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AN OVERVIEW OF ICT IN EDUCATION FOR NATIONAL TRANSFORMATION IN 21ST CENTURY AND BEYOND

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Abstract
Today world is a global village where every activity is connected globally education inclusive. This paper seeks to examine the role of information and communication technology in education for national transformation in 21st century and beyond. The chapter discuss the concept of ICT, ICT and current state of Nigeria education system, importance of ICT in Nigeria education and the role of ICT for Nigeria national transformation. It recommended among others that achievement in adoption and application of the new technologies depend greatly on the recognition of the several benefits achieve from ICT application by education managers and teachers.

Keyword: Overview, ICT, Education and National Transformation

Introduction

Education is vehicle for national development through the building and development of human resources. Education is recognized as one of the most fundamental building blocks for human development which has a formative effect on the mind and character and accelerates the development of knowledge, skills and attitude. Education is a means by which an individual acquires the many physical and pscho-spiritual capabilities demanded by sociocultural environment within which one is groomed to live and function. It is on this platform that the

Federal Republic of Nigeria (FRN in Alumode, 2013) stated that:

> Education shall continue to be highly rated in the national important instrument of change; any fundamental change in the intellectual and social outlook of any society has to be proceeded by an educational revolution.

The most effective sociological tool for national transformation can best be found in a good educations system whether formal or informal. A successful development entails not only investing in physical capital or closing the gap in capitals but also in acquiring and using knowledge as well as closing the gap in knowledge.

National Transformation

Transformation requires rooting out human nature that prevent us from embracing innovation which will make our lives better. According to Alumode (2013) transformation is a change, the act of changing or the state of being changed for the better. The added that it requires us to change the way people think about institutions: economic, social, political, religious, education, employment, culture and moral etc. Transformation entails advancing to higher level morals; leaders inspiring followers to change expectations, perceptions and motivations to work towards common goals, development of vision; a view of the future that will excite and convert potential followers. Transformation is concerned with reversion of conflict situation to a state of peace and tranquillity, scarcity to surplus, war to peace, illiteracy to literacy, insensitivity t sensitivity, immorality to morality and corruption to correction. The list is endless. Transformation is to change completely the appearance or character of something or someone that they become improved. To transform also implies to give a different form, to change the character of, to alter the nature of and to convert (Procter, 1995, Read, 2010). AlumodeSumup National transformation to involves change in the individual and collective condition of life is the society of better. That is any kind of change is witnessed in every various aspects of the society such as politics, economics, health and education. Rational transformation includes producing more and better food to eat, a state or improved health condition for the nation, improved living accommodation, peace, good moral behaviour, unity, absence of armed robbery, thurggery, kidnapping, embezzlement, improved educational system and better educated citizen. In addition, national transformation, the individual and his quality of life should

be at the centre/focus because it is not the institution percent that make up the society but how they change the attitude of the people.

Universally education is focused on producing all round educated individual who has the capacity to engage in academic investigation and lifelong learning. Usually, this is achieved through teaching, learning and research. Students are expected to engage in classroom activities as well as independent learning through reading and research (Anunobi, Ogbonna&Moneke, 2013). The bedrocks of effective teaching, learning and research is information resources of various types including, books, journals, proceedings, newspaper, magazine, pamphlets and lot. However, the turn of the 21st century and the advancement in Information and Communication Technology (ICT)brought about global reformation in teaching and learning as well as information resources packaging format. Teaching, learning and research are achieved, virtually (e-learning), and information resource sourcing and use is also done virtually, despite the changes in packaging and access method, changes are also prevalent in the characteristics of the new information users who are computer-driven and who are capable of independent learning (Blackburn, Starkey & Wise, 2009). Information users in this emerging information society are becoming more comfortable with electronic – enabled teaching, learning and information resources and sourcing (Oblinger&Oblinger, 2006). Information and communication technology on the other hand has become a global phenomenon of great importance and concern in all spheres of human endeavour, especially in education sector. For education to be effective and efficient, it is essential that there be major opportunities for students' participation in the learning process. ICT has been defined by Iloanusi&Osuagwu (2010) as the processing and maintenance of information, and the use of all forms of computer, communication, network and mobile technologies to mediate information. They added that communication technologies include all media employed in transmitting audio, video, data or multi-media such as cable, satellite, fibre optics, wireless technologies include personal area networks (PAN), campus area Network (CAN), intranets, extramets, LANS, WANS, MANS and the internet. Computer technologies include all removable media such as optical discs, disks, flash memories, video books, multimedia projector interactive electronic boards and continuously emerging state-of-the-art

PCs. Mobile technologies comprise mobile phones, PDAS, palmtops, etc. These technologies have information as their material object. Information is not reserved for use in isolation, but rather communicated among users.

