



## INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN NIGERIA EDUCATIONAL MANAGEMENT PROGRAMM AS A PANACEA FOR QUALITY AND EFFICIENCY IN INSTRUCTIONAL DELIVERY

Rev. Dr. Aloysius Alo Orogwu, Odo, Michael Eze. Ph.D & Rejoice Kefas Sule  
aloyusiorogwu8@gmail.com. (08035768844)

<sup>1&2</sup>Department of Educational Management, Alex-Ekwueme Federal University, Ndufu-Alike

<sup>3</sup>Department of Early Childhood Care Education, College of Education Zing, Taraba State

### Abstract

It is noteworthy, that what is wrong with education cannot be fixed with technology and it is worthy to note that modern life in every sphere of life is dominated by technology itself. There is universal recognition of the need to use information and communication technology (ICT) in educational administration as we enter the era of globalization where the free flow of Information via satellite and the internet hold sway in global information. This paper presents an attempt to examine the integration of ICT in Nigeria Educational Administration programme as an indispensable part of contemporary world. It examines preparation for inculcating the needed ICT skills and knowledge in the serving and the pre-service educational administrators in Nigerian institutions with the aim of preparing the students for the future through the use of technology. It equally explores the flaws, prospects, and types of programmes in educational administration programmes for ICT integration.

### Introduction

Information and communication technology (ICT) has become an indispensable part of contemporary world and the use of ICT has revolutionized and altered the economic, social, educational and environmental conditions of human race the world over. Equally the world has witnessed great changes which occurs as a result of development of all the forces that create changes in the way of imparting knowledge in a more rein formed ways especially in the area of educational technology. Although ICT is becoming a house hold term, it has myriads of definitions which vary with researchers and educators. Suffice it to confine the definition of information technology to the one provided in the National Policy for Information Technology (FRN, 2001). According to this Policy, Information technology is defined as computers, ancillary equipment, software and firmware (hardware) and similar procedures, services (including support services) and other related resources for the processing and distribution of data. The same document sees ICT as —any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission or reception of data or data or

information (FRN 2001, P,9). Thus, they can be regarded as the tools used for accessing, processing, gathering, manipulating and presentation of communication information. These includes software, hardware, and even any other connectivity materials (Anderson and Baskin, 2002).

According to Brown, Lweis, and Harderod, (1977) in Ogunmilade (1984), Educational Technology can be defined as a:

Systematic way for designing , carrying out and evaluating the total process of teaching in terms of specific objectives based on research in human learning and communication, and employing a combination of human, and non-human resources to bring about more effective instruction in a given environment (pg.7).

The use of technology in solving problems extends into all spheres, educational administration inclusive. Technology has proved effective in teaching and learning, by making the delivery system simplified and by making learning meaningful and permanent.

Information and communication technology is very essential to every social system, especially in educational administration and management. It has the potentials of being used to meet the learning needs of



individual students, promotes equality of educational opportunities; offering high quality learning materials, increase self-efficacy and independence of learning among students and administrators, and improve teachers' professional development. Furthermore, ICT offers great potentials for revolutionizing school administration. (Mosely & Higgins, 1999; Kirschner & Slinger, 2003; Williams, 2003) and the Miken Exchange on Educational Technologies (1988) noted in her synthesis of research findings that ICT under the right condition has the following potentials in education:

1. It has the potential to accelerate, enrich and deepen basic skills in reading, writing, administration, mathematics, and the sciences.
2. It motivates and engages students in learning as they are encouraged to be more independent and responsible for their own learning.
3. It helps to relate academics to the practices of today's work as the influence of ICT is pervasive in every field.
4. It is relevant in increasing the economic viability of tomorrow's workforce. As students are prepared to be fluent in thinking with and using technology in ensuring efficiency and effectiveness in their work places, thereby increasing productivity.
5. It strengthens administration as it provides powerful tool to administrative repertories, thereby enabling those in administration to meet the demands and needs of those been administered.
6. Information and communication technologies allows for networking with other administrators across the globe and thus administrators are more connected with each other to exchange ideas, share resources and improve administrative practices.
7. It also contributes to changes in school administration as it can be a catalyst for administrators to a rethinking mind in order to bring into administration current practices and this inspires them to fundamental improvements in the system.
8. ICT provides opportunities for connecting administrative offices to the outside world, as administration is expected to expand beyond the office, thus relevant real life contact can be made.
9. Administrators, teachers and students can access information and resources easily, and they can communicate with experts and peers and make useful contributions to knowledge through e-learning and e-mails.

