilization of ICT Assessment Scale (AU-ICT-AS). It was constructed in a 4-point modified likert scale format. The descriptive statistics of frequency count, means, variance, and percentages were adopted for data analysis upon which the research questions of the study were answered. It was found that ICT facilities are inadequately provided for teaching and learning in primary schools in the FCT, Abuja, hence, the benefits of ICTs in teaching and learning are grossly not explore and, most primary school teachers are not ICT compliance which in turn hindered utilization of ICT resources for teaching and learning process. Based on this, it was recommended that government should be proactive in discharging her roles in the provision of educational resources to schools, and teachers should be trained in the use of ICT facilities in teaching and learning process.**

I. INTRODUCTION

Information and Communication Technology (ICT) as a scientific-technological and engineering discipline and management technology is used in handling information, its application and association with social, economic and cultural matters (Uwameiye, 2015). ICT offers an opportunity to introduce new activities, new services, and applications into rural areas or to enhance existing services. ICTs can play a significant role in combating poverty and fostering sustainable development by creating information-rich societies and supporting livelihoods. Advancement in science and technology across the globe has made the world a global village in such a way that events in the north are viewed lively in the south without stress. This development gave birth to a global indispensable acronym "ICT", an umbrella term for a wide collection of computer-based instruments, resources, environments, procedures, and skills used for obtaining, processing, and communicating information (Shuaibu, 2018).

ICT has become an essential tool in every endeavour due to the fact that it makes activities of every profession easy. It has been integrated into every work of life such as financial, economic, agriculture as well as education. Integration of ICT in education has made education to be more effective across the world particular in the developed countries where technology has been used to dictate the pace of the world (Garba, Singh, Yusuf & Ziden, 2013). Unquestionably, ICT has impacted on the quality and quantity of teaching, learning, and research in teacher education. Therefore, ICT provides opportunities for student teachers, academic and non-academic staff to communicate with one another more effectively during formal and informal teaching and learning (Yusuf, 2008).

The drive towards greater use of ICT in teaching and learning process aimed at modernizing the exercise and equip learners with skills that make them able to use such technology in the workplace once they leave school. Other stated goals have been to reduce the teacher workload by making planning and resources available over the internet or to reduce bureaucracy by providing and exchanging information in electronic form (Oko & Michael, 2016). ICTs have the potential to innovate, accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Noor-Ul-Amin, 2013). Fortunately, the use of ICT for teaching and learning exercise is not limited to a particular level of education rather across every level – from primary to tertiary levels.

Primary school is the foundation for other levels of education, and it is the largest sub-sector of any education system and offers the unique opportunity to contribute to the transformation of societies through education of the young (Kalaš et al., 2012). Primary education is one of the most important parts of one's lifelong education. The system anchors the foundation of a person's foray into knowledge that determines his destiny during adulthood (Uno, 2016). Information Communication Technology is important in primary schools because it can help kids to achieve better results in other subjects and to find what they need and use information in particular ways. It is important that children become familiar with ICT at an early age because they will need those skills for the remainder of their education and in adult life. Undoubtedly, the educational future of every individual is shaped by primary education (Onyebueke, 2016). Hence, the utilization of ICT at this level of education cannot be overemphasized.

Usage of ICT in primary schools has numerous advantages. It enables pupils to create things of interest to themselves, helps

encourage teamwork and pupils to talk together and establish common grounds, and allows pupils to have access to more comprehensive sources of information. Skills are also learned relating to information retrieval (Edinson, 2011; Patsalides, 2011). Furthermore, ICT enables pupils to live a full life as a child and to realize his or her potential as a unique individual, enables pupils to develop as social being through living and cooperating with others and so contribute to good of society, and prepares them for further education and lifelong learning (Irish National Teachers' Organization, INTO, 2015).

Nigeria is not left behind for the crusade towards the integration of ICT in education, at all levels. This was captured in the National Policy on Education (NPE) as follows:

> *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 Information and Communication Technology (ICT) into education in Nigeria. The government shall, therefore, provide basic infrastructure and training for the realization of this goal at the school level. The 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 the modern world"* (Federal Republic of Nigeria, FGN, cited in Uno, 2016).

There is no doubt, the above effort will enable the children to grow in the ICT knowledge along with other areas of studies in their desire to acquire knowledge in life, and encourages individualized learning which is one of the modern approaches for the learning of science and technology-based subject, process and manage information (Onyebueke, 2016).

