Challenges of Utilizing Information and Communication Technology (ICT) for Quality Education in Secondary Schools in Delta State, Nigeria

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ABSTRACT

This study focuses on the challenges militating against the effective utilization of Information and Communication Technology (ICT) for quality education in Uvwie local government area of Delta State, Nigeria. The survey research approach was employed to sample the opinions of 200 teachers across secondary schools in the area. The study observes that secondary schools teachers in Uvwie L.G.A have a very good knowledge of the prospects of utilizing ICT in education for teaching and learning; while the availability of ICT tools for teaching and learning in Uvwie L.G.A is very limited and in most cases are not available for use. Although, the secondary schools' teachers in Uvwie LGA have a positive attitude towards ICT yet they are interested in seeking the needed knowledge for effective utilization of ICT tools. The major barrier to effective utilization of ICT in secondary schools is the high cost and unavailability of an ICT enabled environment and classrooms. The study concludes that ICT has a very great prospect for the improvement of education in Nigeria and it is a means of developing capacity for a self-discovery modeled learning and instruction, while recommending a change in attitude towards policy implementation, teachers and learners are of paramount importance for the attainment of an ICT based learning system.
Keywords: ICT tools, quality education, teaching and learning

INTRODUCTION

Information and communication are an integral part of human society. Communication on a universal scale becomes possible through the use of symbols, signs and sounds. More recent technological innovations increased further the reach and speed of communication, culminating for now, in digital technology (Olubamise and Awe, 2007). The advancement in technology has created so many ICT tools that are necessary and useful in the development process. These new technologies, according to Chris Nicol Association for Progressive Communications (2007) have become central to contemporary societies. They have classified these modern technologies (Information and Communication Technology) into three. These are (a) Information Technology, (b) Telecommunication and (c) Networking. Information technology uses computers, which have become indispensable in modern societies to process data and save time. The uses of computers are so pervasive to modern development in commerce, education and governance amongst others.

Telecommunication technologies include telephone - mobile, fixed (with fax) and broadcasting of radio and television through satellites. Networking technologies of which the best known is the internet, but which has extended to mobile phone technology, satellite communication, and other forms of communication that are still in their infancy.

These all have come to dominate modern society, thus defining what is now called the information age. Thus, the role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy (Rosen and Michelle, 1995 and Thierer, 2000). Most communication experts in the field of education agree that when properly used, information and communication technology hold great promise to improve teaching and learning in addition to shaping work force opportunities. Poole (1996) has indicated that computer illiteracy is now regarded as the new illiteracy. This has actually gingered a new and strong desire to equip schools with computer facilities and qualified personnel necessary to produce technologically proficient and efficient students in developed countries of the world. There is no doubt that computer can aid the instructional process and facilitate students' learning, many studies have found positive effects associated with technology aided instruction (Burnett, 1994 and Fitzgerald and Warner, 1996).

Agyeman (2007) posits that the Federal Republic of Nigeria has no specific policy for ICT in education. Achimugu, Oluwagbemi and Oluwaranti (2010) also confirm that although as the mission, general objectives and strategies of the national IT policy recognize the importance of ICT in education, the document has no sectored (vertical) application to education.

Even, the integration of Information and Communication Technologies (ICTs) in distance education programmes in Africa has not been encouraging. Notwithstanding the fact that computer entered into Nigeria's education system in the late 1970's and early 1980's, no concrete policy was evolved for its entry into the nation's education system until the evolution of the National Policy on Computer Education in 1988 (Federal Republic of Nigeria, 1988). This document contains information on the application of computer at various levels of the country's education, and with issues related to basic objectives, hardware and software requirements. The document also comments on teachers' training, specifically, for the secondary school level.

In recognition of the prominent role of ICTs in the modern world, the Federal Government of Nigeria in the National Policy on Education (Federal Republic of Nigeria, 2004), further states that government would provide basic infrastructure and training at the primary school, at the junior secondary school, computer education would be a pre-vocational elective, and a vocational elective at the senior secondary school. Adomi and Kpagban (2010) note that 2004 was not the first Nigerian government attempt to introduce computer education in schools. In 1988, the Nigerian government enacted a policy on computer education to establish pilot schools and diffuse computer education innovation first to all secondary schools, and then to primary schools (Adomi and Kpagban, 2010). Unfortunately, the project did not really take off beyond the distribution and installation of personal computers (Okebukola, 1997; Adomi and Kpagban, 2010). In a rapidly changing

