CHALLENGES OF ICT INTEGRATION IN PRIMARY AND SECONDARY SCHOOLS: A CASE STUDY OF SCHOOL ADMINISTRATORS IN AFRICA

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ABSTRACT

This paper investigated the challenges of ICT integration in public primary and secondary schools: A case study of school administrators in Africa. The progress of any nation depends on the ability of its citizens incorporating learning with Information communication technology facilities that make them to be skill oriented and intellectually sophisticated towards the development of their nation. No provisions were made for students to explore, develop critical thinking skills through personalized and collaborative learning in public primary and secondary schools. This is the reason why majority of students that studied in developing countries public primary and secondary schools are not computer literate. Other challenges of integration of ICT facilities in public primary and secondary schools in Nigeria are tech –phobia among analogue teachers, analogue teachers resistant to change, poor funding, insecurity, absence of electrified public primary and secondary schools among others. School administrators should ensure that areas where ICT facilities are to be sited in their schools are not exposed to rain or sun. School administrators should ensure that security men are provided in public primary and secondary schools. It is recommended on this study that adequate funding should be provided by the government to public primary and secondary schools. This would enable school administrators provide facilities needed for the steady management of public schools. It is also, recommended on this study that ICT facilities should be provided in public primary and secondary schools. This would enable students and teachers meet up with the needs of 21st century education system.

Keywords: Use of ICT in Public Prmary and Secondary Schools Myths or Reality, Integration of Information and Communication Technology in 21st Century Education System, Challenges of Integration of Information and Communication Technology in Public Primary and Secondary Schools in Nigeria.

1.0 INTRODUCTION

Changes from old to new technology are evolving and cutting across all dimensions of human endeavours. Human beings have never been static in their quest for the things that makes lives more endearing. Integration of ICT in all spheres of human endeavours is part of the social change. Social change deserves persuasion especially when people in the society accepts their use because of their efficacy or relevance in changing lives in a positive way. Vast array of social change have evolved. Some have impacted positively on human development. Among the social change mantras that have innovated humanity in their vagaries of endeavours, Information and communication technology have outshined all especially in this technological

age. Importance of Information and communication technology cannot be over emphasized, its profound influence have been observed in businesses, science, education, weather forecasts, film shooting, music, service industries, bureaucracy economy, politics, manufacturing organizations and in our various homes Meziobi, Akpaka & Ahuaza (2012).Information and communication technology has significantly improved teaching and learning suc as reading, writing, graphic making, browsing and storage of information Okolochukwuemeka & Ezechi (2012). In the same vein, Meziobi & Njoku (2013) identified that Information and communication technology have revolutionized the world including its incursion in teaching and learning.

1.1 Use of ICT in Public primary and Secondary Schools: Myth or Reality

Computer is synonymous with ICT Meziobi & Meziobi (2014) Ndioho (2000). Information and communication technology is technology is a technology which involves the collection, processing retrieval storage, and dissemination of information. According to Opera & Opara (2010). Information and Communication technology on the other hand, is defined as technology geared towards manipulation, transmission or receipt of digital data, retrieval and storage of data. Information and communication in education industry is the use of information and communication tools and resources in teaching and learning of different subjects that enables comprehensive understanding of the use and functions of ICT in a digital era (Odogwu & Mba2015). Importance of information and communication technology in teaching and learning cannot be treated with levity as far as teaching and learning remains imperative for human development. Information and communication technology is supportive to human activities that involves exploration and deep thinking thus, it enables humans to be meticulous in their deeds. It crave human indulgence to store, manipulate, communicate and manage ICT facilities on prescribed ideals (Charackupa, 2003). Date back from human history of civilization, no work on human civilization has endeared comprehensive benefits or good results like information and communication technology (ICT). Information and communication technology (ICT) are of immencr benefits to humanity their impacts are observed on schools where school administrators have considered their significance in teaching and learning in this 21st century. Its continued use is absolutely promising even in decades to come. Information and communication technology constitute very powerful and endearing tools that enrich teaching and learning through use of vast array of available teaching and learning software programmes namely: Computer assisted instruction/ learning (CAI / CAL). Others include: computer managed instruction / learning (CMI / CML), Video and Audio conferencing tools and resources (Ezeliora, 2001). Information and communication technology ICT has enable students of different categories to develop critical thinking and competence in technological literacy. Because of enormous benefits derived from the use of ICT in calculation, graphic design and word processing Odogwu & Mbah (2015) affirmed that teaching and learning in the 21st century have been greatly endearing by the rapid advances in formation and communication technology (ICT). ICT integration in teaching and learning has aided congenial, stimulating classroom thus, providing enabling environment for meaningful and sustainable students collaborative and personalized learning experiences. Information and communication technology has enabled students to develop constructive thinking skills, it has enabled students to change in positive way their cognitive limitations. In 21st century teaching and learning transactions, information and communication technology has helped students to subordinate illiteracy and acquire literacy. It has changed the old way students learns and

brought a new way, many ideas and skills about the use of technology in teaching and learning have evolved considerably in this new age.