Unfortunately, level of available and use of ICT in schools in Nigeria are still under a serious dilemma despite the dramatic increase in the use of ICTs in numerous areas in present days including education all over the world. Usage of ICT in teaching and learning relies on upon the availability and accessibility of these facilities and the educators' capability in utilizing them (Ghavifekr, Kunjappan, Ramasamy & Anthony, 2016). There is low rate in the adaptation and application of ICT especially in the public schools in Nigerian which has been attributed to several factors which include inadequate ICT facilities in the schools, poor ICT policies, limited information infrastructures, poor perceptions of using ICT in education among teachers, students and the school administrators, among others (Apagu & Bala, 2015; Abubakar, 2016; Nwosu, Shaffe & Nurzatul, 2018). There is paucity of studies on primary school in this regards as well as in the Federal Capital Territory, FCT, Abuja, hence, the imperativeness of this study.

Objectives of the Study

Specifically, the study was designed to:

i. determine the extent of availability of ICT facilities in teaching and learning in primary schools in the Federal Capital Territory, Abuja; and

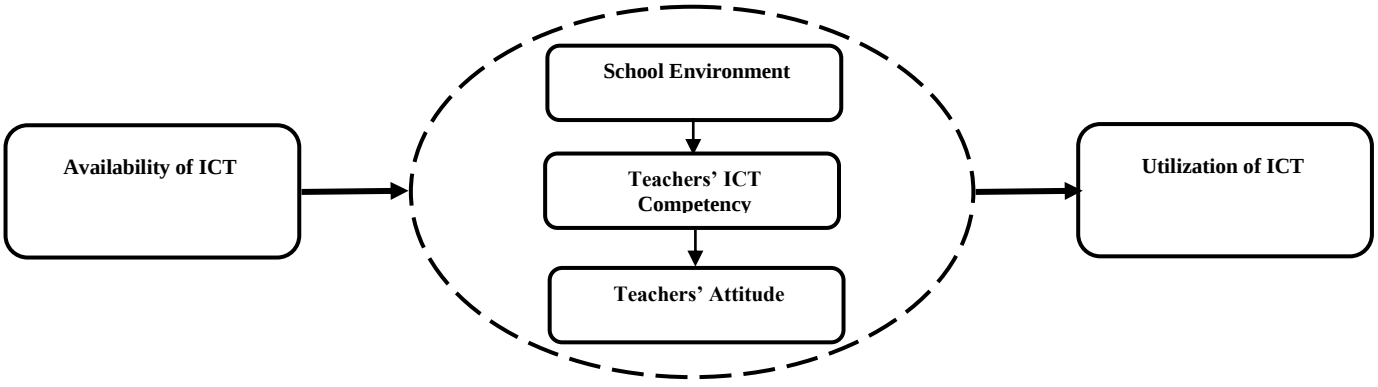
ii. determine the extent teachers use ICT materials in teaching in a primary school in the Federal Capital Territory, Abuja.

Research Questions

i. To what extent is the availability of ICT facilities in teaching and learning in primary schools in the Federal Capital Territory, Abuja?

ii. To what extent do teachers use ICT materials in teaching in a primary school in the Federal Capital Territory, Abuja?

Conceptual Framework



Source: Adapted from Shuaibu (2018)

Conceptual framework grows out of the theoretical framework and relates to the research problem. It is usually presented in graphical form with texts for amplifying the content of the graphic format. Hence, conceptual framework of this study is presented thus:

The conceptual framework showed that utilization of ICT facilities in teaching and learning process depends greatly on the level of availability of the facilities. Hence, availability serves as the independent variable while utilization serves as dependent. However, some factors intervene between availability and utilization. These include school environment, teachers' competency of ICT usage, and teachers' attitude as well as belied towards ICTs' potential in teaching and learning exercise.

II. EMPIRICAL REVIEW

Ajayi and Ekundayo (2009) examined the application of information and communications technology (ICT) in secondary schools in Ondo and Ekiti States. Findings revealed that ICT facilities were lacking in schools and teachers and students were to a little extent exposed to the use of ICT. Likewise, Imonivwerha (2010) examined the challenges of adopting information and Communication Technology (ICT) in the teaching of English language in secondary schools in Delta state. The findings of the study showed that ICT facilities are grossly inadequate, many teachers are illiterate of ICT and do not employ ICT in the teaching and learning process, and irregular power supply. Therefore, utilization of ICT facilities for teaching and learning of English language is poor. Also, Abdul-Salaam (2011) examined the availability and usability of information and communications technology among secondary school teachers in Oyo Metropolis. It was discovered that ICT facilities are not available for teaching and learning exercise, and incompetency of teachers to use ICT for teaching activities. Furthermore, Nwosu, Shaffe, and Nurzatul (2018) disclosed incompetency of teachers in the use of ICT in Aba north district secondary schools.