### **ICT applications in education administration and management**

In the recent years, ICT applications have been in use in education administration and management to support sustainable development. A software based tools and applications are a piece of computer program which execute useful tasks for education, such as word processing, desktop publishing, running a database, creating a presentation or e-mail program (Higgins & Packard. 2004). There are three main administration groups that are applying ICT in their various activities and actions in their daily administration and management at schools including: Administration head, Administration teachers and Administrative staff.

#### **Administration head**

According to Afshari et al (2012) as an administration head, school principals should have basic skills of using ICT in school daily administrative and management job. Principals function as a role model when computer technology is applied to administrative and managerial task. As an instructional leader, principals facilitate teachers integration of computers in teaching and learning (Singh & Muniandi. 2012). As transformational leaders they encourage creativity, open-mindedness and facilitate conditions and events that create a positive environment for technology adoption (Afshari et al., 2012).

Administrators usually apply PowerPoint presentation to give an instruction and giving inhouse training in a more interesting way. teachers have a more favorable attitude toward the instruction in this way (Chen, 2012). Mwalongo (2011) has found that administrator use ICT applications, to prepare school announcements, reports, letters for meeting with parents, student registration, and teachers and staff employment. Administrator use ICT application in decision making process, store information as well as online applications (Selwood, 2004 ).

Webb (2011) noted that instructional leaders directly and indirectly determine the success or failure of teacher competencies in instructional



technology. These leaders are also instrumental in integrating technology into the classroom curriculum through the teachers that are employed. Administrators play major role in providing successful learning environments and they should make it possible for their teachers to adopt technology to make a difference (Afzaal, 2012).

#### **Administration teachers:**

Administration teachers are the teachers who besides their teaching activities also have administration responsibilities. The administration teachers on the front line are the directors and chiefs of all the offices and departments (Lin et al.,

#### **Administration staff:**

ICT applications also can be used by administrative staff for doing their daily responsibilities faster and more accurate. Administrative staff uses different type of tools to handle financial work, maintain communication, and keep records, process documents and to collect data. By using ICT applications they can handle these responsibilities more effective and efficient. Besides, using ICT applications would help them in recording school financial documents such as balance sheet, pay slip, audit reports etc (Kawade. 2012; Kazi. 2012).

#### **ICT application tools in education administration and management:**

There are lots of ICT application tools that have been vastly in use in education administration and management. Available ICT applications for education administrative purposes are internet, websites, software and hardware's such as printers, scanners, photocopy machines, and computers (Kazi, 2012; Kawade, 2012). The detail information on ICT tools that been widely used in education administration and management are as follow:

#### **Internet —based and web-based tools:**

In the last two decades, the Internet and ICT application tools have been expanded into the field of education all over the world. Moreover, internet — based tools also have created wide opportunities for school management to leverage their resources. Internet is the most dominant enabler toward better, Faster and cheaper approach in operating administration and management daily tasks such as information processing, information transferring, information storing and information

retrieving (Susmita. 2007). Thus, schools administrators ought to pay more attention to give knowledge and information access on the Internet —based educational applications and tools to all academic and non-academic staff.

#### **Hardware applications:**

Each year computers and other Information Technology and Communication hardware evolve. New machines and new equipment create new opportunities especially in education administration to make management process easier, faster, and cheaper. In this context, we can see there are some common ICT application tools that have equipped schools administration and management such as computers, TVs, radio, digital cameras, players, Laptops, multimedia projector, etc (Kawadc, 2012; Mwalongo. 2011; Richardson, 2007). Computers were used to store various documents of the administration. teachers, pupils and other staffs. Furthermore, interactive whiteboard, smart board and multimedia projectors are widely used by administrator for handling meetings, in-house training for teachers and staff, video conferencing and presentation purposes (Mwalongo. 2011; Higgins. 2004; Ashok, 2007).

#### **Soft ware applications**

School administration and management tend to use various software applications in their administration job purposes. The most frequently used applications by school administration and management were Office tools such as Microsoft Office (Word, Excel, and PowerPoint). and tally (Mwalongo. 2011; Ashok, 2007; Richardson, 2007; Kawadc, 2012), As Higgins (2007) noted, administrators are familiar with range of software that handles information, particularly spread sheets and databases. Databases potentially offer much more efficient and effective ways to manage information that most schools currently use.