Concept of Information and Communication Technology (ICT)

The concept of information and communication technology (ICT) has view in different prospective by various scholars. To me ICT is a technology which gives assistance to human activities to more effective and efficient in production process. Hornsby (2000) defined ICT as facts or knowledge provided or learned. It is therefore facts of details about a situation, person or events. He also defines technology as the application of scientific knowledge for practical purposes. Information Technology (IT) according to Nzewi (2009) is the study and use of electronic process for storing information and making it available for users. It is range of technologies for gathering, retrieving processing, analysing and transmitting information from everywhere anytime. To Onyejekwe (2006) ICT as a broad-based electronic technology that is used for collecting, storing, processing and transmitting information in various forms. The advancement technology has created many ICT tools that are necessary and useful in the development process. These new technologies have become central to contemporary societies as Olubamise (2007) classified ICT to include;

- Information technology that uses computers which have become indispensable in modern societies to process data and save time.
- Telecommunication technologies which includes telephones-mobile, fixed (with fax) and broad casting of radio and television, often through satellites.
- Networking technologies of which the best is the internet, but which has extended to mobile phone technology voice over IP telephone, satellite communications that are still in their infancy.

Globally, ICT have made every society to be modernize with easy connectivity and communication for possible learning/teaching. Education is a prerequisite of today's knowledge-based economy. The production and use of new knowledge required a more educated population. ICT is playing a major role in the acquisition and diffusion of knowledge which are fundamental aspects of education process. It is offering increasing possibilities of codification of knowledge about teaching for innovation

in teaching activities through being able to deliver learning cognitive activities anywhere at any time (Larsen & Vincent – Lancrin in Obiora&Esoswo, 2013). The availability of the internet has given rise to an electronic approach to the educational system called e-learning.

Sutherland, Robertson and John (2004) revealed that technology and ICT bring a new way of learning and teaching, and so should be the impact of e-learning opportunities and distance education on universities in the future as well as on education and learning in a global framework is a very important issue. For the fact that developed nation's educational systems are being operated on the wheel of strong information technology support systems. Nigeria is not exempted hence Nigerian educators of the future need to acquire two other forms of literacy. Computer literacy is necessary to operate and survive the current information technology revolution. Educators without computer literacy will become increasingly obsolete both personally and professionally. Internet literacy is needed to deal with skills needed to surf the net, navigate the web and use internet resources and services (Onyejeke, 20006). Iloanusiet al (2013) noted that ICT applied to education enhances the delivery and access to knowledge, and improves the curriculum. It produces richer learning outcomes compared to education without ICT. It encourages critical thinking and offers unlimited means of achieving educational goals. ToIfidon&Nwalo (2003), for people to be effectively educated and contribute to national transformation there has to be an effective educational system, which requires information and if information is to be at the disposal of everybody, there must be information services through information and communication technology.

Importance of ICT to Nigeria Education Development

Since the inception of ICT, man has been involved in the process of technology and has also been systematically producing various objects, machines and likes to alliance his desires for survival and fulfilment. According to Abimbade, Aremu&Adedoja (2003) technology is a systematic and integrated organisation of man, machine, ideas and procedures to achieve a desire goal. In Nigeria the awareness of computer enabled technology and the use of Information Communication Technology (ICT) are very recent, but they are spreading like wildfire. Children and youths have access to computer outfits located in all nooks and crannies in the urban setting. The computer outfits give training and render assistance on the use of the new

technology to their learners. Home provide television with video games which also use the new technology; as such children are not only conversant with the new technology but watch programmes to the teacher especially, as the informational ICT training programmes have no approved school curriculum guiding them nor the video games and television programmes watched at homes censored. The observation by oblinger in Obiefuna&Enwereuzo (2013) may be worst in Nigeria, if there is no educational intervention programme on the use of ICT. Ikwuka (2010) opined that educational technology is all about facilitating and using information to elicit responses in the cognitive, affective and psychomotor domains. While acknowledging the use of various other resources in education to facilitate information and communication in learning process, the advent of computers has, however, made it better, easier and quicker. In addition,Onyejekwe (2010) make it clear that our society is rapidly transforming into one which is based on information, requiring its citizens to be familiars with, and at ease with information-based resources and their manipulations. ICT in education simply means effective way of passing academic instruction, storing, retrieving, coding and decoding information for better understanding of the learner and easy illustration and teaching by teachers (Adeyanju, 2010). Therefore, for a Nigeria learner not to be left out in what is happening in the world, he or she has to key in, into the use and application of this technology, and this has to star from the foundation of education right through to the tertiary level. The possession of adequate knowledge of ICT skills opens for both the teachers and students a wide range of opportunities and possibilities (Offorma, Eze&Egbe, 2008).

According to Abimbade et al. (2003), the practical application of ICT in the area of primary level language development. They added that the use of computer software have actually helped the child's reading process, encouraged the children to talk to each other and make decisions, argue and think thing through. The impact of ICT in teaching and learning has proven to bea big and better asset in education industry. The National Policy on Education NPE (2004) maintained that "Government shall provide facilities and infrastructure for the promotion of ICT at all levels". Studies from countries such as Singapore, Thailand, Indonesia, Malaysia and Philipines according to Bangkoko in Obietuna (2013) reports show that ICT tools have helped to improve greater autonomy in learning,

stimulate students' sensory and cognitive curiosity, develop life skills, boost self-confidence and facilitate the learning of abstract ideas and theory. The use of computers in education according Jump (2008) can be more efficient, it can provide better learning results and it can be made adaptive to the individual learner. But also important is the fact that it can be fun to learn with computers. Also, skills like collaboration, critical evaluation, receiving feedback, planning and organisation can be learned.