1.2 Integration of information and Communication Technology in 21st century education system.

In consideration of the wide spread use of ICT in teaching and learning. It is very inspiring to ask how schools in developing countries in Africa has prepared especially Nigerian schools? The answer to this question is glaring, because, a cursory look in most of Nigerian secondary schools shows a slow pace of development in ICT (Yerima, 2002). The quality of teaching and learning in Nigerian schools must be in tandem with development and use of ICT in education. The Competency of teachers in physics, Biology, chemistry, mathematics, social studies among others are measured with the training teachers have acquired on the utilization of ICT facilities in teaching and learning. It is pertinent to note that, majority of teachers that teach mathematics are poor on use of ICT facilities in teaching and learning (OJaleye, 2002).

1.3 Challenges of ICT Integration in public primary and Secondary Schools in Nigeria as a developing Nation.

Teachers of this 21st century are resistant to embrace change. Techno phobia and lack of condescension to acquire the skills of ICT have caused majority of teachers to remain deficient on use of ICT in teaching and learning. This situation is seen among teachers of various subjects in developing countries of the world especially teachers of mathematics subjects Iji, (2003). In the same vein, (Salau, 2003) identifies that 95% of teachers that teach mathematics are incompetent on use of ICT. Salau identified further that because of lack of proficiency on use of ICT during teaching and learning, many teachers especially teachers of compulsory subjects like mathematics find it difficult to cope with the demands of this globalized computer age. Pressures mounted on teacher's use of ICT facilities in Nigeria will in the near future throw many teachers out of their jobs (Meziobi &Njoku 2013).

It is undoubtable that many public primary and secondary schools in rural and urban centers of many developing countries have no ICT tools and nternet facilities. These have caused majority of teachers to rely on the old method of teaching., chalk and talk method perhaps face to face method of teaching with black boards improvised on walls of classrooms are still in vogue. This is because, of dearth of ICT facilities in punlic primary and secondary schools. A good number of teschers srr analogue teachers that do not know how to operate or manipulatr ICT facilities. most ICT facilities requires didatic, hands on or experiential learning rather than human mere observation. Careful and intensive learning is imperative for their mastery and contnous use. As a result of this multifaceted nature of ICT facilities, knowledge of ICT facilities has been a herculean task to teachers that did not make use of ICT on teachers training, from the grass root (Iyamu, 2005).

It is of no doubt that some students in developing countries came from poor families. Considering the economic meltdown in developing countries especially in Nigeria, most family find it uneasy to provide ICT facilities for their children in public primary and secondary schools. This is the reason why, it is uneasy for students in some rural and urban secondary schools in Nigeria to compete favourably with students on ICT proficiency in developed countries of the world. This further entails that the use of ICT in this modern age is an exclusive

preserve of the rich families whom their children are schooling together with the children of poor families in developing countries of the world (Salau 2003).

In some Nigeria villages and urban centers, there are frequent power outage. This is why ICT provision and its steady use has been a mere pipe dream or a sheer name.

Using Nigeria for example, a lot of projects have challenged adequate provision of ICT facilitirs in primary and secondary schools, such as security, health and other ventures. In adequate funds are allocated to education in Nigeria. This has hampered the provision of ICT facilities and other teaching and learning facilities in Nigeria.

Insecurity is one of the canker warms bedeviling the provision of ICT facilities in many secondary schools in rural and urban villages. Many teaching and learning facilities have been stolen in public secondary schools. This is the reason why it will take a long time for ICT to be on its steady use in public secondary schools especially in Nigeria.

Some public primary and secondary schools are unfit for storing ICT facilities as some of the school walls have been wrecked down by erosion while some roofs are blown off by winds. Majority of primary and secondary schools are not feasible for teaching and learning let alone used for storing electronic and digital facilities.

Lack of government timely response to teachers demand on ICT provision has affected quality teaching and learning as students in rural villages find it uneasy to measure up with their mates from developed countries of the world during competitive examinations. It is pertinent to note that some teachers that are ICT proficient in public primary and secndary schools were able to acquire ICT skills on their personsl efforts. They are also able to acquire their own personal laptops, desk tops and pam tops through their personal efforts Lawal, Ahamadu & Dogara (2012).

