

Utilization of Ict for Management and Administration in Education Sector

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ABSTRACT: This article discusses the Roles of ICT in education in managing schools. Information communication technologies (ICT) at present are influencing every aspect of human life. They are playing salient roles in work places, business, education, and entertainment. Administration and management applications of ICT are currently popular in schools due to its capabilities in facilitating administration activities from data storage to knowledge management and decision making. This paper seeks to discover the basic challenges that school managers are facing currently in deploying ICT for school management. Result will shed light on administrators to improvise and increase the utilization of ICT in daily administrative tasks to make their work more efficient and effective. The implementation of the recommended solutions will have no doubt boost the confidence of the present day and would-be school managers in deploying ICT in their schools. It is worthy of note that school management using ICT has enormous impacts on nation building and development.

Keywords: School, Administration, ICT, Challenges, Solution

I. INTRODUCTION

In the current information age, educational institutions are expected to play a crucial role as the engine for knowledge generation and learning environment. In this regard, ICT becomes the vital means to facilitate this task. ICT has become an essential part of our everyday life. Its integration in education is inevitable and cannot be avoided. This is due to the fact that using ICT in education has become one of the most effective factors in school improvement not only for the purpose of teaching and learning, but also for administrative use. According to Ukanwa Godson (2016) Effective school management is keys to large-scale, sustainable education reform. The interdependence and interrelatedness of educational management

cannot be overemphasized as school managers and administrators are important but perform goal oriented tasks in propagating technological interrelatedness aimed at furthering ICT for the achievement of education set goals and objectives. ICT application in schools covers a wider scope. This includes the comprehensive approach to innovate education systems, methods, and management through Information Communications Technology, restructuring education system, diversifying teaching learning methods & practices, engaging all stakeholders of education and adapting rapid to changes in society and the environment and enhancing education efficiency, effectiveness, and productivity. In the administration of the school, ICT can also be applicable in the administering of human, physical and financial resources. Application of ICT offers a wonderful potential for increasing school accountability, transparency and participation among various stakeholders.

II. LITERATURE REVIEW

Educational technology can be viewed differently, including any media that can be used in instruction. However, a narrower explanation on the subject would be confined to educational technology to computers, computer peripherals, and related software that are used for teaching and learning. On the other hand for technologists, educational technology is any hardware that is used in the classroom (Chai et al., 2009; Cuckle et al., 2000). Formal education is the major part of the education system, which is delivered through the school system of primary education to higher education. Even, pre-primary education is regular in most of the countries. The education involves mainly teaching and learning where knowledge is shared and generated. Ultimately to achieve the purpose of education in the modern world with high technology, ICT is widely used throughout the sector. ICT could also be seen as an umbrella term

that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. ICT are often spoken of in a particular context, such as ICT in education, health care, or libraries. Consequently, the use of the internet has become far more common than it used to be neither did curriculum authorities (planners), school managers/administrators or education boards able to grasp the full implications of this complete overthrow for today's school management. There is no longer any reason/need to base school management/administration around on just manual collation of data, heaping of exam script or even stacking of file cabinet. Our 21st century administrators need to be effective instructional and technological leaders in their schools, actively participating in the selection and implementation of the tools teachers will use to engage students and improve learning. In the past, IT departments were tasked with making technology decisions, with much of the technology focus concerned with blocking access to inappropriate content. Effective selection of modern technology tools requires understanding of the instructional needs and goals of modern educators. 21st century administrators should expect teachers to demonstrate how tools like blogs, wikis, Google apps, Twitter, and other social networking and Web 2.0 technologies can be used to support students in meeting the expectations that have been set forth for a 21st century learning. The 21st century school management involves a collection of sophisticated tools such as videoconferencing, virtual laboratories, screen-casts, e-mails, forums, search engines, blogs, podcasts, vod-casts, wikis, vovkis, high-tech 3D graphics, e-Groups, learning dialogue videos, learning by-doing videos, digital game/toy-based learning and flipped-classrooms, virtual classrooms, 3D-animations and high-tech multimedia with associated pedagogy of active learning which have quickly emerged as the backbone of effective education in this century. In fact, blended learning is the necessity of 21st century.