world of global market competition, automation, and increasing democratization, basic education is necessary for an individual to have the capacity and capability to access and apply information. Such ability and capability must find bearing in information and communication technology in the global village. The Economic Commission for Africa has indicated that the ability to access and effectively utilize information is no longer a luxury but a necessity for development. Unfortunately, many developing countries such as Nigeria and other countries in Africa are already on the wrong side of the digital divide in the educational use of ICT. It is against this backdrop therefore, that this study tends to evaluate the challenges militating against the effective utilization of ICT for quality education in Uvwie local government area of Delta State, Nigeria. The focus of the study is to assess the challenges of utilizing ICT for Quality Education in Uvwie Local Government Area. Specifically, the study seeks to determine

1. The quality of ICT tools available for use in secondary schools in Uvwie Local Government Area.
2. Secondary school teachers' background and attitude towards the use of ICT in teaching and learning process in Uvwie Local Government Area.
3. The barriers to the effective utilization of ICT for teaching and learning in secondary schools in Uvwie Local Government Area.

The following questions were formulated to guide the study.

1. What are the available ICT tools in teaching and learning in secondary schools in Uvwie local government area?
2. Do teachers in Uvwie local government area have a good background and attitude towards the use of ICT in the learning and teaching process?
3. Is there any barrier to the effective utilization of ICT in the teaching and learning process in Uvwie Local Government Area?

PARTICIPANTS AND PROCEDURE

The study adopts the descriptive survey research design. This tends to collect detailed information that describe the nature of existing conditions. The population of the study comprises all the secondary school teachers under the services of the Post Primary Education Board in Uvwie Local Government Area of Delta State which is estimated at 904 teachers from 20 Secondary Schools. The sample was made of 200 teachers randomly drawn from the 20 Secondary Schools in Uvwie Local Government Area. Face and content validity of the instrument were established by lecturers who are communication experts in the field of Educational Research in the Institute of Education, Delta State University, Abraka . The questionnaire was validated, useful corrections and suggestions were offered which led to some modifications, and a final draft of the structured questionnaire was produced. The reliability of instrument was established when it was administered to 20 teachers in different locations of the study. Test-retest reliability method was adopted. The instrument has a reliability coefficient of .85. The reliability coefficient was considered high enough and suitable for use for this study. Data were collected with the questionnaire and the analysis done with simple percentage as the statistical tool.

RESULTS AND DISCUSSION

It is very clear that most schools lack most of the ICT tools that will enhance the integration of ICT into teaching and learning as they all declined the presence of Internet, Video equipment, and data projector (table 1). However, only 44% of respondents admitted the presence of computers in their school. While 78% of the respondents admitted to have e-mail addresses, 80% agreed to have a scanner. Table 2 shows that 82% of the respondents agree to seeking out new ideas about ICT. Also, 56% of respondents declined their inadequacy of using ICT, however, only 38% of the respondents agreed to using ICT based on the recommendations of another teacher, 60% of these teachers agreed to encouraging their students to utilize every possible opportunity of utilizing ICT while agreeing that ICT is an enhancement to the classroom experience. From the data generated on table 3, 100% of the respondents agree to the fact that shortage of an ICT enabled classroom hinders the integration of ICT to teaching, while maintaining the fact that little or no access to ICT tools prevents its utilization. 100% of the respondents however emphatically declined the claims that the views of the society and school about ICT discourages their utilization. While 75% of the respondents shifted the barrier to timing needed for learning the rudiments of ICT utilization against the 25% of the respondents that disagreed to this claim.

The present study focuses on the challenges militating against the effective utilization of ICT for quality education in Uvwie local government area of Delta State Nigeria. The findings therefore, make its generalizations based on the responses of the teachers in the area. The first research question, sought to evaluate the quantitative availability of ICT tools in the schools for use in the teaching and learning process. From the data generated in table 1 above, it is very clear that most schools lack most of the ICT tools that will enhance the integration of ICT into teaching and learning as they all declined the presence of Internet, Video equipment, and data projector. However, only 44% of respondents admitted the presence of computers in their school. While 78% of the respondents admitted to have e-mail addresses, 80% agreed to have a scanner. From this therefore, it is pertinent to note therefore, that ICT tools are on a very short supply for its full integration into the teaching/learning process.