Poor teacher's motivation on use of ICT have affected use of ICT resources in public primary and secondary schools. Because of this, teachers took ICT provision in public primary and secondary schools as government responsibility. They can only be active on it especially when they are motivated Ogunkunle (2005).

Negative attitude of teachers towards ICT use in public primary and secondary schools have seriously affected teaching and learning. Some teachers are not interested to acquire skills on ICT. To enhance effective use of information and communication facilities in public primary and secondary schools, teachers that are not ICT skill oriented should develop positive attitude towards mastery of ICT facilities and their continued use in public primary and secondary schools. This will go a long way to encourage integration of ICT in public primary and secondary schools (Woodrow1992) & Harris (2002).

It is saddening that heads of public primary and secondary schools have relented for organizing seminars and workshops on teacher's use of ICT in public primary and secondary schools. Lack of seminars, workshops or symposium on effective use of ICT in schools have demoralized some teachers from acquiring ICT skills as many are still teaching with texts books that have stayed for more than ten years. This misfits have caused some teachers to remain irrelevant on new teaching and learning, principles or conventions.

The issues of none incorporation of ICT facilities in developing countries public, private primary and secondary schools have led to poor teaching and learning among teachers and students. Rahaman (2002) identified that a good number of teachers and students in developing countries are behind the skills of ICT use, because they are still learning how to cope with the use of ICT during teaching and learning.

Effective public primary and secondary schools administration rests on the competency or administrative strategies of school administrators. Administration is the process of achieving the formal goals of the organization through people that are functionally directed for achievement of formal goals of organizations. Administration involves management of financial and non- financial resources, ideas and methods for the realization of goals of organization. Organization without administration is not a functional organization. Human beings that are professionally trained on school management or administration should be observed in schools planning, directing, coordinating, staffing, budgeting, evaluating and controlling the affairs of teaching and learning institutions. Akpakwu (2012) sees administration as a careful science of using human and non- human facilities for the achievement of the specific objectives of an organization. According to Anukam (2006) administration is the process of getting things done through the use of human beings that are goal driven coupled with use of material resources for the achievement of the goals of the organization. Management of organizations is similitude to school management. In the same vein, Ayanniyi (1995) defined school administration as the process of mapping out in broad outline the objectives of education and use of methods and ideas for achieving those objectives. Educational administration and management are twin responsibilities in that are imperative in education industries because, resources that are limited need to be harnessed to the best optimal means. Without educational administration and management the lean resources and facilities provided to education sector will not be planned, organized, coordinated and controlled.

Without effective and efficient school administration, school facilities such as buildings, generators, records, libraries, laboratory equipment's, ICT facilities will not be recommended to be provided in schools, their supervision control and control of students that make use of them on daily basis will be concluded in hitchies

School administration is achievable by school heads administrative strategies. School heads cannot achieve 100% administration without effective administrative strategies geared towards achieving the essential goals of schools. School heads administrative strategies includes all the enabling strategies put in place to foster morale, provision of facilities and commitment of students and teachers towards achieving school goals.

Principal's administrative strategies are therefore taken to reflect on environmental friendliness, teachers and students welfare, physical facilities provision and maintenance. Amakiri (2010) encapsulated that quality education is to a large extent depended on quality physical learning environment provision, teaching and learning facilities provision such as laboratories, workshops, libraries and teachers motivation strategies initiated by school heads. An inspiring teaching and learning institution is the type where there are adequate teaching and learning facilities that motivates or arouse student's interest to learn. It is very excruciating that majority of public schools in developing countries of the world have no ICT facilities for teaching and learning. Students depends on their teachers as the repositories of knowledge.

What is prevalent in primary and public schools especially in Nigerian schools are improvised black boards on classroom walls and chalks that are usually made use of by teachers during teaching and learning. In this 21st century, many public primary and scondary schools in Nigeria for example are not electrified and there are no digital learning resources. In developed countries of the world, lap tops, pam tops and android phones serves as papers and pens which students writes with on daily basis. It is very unfortunate that students of developing countries schools carry note books and text books to school and come back with them on daily basis. This is very encompassing for Nigerian students. Installation of internet facilities and ICT facilities in public primary and secondary schools enables students in developing countries especially, Nigeria to measure up or align themselves with those learnings or skills achievable with ICT facilities. Liberalizing the use of ICT facilities in public primary and secondary schools will ensure that providing ICT facilities for teaching and learning carves niche's on intellectual and skill development of learners in developing nations. According to Akubue (2002) school heads administrative strategies includes the process of modelling staff behavior through responsive to duties, effective rewards management, provision of facilities, supervision, career planning and teachers counselling.