Looking at the lens from higher institution of learning, Hamilton-Ekeke and Mbachu (2015) disclosed non-availability of ICT facilities in Niger Delta University, Wilberforce Island, Bayelsa State which affected utilization. Similarly, Apagu and Bala (2015) revealed inadequacy as well as utilization of ICT facilities in teaching and learning vocational and technical education in Yobe State technical college. As factors responsible for this phenomenon, Shuaibu (2018) revealed government, school, teachers, and students related factors in relation to challenges confronting ICT use in junior secondary schools of the Federal Capital Territory, Abuja.

III. METHODOLOGY

The survey research design was adopted for the study. Survey research design is basically concerned with describing the characteristics of a particular individual or of a group. It is a systematic selection of valid sample from within a target population in which information elicited from the sample are used generally for the entire population (Babbie, 2010).

The entire teachers in 612 public primary schools in the Federal Capital Territory (FCT), Abuja constituted the population for the study. This is estimated as twenty-five thousand, seven hundred and ninety-one (25,791) (FCT Education Management Information System, 2022).

Krejcie and Morgan sample size technique which considered appropriate for this study was applied. Based on the calculation, four hundred and thirty (445) respondents served as the sample population of the study. The simple random sampling technique was adopted for the selection of the sample schools and respondents using the lottery technique.

The instrument of the study, a questionnaire, was titled: Availability and Utilization of ICT Assessment Scale (AU-ICT-AS). AU-ICT-AS was adapted from Shuaibu (2018). It is a modified 4-point Likert scale questionnaire with two sections – 1 and 2. The first section centered on demographic data of the respondents, while Section 2 focused on items of the constructs of the questionnaire drawn from the literature review. The instrument contained Thirty-three (33) questionnaire items which were drawn from both literature review and review of previous studies. With the use of Cronbach Alpha reliability method on data obtained on pilot test of the instrument, reliability index of 0.83 was obtained. Data collected were analyzed using the descriptive statistics – frequency counts, percentage and mean.

IV. DISCUSSION OF FINDINGS

This study find out that ICT facilities such as computers, internet service, interactive whiteboard, pedagogical ICT-support software, and audio-visual equipment, among others, are not adequately provided to teaching and learning in primary schools in the FCT, Abuja. This finding is consistent with the findings of Ajayi and Ekundayo (2009) that Nigerian secondary schools are lacking ICT facilities to the extent that teachers and students were to a little extent exposed to the use of ICT in teaching and learning process; and that of Imonivwerha (2010) which disclosed that inadequate information and communication technology facilities for teaching of English language in secondary schools in Delta state. Also, Abdul-Salaam (2011) which revealed that inadequate availability of information and communications technology in secondary schools in Oyo Metropolis reflects on its usability for instructional delivery. Apagu and Bala (2015) also disclosed insufficient ICT facilities in teaching and learning vocational and technical education in Yobe State technical college. In addition, Hamilton-Ekeke and Mbachu (2015) revealed a lack of adequate ICT facilities for teaching and learning exercise in Niger Delta University, Wilberforce Island, Bayelsa State, Nigeria.

Regarding utilization of ICT facilities for teaching and learning activities, it was discovered that extent of utilization of information and communication technology facilities for teaching and learning in primary schools in the FCT, Abuja is

low. This finding corroborates the findings of Imonivwerha (2010) that high rate of ICT illiteracy among teachers as one of the challenges of adopting information and Communication Technology (ICT) in the teaching of English language in secondary schools in Delta state; Apagu and Bala (2015) revealed a low level of literacy of teachers in ICT as one of the challenges of ICT utilization in teaching and learning vocational and technical education in Yobe State technical college; Shuaibu (2018) disclosed teacher-related factors such as inadequate knowledge of the content of curriculum are some of the challenges confronting utilization of educational ICT in junior secondary schools of the Federal Capital Territory (FCT), Abuja; and Nwosu, Shaffe, and Nurzatul (2018) that disclosed teachers' low level of ICT use in Aba north district secondary schools is as a result of lack of access to ICT and insufficient ICT competence among teachers.

V. CONCLUSION AND RECOMMENDATIONS

Government is not providing adequate ICT facilities to primary schools in the FCT, Abuja considering the growing population of pupils. ICT resources are not regularly used for teaching and learning exercises. Hence, the potentials of ICTs in teaching and learning are grossly not explored due to inadequacy in provision and factors related to teachers.

Based on the above discovery, it was recommended that government, the foremost stakeholder in education, should be more proactive and committed in the provision of curriculum resources, particularly ICT facilities to primary schools, for the realization of goal and objectives of National Policy on ICT. Teachers as indispensable pilot of teaching and learning process should be more committed to their profession through updating their knowledge in global ICT level for their products to be able to compete with counterparts are global level. This could be realized through regular training and re-training via workshops, conferences, and seminars on ICT skills in the teaching and learning process.

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