#### **Benefits of ICT application in an educational administration and management Effectiveness.**

Effectiveness can be said to be the degree to which an organization desired goals are correctly achieved bearing in mind the demands from both internal and external environments (Lin et al., 2011). Administrative effectiveness refers to the extent to which goals and objectives of education are achieved at a particular level of education. Good financial



management is an essential ingredient of ICT application's effectiveness.

### **Funding**

This refers to the level to which schools are provided with money as required for the running of its affairs. In a study carried out in Owerri Educational zone of Imo state, Onu, Ahukanna, and Oruwari found out that funding measures were grossly inadequate, not adequately utilized. Therefore, there is a need for supporting financial operations of ICT applications by administration and management in educational organizations.

### **Data storage**

Data management plays an effective part in school leadership. It is important that the school maintains accurate with updated information on all levels and aspects. On this regard, ICT application helps a lot to keep the records of all levels and aspects of school including students, teachers, staff details of meetings' minutes. School publicity, curriculum development, materials and entire management information.

Nevertheless, document storage in computers saves a lot of space as physical files are replaced with electronic files. The saved space can be used for other purposes (Mwalongo, 2011). At the same time, use of ICT application in schools can be effective for students. For example using Microsoft Office such as PowerPoint presentation gives benefit to students by making the learning materials more attractive and proactive

### **Inter/Intra connectivity**

Moreover, by using ICT application, transaction between schools and educational departments will be more direct and efficient, that alleviating the manual collection and checking of necessary data and minimizing the duplication of data on school teachers and students (Kawade, 2012).

### **Time saving**

In addition, ICT applications also save time and man power, make students active, simplify teacher's works, reduce office cost, and increase reusability (Kawade, 2012; Mwalongo, 2011). Overall ICT applications increase quality of teaching significantly and at the same time it reduces the schools' workload (Selwood, 2004; Kawade, 2012).

### **Challenges in school management and administration:**

Today's school managers and administrators face unique challenges never encountered or even imagined by their predecessors. Preparing students to thrive in a global, technologically advanced society where they must use digital tools that evolve at a blistering pace to succeed at careers that did not even exist a decade ago is a daunting task.

Information processing skills have become a survival skill nearly ubiquitous access to mountains of Web-based information may expose learners to more information in just one day than those of previous generations would have been able to access in a lifetime. In order to prepare students for their future, teachers must have the support and leadership of school administrators who understand 21st century skills.

Despite the enormous roles of ICT in school administration and management, there are glaring challenges and obstacles militating against its effective use for school management. Here, this paper tries to highlight the challenges facing the use of ICT in school management in this 21st century and consequently recommend ways forward. The challenges are:

#### **Infrastructural deficiencies:**

A very common formidable challenge that impedes the use of ICT is infrastructural deficiencies. ICT gadgets naturally have composite demands in the sense that other infrastructures such as furniture, electricity (power) and cool weather condition must be provided to provide energy, and comfortable environment to whatever ICT gadget you are using within your school. Consequently, to keep high-tech equipment such as computer functioning properly, especially under extreme weather condition as obtained in some developing nation there must be adequate provision for power and backup. So, in places where the schools have no access to electricity (power) or its alternative, it is virtually difficult for them to take advantage benefiting from the use of ICT gadget such as computers, radios, television, videos recorders. Therefore, lack of electricity and other alternative sources of power supply in schools affect the use of ICT in school administration and management.

#### **Lack of maintenance culture:**

Consequent to continuous usage, ICT gadgets wear down over time and as a result needs to be maintained,



repaired and restored. Therefore when there is no provision for routine maintenance of ICT gadgets, it leads to a total breakdown of the equipment thereby undermining their efficient and effective use in school administration and management.

#### **Limited/no access to the internet:**

Another challenge in school management using ICT is limited/no access to the internet. The bedrock of every School Management System (SMS) using ICT is the internet through which activities are carried out on the cloud, and an absence of this internet connection means that information/data being manipulated in any school with no internet access remain local and doesn't go beyond that school and hence cannot be accessed by the targeted audience (variety of users).