III. 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.

3.1 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 in-house 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; Af7aal, 2011).

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).

3.2 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.,

2011). In Malaysia, administration teachers can be divided to three groups which are curriculum head, students Affair Head and Co-curriculum head. The curriculum head teachers are responsible in handling overall student's record. Teachers under this curriculum head have to maintain all records regarding the pupils by keeping in particular format. This computer files contains pupils cumulative records, formative evaluation and summative evaluation which can be print out from the software application for hardcopy documentation. However, the most commonly reported use of ICT for teaching is preparation for notes, teaching-learning resources and examination Mwalongo (2011)The results of previous studies (Mwalongo (2011: Selwood. 2004) indicate that ICT applications used to prepare timetable, teaching plan. schemes of work and school reports by all the three administration teachers for various purposes. Administration teachers can set up tests and online assignments that can be automatically graded, which saves a lot of time for the marking and correction process. They also can generate the results by using ICT applications. At the same time, they use ICT applications to set up websites and online portals for students to access the assignments(Kawade,2012).

3.3. 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. Non-salary grants, and stocks keeping as well as student evaluation report and overall student records for future references (Kawade. 2012: Kazi. 2012).

IV. 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; Mwalongo. 2011; Susmita, 2007). The detail information on ICT

tools that been widely used in education administration and management are as follow:

4.1 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. This is due to capability of Internet to provide opportunities for introducing advanced teaching — learning methods. The advanced and modern methods of learning are able to prepare students as skilled work force for future.

In most of the schools, teachers allowed their students to communicate personally with them via email, forum, or social networks such as Facebook. Twitter. Moreover, Internet also used for uploading and receiving students' assignments. Literatures show the trust by teachers that the internet provides access to valuable online resources of data and tools that can be useful for both groups of students and teachers (Aizaini & Satnad. 2003; Mwalongo. 2011; Richardson, 2007: Afshari ci al., 2012). On the other hand, web based or internet based searching, communicating and managing materials will directly and indirectly improves the organization's performance (Ghavit'ekr et al, 2012). 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.

4.2 HARDWARE APPLICATIONS

Each year computers and other Information Technology and Communication hardware evolve. New machines and new equipments 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, photocopy machines. TVs, radio, digital cameras, scanners, DVI) players, Laptops, multimedia projector, and overhead projectors (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).

4.3 SOFTWARE 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; Kawad, 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. There are a lot more software applications that have been used by schools administration and management, for example, the most famous application in schools is EMIS. EMIS, which is an abbreviation for the "Education Management Information System". is a sub-system of an education system whose aim is to collect, store, process, analyze and disseminate information (Susmit, 2007).

V. 5. 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. Several challenges militate against the effective use of ICT in school management, these ranges from;

- I. Infrastructural deficiencies
- II. Lack data security and impurity in the side of the government
- III. Lack of maintenance culture
- IV. Limited/no access to the internet
- V. Non-available of skilled ICT personnel

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 hightech 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.

VI. BENEFITS OF ICT APPLICATION IN AN EDUCATIONAL ADMINISTRATION AND MANAGEMENT

According to Lin et al. (2011) 'school effectiveness' is a goal set by administrative leaders through their leadership strategies to help schools reach certain achievements across the board. The Use of ICT applications in educational administration will help them to achieve their goals easily. 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 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. Apart from sufficient financial support, 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. 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).

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. 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).

VII. WHAT SHOULD BE DONE

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.

- Government and non-governmental organizations at all level of governance should make available to school ICT gadget at subsidized rates or even for free.
- 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.
- 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.

- 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.
- 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.
- 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.

VIII. CONCLUSION

This review 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.

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