2.0 CONCEPTUAL FRAMEWORK

2.1 Concept of Information and communication technology

Student's active learning requires the development of positive teacher's attitude towards the use of information and communication technology. There is now a paradigm shift from the old classroom to the modern classroom. The world is now a global village. The old chalk boards are no more in vogue. Learning is transmitted to students with the use of ICT facilities perhaps on internet friendly zones. Nbina (2011) opined that information computers have been very significant in improving student's scientific knowledge. Nbina, further identified that the importance of information and communication technology cannot be over emphasized based on the frequency with which information and communication technology gives learners and teachers access to vagaries of textual materials and graphic information. Other benefits on use of ICT favilities include: for student's personal consumption, presentation of assignments seminars and projects. In the same vein, teachers use information and communication technology to acquaint themselves on new methods of teaching, construction of lesson plans and presentation of learning contents in the classroom. Introduction of information and communication technology in teaching and learning have encouraged students to teach themselves.

In some globalized societies, teachers stood as guides or facilitators of teaching and learning to students as against the old method of teaching where teachers are meant to stay long hours in the classroom talking and chalking on black boards on classroom walls. Information and communication technology integration in teaching and learning will be a landmark achievement by the government where different enabling ICT learning environments are considered. The beam of Education should rrsonate from rural areas where majority of students learns without ICT facilities. Rural villages should be considered enormously as a point of contact where future academic giants could be generated. In as much as local communities are to be considered valuable information and communication technology facilities should be

adequately distributed to these schools to strengthen effective school management and enrichment iof students in all subjects Nleya (2006).

3.0 THEORETICAL FRAMEWORK

3.1 Theory of cognitive development was glued for this study.

This theory was put forward by Jean Piaget in the year (1976). Jean Piaget theory of cognitive development suggests that instructional materials should be adapted to the learner's developmental level, and that teachers should provide learning experiences that stimulates students thinking. Piaget theory encourages learning through peer discussions, play based learning, hands on exploration and interaction in the world with modern teaching and learning tools. Piaget theory identifies student intelligent development through hands on experiences. Piaget identified further that accommodation, assimilation of cognitive processes could not be accelerated only by instruction giving by teachers. Piaget hinted that avenues should be created where students are provided with instructional materials that arouses student's interest on hands on learning experiences. Piaget also emphasized that learning contents and instructional materials should be used according to student's capacities or levels of development. The relevance of this theory to this present study is explained below:

In accordance with the demands of this new age, modern instructional materials such as desk tops, lap tops, pam tops, android phone, visual aids among others, should be used for teaching and learning. This method of teaching and learning encourages students to view and understand concepts ideas on their own perspectives. A great insight on hands on practice, personalized and collaborative learning should be upheld for learner's cognitive development.

4.0 CONCLUSION

The progress of any nation depends on the ability or capability of its citizens that are skill oriented and intellectuality sophisticated to scratch balance towards the development of that nation. The acquisition of information and communication technology skills, intellectuality and moral values should be the road map to a nation building especially the developing nations of the world in which Nigeria is among. Installation of information and communication technology tools and resources should the utmost priority of state and federal ministries of education. Nigerian educational system should endeavor to provide information and communication technology facilities in both urban and rural areas where public primary and secondary schools are established. It is not only provision of ICT facilities in public primary and secondary schools the matter.

School administrators should ensure that areas where ICT facilities are to be sited in their schools are planned to avoid them being exposed to high handedness of the sun, rain and dews. Schools administrators should ensure that adequate securities are mounted on daily basis. This will ensure that those facilities are not stolen by thieves. Schools administrators should provide adequate supervision, maintenance, coordination and budgeting for other needs required for continued maintenance of ICT facilities in public primary and secondary schools from the hands of the leaders of government through the state ministries of education in Nigeria. Workshop, seminars and conferences that are focused on use of ICT for teaching and learning and maintenance should be organized. Also, schools administrators should ensure that there is

internet connection in public schools; this will ensure internet connectivity or network in public primary and secondary schools. Students will as well, acquire adequate skills on ICT proficiency and compete favourably with their mates in other public, private primary and secondary schools in developing and developed nations of the world.

5.0 RECOMMENDATIONS

1. Considering the paucity of some families in developing countries of the world, government should ensure that ICT facilities are provided in both rural villages and urban centers public primary and secondary schools in developing countries of the world especially, in Nigeria.
2. Teachers should embrace the use of ICT during teaching and learning. This would enable teachers to measure up to the demands of this digital age.
3. Heads of public primary, secondary schools should recommend for the provision of internet facilities in public schools. This would enable students in developing countries to measure up with their mates in digital era.

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