The role of ICT for Nigeria National Transformation Nation cannot experience transformation when the people cannot think, create and make use of their hands to improve their own lives. Therefore, ICT has been aptly described as both an enabler of transformation as well as an enhancer of capacity development at the individual, community, organisational, systematic and societal levels. In recognition of this, the United Nations Millennium Development outlines a focus on partnership with the private sector and civil society to ensure that the benefits of new technologies, especially information and Communication Technologies are available to all (Matsuura, 2003). Madon (2006) pointed to the growing evidence of the role that ICT can play in enhancing transformation.

With innovative and dynamic ICT policies on grand, Nigeria can be transformed from ICT consumer nation to a producing nation. Abiodum (2011) opined that deploying ICT in certain aspects of the national transformation agenda and ICT policy of the nation will play a vital role in combating the current national challenges. Wadi and Sonia in Ofoagbu (2008) pointed out that ICT has the potentials to enhance educational quality by increasing motivation, facilitating acquisition of basic skills, promoting enquiry and exploration which lead to national transformation. Abidum further stated that ICT can improve national security of Nigeria in the area of financing, communications, surveillance, intelligence gathering, coordinating, identification, public enlightenment, as well as emergency response. Similarity Adeyemi (2012) commended that studies from newly industrialized countries (NICS) and the developed world have shown that ICT can positively contributed to economic growth and solved myriads of challenges, including insecurity. To him, the dynamism of ICT promised fundamental change in all aspects of life, including knowledge dissemination, social networking, poverty reduction, economic and business practices, political engagement, education, health, leisure, and entertainment. In addition,

Matsuura (2003) opine that ICT also has the potential to foster dialogue and consultation between citizens and government, between citizens and political parties and between groups of citizens by which government and social representatives seeks to understand people's needs and in which citizens seek to contribute actively with their knowledge. He further stress that access to information is necessary for the citizens to know about policies that affect them, to understand the opinions available and to be able to gather the information to make an informed opinion. Public participation is necessary for citizens to be able to make their opinion known to the relevant authorities on a particular policy. Accessibility to timely information is the determining factor towards all round success in various facts of lie. The integration of ICT into key national transformation priorities such as poverty reduction strategies and national competitiveness agenda are critical harnessing ICT to achieve Millennium Development Goals (MDGs) in the following ways:

- Fostering an enabling environment for greater ICT use through measures such as support to increase competition in the telecommunication and IT sectors, adoption of strategies and partnership to enhance access and developmental at affordable cost, as well as capacity development and incentives for enterprise.
- Elucidating the policy choices and prioritisation of actions for the increasing use of ICT in government systems and in the delivery of public service in the fields of education, health and environment management to enhance achievement of specific MDGs.
- Improving citizen's access to information and expanding the scope and the impact of public sector interventions through support to community initiatives and public.
- ICT can be deployed to strengthen decentralisation, service delivery and advocacy capacities to local groups.
- Private partnership, addressing health, education and concerns relating to the creation of economic opportunities.
- ICT can also be used to strengthen capacities of NGOs and community organisation to advocate and promote local development and monitor the achievement of the MDGs (Taiwo, 2009).

Cranston (2000) revealed that knowledge of ICT could assist the school administrator in keeping essential records such as records of admission of

students, personal data, examination, financeand budget similarly Anumnu (2008) noted that ICT could assist the teacher in a great number of ways such as lesson preparation, writing to student reports, retrieval and storing of data, collation and analysis of student achievement. Teachers can also improve the quality of their teaching by searching for information in the internet and can also improve quality of their teaching by searching the information in the internet and can also acquire new strategies and skills in lesson presentation through the internet. The teacher can as well use the computer in drawing, graphic representations, columns and sending e-mail messages.

Conclusion

The use of ICT is becoming more imperative in our society today, evidence shows that ICT, is very necessary in education for national transformation since we are now in a global village. ICT play vital role in the management of education through instructional delivery collaborative, exploratory, discovery and independent learning which can easily be achieved through effective ICT application, also in nation security in the area of financing, communications, surveillance, intelligence gathering, coordinating and identification of public enlightenment and a lot more.

Recommendation

The following recommendations were made base on the study;

- Achievement in adoption and application of the new technologies of ICT depend greatly on the recognition of the several benefits achieve from ICT application by education managers and teachers.
- There is need to create awareness on the role/relevance of ICT in education system
- In view of the role/importance of ICT for nations transformation Federal and State Government should provide adequate fund and facilities to education and ensure proper utilisation of the fund for the enhancement of ICT.

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