A look at the second research question that sought to know the teachers' attitude towards ICT discovered from table 2 above, that 82% of the respondents agree to seeking out new ideas about ICT. Also, 56% of respondents declined their inadequacy of using ICT, however, only 38% of the respondents agreed to using ICT based on the recommendations of other teachers, 60% of these teachers agreed to encouraging their students to utilize every possible opportunity of utilizing ICT while agreeing that ICT is an enhancement to the classroom experience. From the findings therefore, it is important to note that teachers have developed a positive attitude towards the utilization of ICT in education which is a prerequisite to the successful implementation of ICT policies in education as attitude has been identified as a major factor to the effective implementation and acceptance of any new policy. This view is widely supported by Brosnan (2001) who opines that Teachers' attitude plays an important role in the teaching-learning process that

utilizes computers and internet connections. He further assertes that although teachers' attitude towards use of these technologies is vital, many observations as in this study reveal that teachers do not have clarity about how far technology can be beneficial for the facilitation and enhancement of learning. Of course, some teachers may have positive attitudes to the technology, but refrain from using it in teaching due to low self-efficacy, tendency to consider themselves not qualified to teach with technology.

In another development, the third research question sought to identify the major barriers that prevent the effective integration of ICT into the teaching/learning process. From our study therefore, it shows that 100% the respondents agrees to the fact that shortage of an ICT enabled classroom hinders the integration of ICT to teaching, while maintaining the fact that little or no access to ICT tools prevents its utilization. 100% of the respondents however emphatically declined the claims that the views of the society and school about ICT discourages their utilization. While 75% of the respondents shifted the barrier to timing needed for learning the basic rudiments of ICT utilization against the 25% of the respondents that disagreed to this claim. These observations are in line with the claims of (BECTA, 2004) which identified the high cost of the technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power as major barriers for the utilization of ICT in education

Table 1: ICT Tools Availability in Schools

ICT Tool	*Yes*	*No*
Computers	88(44%)	112(56%)
E-mail	156(78%)	44(22%)
Internet	0(0%)	200(100%)
Digital camera	16(8%)	182(92%)
Scanner	160(80%)	40(20%)
Video equipment	0(0%)	200(100%)
Data projector	0(0%)	200(100%)

Source: Survey, 2012

Table 2: Teachers Attitude to ICT

Question	*Agreed*	*Disagreed*
I seek out ideas about ICT always	166(82%)	34(17%)
I feel inadequate in using ICT	88(44%)	112(56%)
I always try out some learning activities with ICT	78(39%)	122(61%)
I use ICT in enhancement of teaching and learning based on the recommendation of another teacher	76(38%)	124(62%)
I depend on other teachers to use ICT	98(49%)	102(51%)
I encourage my pupils to use ICT	120(60%)	80(40%)
ICT is an enhancement to my classroom	111(55.5%)	89(45.5%)

Source: Survey, 2012

Table 3: Barriers to Teachers Utilization of ICT
Question

	Agreed	*Disagreed*
Shortage of class time hinders me to use ICT	200(100%)	0(0%)
Little access to ICT prevents me from using ICT	200(100%)	0(0%)
Few ICT technical supports at schools discourage me from using ICT in classroom	200(0%)	0(0%)
Society views about ICT hinder me from using ICT	0(0%)	200(0%)
Colleagues' negative views about ICT hinder me from using ICT in the classroom	0(0%)	200(100%)
School views about ICT discourage me from using ICT	0(0%)	200(100%)
Time needed to learn using ICT prevents me from using ICT	150(75%)	50(25%)
Requirements of qualifications discourage me from using ICT	160(80%)	40(20%)

Source: Survey, 2012

CONCLUSION AND RECOMMENDATIONS

ICT has very great prospects for the improvement of education in Nigeria. It is a means of developing capacity for a self-discovery modeled learning and instruction. It is thus a means of making the Job of the teacher easier. However, to explore these great potentials, a change in attitude of policy implementers, teachers and learners is of paramount importance as provision of an enabling environment is a sure way of making ICT thrive. Based on the conclusion made above, the following recommendations are made.

1. There should be training and retraining programmes organized for teachers so as to acquaint them with up to date development relative to the utilization of ICT tools.
2. There should be massive infrastructure development and update of the school with ICT tools so as to make its assimilation easy.
3. There should be a change in attitude of teachers as to the utilization of ICT resources.
4. Students should learn to embrace the trend of change in the learning system.
5. This study is limited to schools within Uvwie LGA, it is therefore recommended that an extended and more elaborate study be carried out to cover all senatorial zones of Delta State.

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