#### **Non-availability of skilled personnel:**

A situation where there are provisions of adequate ICT badges with good suitable supply but lacked the necessary human skill and knowledge to fully manage them is still a strong challenge to the use of ICT in school management. Schools need to have well trained and skilled personnel who are versatile in the area of ICT to handle the installation of ICT gadgets. In many schools in some developing countries, those charged with the use and management of the computer do not or at worst cases do not receive any training at all and this poses great challenge to the effective use of ICT in school management/administration

#### **Solution**

To be effective leaders for the 21st century, administrators must ensure that instructional needs, the expertise of teachers, and the ultimate needs of students are considered. For effective and efficient use of ICT in school management and administration, the following must be put in place.

- a. Government and non- governmental organizations at all level of governance should make available to school ICT gadget at subsidized rates or even for free.
- b. School managers should partner or collaborate with nongovernmental organizations (NGOs) and the government to make available to schools adequate power supply and other infrastructures such as furniture, goods atmosphere needed for a good ICT integration in school administration. Access to fast internet connections should be made available in

schools to give room for seamless communication among staff, students, alumni and parent at any moment. This internet access should be made free for school managers and students alike.

- c. School leaders/managers should develop ICT skill in order to be effective in their new role as a technology usage leader. While these school leaders develop ICT skill; Government, school managers and those responsible for employment and recruitment of staff should make sure that those deployed to work in ICT department of schools are people who have acquired the adequate training in application, software, operating system, network administration and repair of computer facilities.

- d. Software developers and publishers should come up with development of software and multimedia application that will have universal relevance and application which will not be specific and particular to any culture and religion while the government on their own should try to make these software available to schools that might need them.

- e. School leaders and administrator should enforce maintenance culture in their school and make sure that their ICT gadgets are properly taken care of and maintained at regular interval(routinely) and ensure that those to carry out these exercise are those that have the requisite and adequate skill to do so under proper supervision.

- f. Another way out in surmounting the challenges in the use of ICT in school management is to ensure that adequate security measures and policies are enforced consequent punitive measures taken against various offenders of such policies. In addition, the ICT department of ministry of education should conduct ICT training programmes, seminars, workshops and design various forums focusing on professional development of administrators in integrating ICT across school administrations to become ICT compliant.

#### **Conclusion**

This article attempts to answer questions on the roles of ICTs in education. Information communication technologies are influencing all aspects of life including education. They are promoting changes in working conditions, handling and exchanging of information, teaching learning approaches and so on. One area in which the impacts of ICT is significant, is education. ICTs are making major differences in the teaching approaches and the ways students are learning. ICT-enhanced learning environment facilitates active, collaborative, creative,



integrative, and evaluative learning as an advantage over the traditional method. In other words, ICT is becoming more appropriate in the realization and implementation of the emerging pedagogy of constructivism that gives greater responsibility of learning for students and administrators.

### References

- Adeogun, M(2003). The digital divide and university education in African, *African Journal of Library, Archives and Information Science*,13,(3)11-20.
- Anderson, N. & Bskin , C. (2002). Can we leave it to chance? New Learning technologies and the problem of professional Competence. *International Education Journal*. 3. (3) 123-137
- Aizaini, M. M.. & Samad, 1. A. (2003) Management\_of\_IT-Based Classrooms through Smart Laboratory RealT ime Management System. Proceedings of the 16<sup>th</sup> convention of Association of Educational Technology 13-16 Jun 2003.
- Ashok, A. (2007). Encyclopaedia of Information Technology: *Information Technology Tools*. Malaysia: Cresnet News (KL) Sdn. Bhd.
- Bertot, J.C., Jaeger, P. T., & Justin M. G. (2010). Using ICT's to Create a Culture of Transparency: government and Social Media as Openness and Anticorruption 4 Tools for Societies.l *Government Information Quarterly* 27(3): 264-1.
- Clark, A. (2006). *Teaching adults ICT skills*. Glasgow ; Learning Matters Ltd.
- Federal Republic of Nigeria (2004). *National Policy on Education* (4<sup>th</sup> ed). Lagos; Nigeria. Federal Republic of Nigeria (2001). Nigerian national policy for information technology.
- Ibe-Bassey, G. S (2004). *Principles and Practice of Instructional Communication* ( 3<sup>rd</sup> ed) Uyo ; Dorand Publishers.
- Selinger, K. D and Austine, J L, (2003). *The State of Affairs of Teacher Education with Respect to Information and Communication Technology* ; University of Chicago
- Watson, J. D (2001). *The Columbia Encyclopedea*, 6<sup>th</sup> edition. University of Chicagp press