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INFORMATION AND COMMUNICATION TECHNOLOGY (ICT):
A PANACEA FOR TEACHERS EDUCATION IN 21ST CENTURY
EDUCATION

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Abstract

This paper examines education as the backbone of every development. Education should empower learners to be useful to themselves, community and the nation at large. This paper examines the Teacher Education. Teachers are the major players in any education sector and their place in the scheme of things in education cannot be underestimated since no education can rise above the quality of its teacher. To achieve this innovations in education, teachers should be accorded priority attention in order to raise their professionalism to facilitate the attainment of educational goals. The curriculum of the teacher education is examined. The curriculum, the pedagogy and the training of the teacher should be reviewed periodically to suite the needs of the 21st century innovations. This paper posits that teacher education should be Information and Communication Technology (ICT) compliant to transform the nations education. This is because, nations across the globe have made drastic changes over the decades. The authors of this paper advocate for Information and Communication Technology compliance in teacher education to compete favourably with the global trends in education and for development. Knowing that Information and Communication Technology (ICT) has made the world a global village. ICT is virtually needed in every



human endeavours. The application of ICT into education will enhance development. This paper centres on ICT as a panacea for Teacher Education in 21st Century education.

Keywords: Education, Teacher Education and ICT.

Introduction

The importance of education cannot be over emphasized. Education is seen as the greatest contributor to the development of any nation. It is a process of transmitting the people's culture from generation to generation. Education is the universal industry used to preserve, maintain, and upgrade the culture and future of a society. Societal future depends largely on the quality of its education. Nwaham (2009) in Ebeigbe (2011) opined that education is a process through which an individual acquires the various physical and social capabilities demanded of him in the society in which he must function effectively. Education is the process of transmitting knowledge, skill culture and socialization. In the same vain, Ebeigbe (2011) says that education is life long, all round development of an individual. Culturally, intellectually, morally, spiritually, aesthetically and skillfully for self actualization and for the nation.

Fundamental Principles in National Policy on Education

In the National Policy on Education (Federal Republic of Nigeria (FRN) 2004; page7). These fundamental principles about the importance of education to national and individual growth are captured in the three basic items under the Nigerian philosophy of education.

These three basic philosophical items are:

- (a) The development of the individual into a sound and effective citizen.
- (b) The full integration of the individual into the community.
- (c) The provision of equal access to educational opportunities for all citizens of the country at the primary, secondary and tertiary levels both inside and outside the formal school system.

Education in Nigeria is a diversified programmes for the development of high level manpower within the context of the nation's need and providing relevant information through the use of modern Information Communication Technology (ICT) facilities.

Teacher Education in Nigeria

Teacher education is a training programme to prepare school teachers. It is that aspect of education which is carefully designed to prepare and groom those who teach and provide relevant professional service to our schools and colleges (Igbiwu,2004).

Teacher education is the policies and procedures designed to equip



prospective teachers with the knowledge, attitude, behaviour and skill they require to perform their task effectively in the classroom, school and wider community. A brief history of teacher education in Nigeria showed that there was no formal training for the early teachers. They started as catechists performing many functions, such as teaching catechism or giving religious instructions to children and other converts. With the coming of missionaries in Nigeria training of teachers started as the missionaries need literate African natives as teachers to help achieve their aim of evangelism. In 1896 St. Andrews College was founded by the Missionary Society (CMS) at Oyo.

Purpose of Teacher Education in Nigeria

The purpose of teacher education in Nigeria as contained in the National Policy on Education (1981) areas follows.

- (i) To produce highly motivated, conscientious and efficient classroom teacher for all levels of our educational system.
- (ii) To encourage further, the spirit of enquiry and creativity in teachers.
- (iii) To help teachers fit into social life of the communities and society at large and to enhance their commitment to national objectives.
- (iv) To provide teachers with intellectual and professional background adequate for their assignment and to make them adaptable to any changing situation, not only in the life of their country but in the wider world.
- (v) To enhance teachers' commitment to the teaching profession.

Curriculum Review

To enhance quality Teacher education for this 21st Century innovation, the curriculum should be reviewed constantly. Since the society is dynamic and not static, the curriculum should embrace viable and qualitative production of human resources geared towards national development. The curriculum should be reviewed to suit the objective of Teacher education as stipulated in National Policy on Education (FRN 2004).

Professional Preparation of Teachers

The role of the teacher in this 21st century cannot be over emphasized. The National Policy on Education asserts that "no education system can rise above the quality of its teachers (FRN 1981). The quality of education depends on the quality of its teachers, hence the necessity to have high caliber of teachers in the educational system. Ukeje (1986) asserts that it is national suicide for any nation either by accident or design to have its best brains cure its sick; design and build its road and bridges, formulate and interpret its laws while its poorest brains teach its youths. Such a nation will likely always have pathetic doctors, poor roads and



bridges and incognious laws. This is simple because poor brain will always produce poor fellows, instead of the reverse. The cumulative effect according to him is continuous crisis and non development. Our educational and socio-economic redemption as a nation lies clearly in having a teaching force of high academic and professional standing for different levels of education.

According to the Nigeria Education Research and Development Council (NERDC,1980)the different classes of teacher are as follows.

- (i) Grade II teachers in pre-primary level should be headed by NCE teachers.
- (ii) NCE teacher in primary school level should have graduate teacher as the head.
- (iii) NCE and university graduate at Junior secondary level as the head.
- (iv) University graduate with professional qualification in the disciplines at the senior secondary level as the head.

Information Communication Technology (ICT)

The use of Information and Communication Technology (ICT) has permeated all strata of human activities and it is increasingly gaining prominence in the performance of different tasks especially education.

According to Ohiwerei (2005), information technology encompasses all these technologies that enable the handling of information and facilitates different forms of communication among human actors between human beings and electronics systems and among electronic system. While Okoro, Ikpotokin and Ekong (2002) in Ohiwerei (2011) states that information technology is “a variety of means, which enable the capture or creation, storage or distribution of data, information and knowledge”.

According to Edom (2007) in Erimieleagbon and Okonoko (2011), ICT is defined as the electronic tools or technological resources that are used to gather, process, store, preserve, access, retrieves and disseminate information when required with minimum delay. Ekoja (2007) sees ICT as kits or equipment used for capturing and processing information.

In the 21st century education, Information Communication Technology (ICT) should be used in the education sector to improve and transform the quality of education.

Oduma (2013) see Information Communication Technology (ICT)as the processing and maintenance of information, and the use of all forms of computer, communication, network and mobile technologies to mediate information. Communication Technologies include all media employed in transmitting, audio, video data or multimedia such as cable, satellite and Wireless (radio, infra-red, blue tooth, wifi) gadgets. Network technologies include Personal Area Network (PAN) Compus Area Network (CAN) and the Internet computer technologies. It also includes all removable media such

as optical disc, disks, flash memories, video books, multi media projectors, interactive electronic boards and continuously emerging state of the art PCS, we also have mobile technologies comprising mobile phones , palm top, lap top, etc all are necessary for information dissemination. These technologies have information as their material object.

Information Communication Technology (ICT) produces better and richer learning outcomes when compared with education without information communication technology. The application of ICT in our educational activities will encourage critical thinking that will lead to the achievement of our education goals. The education industry should apply and use the ICT in teaching and learning activities to make information quicker and richer. Education reform is encouraged with the use of information communication technologies. The teachers and the students should be encouraged to be acquainted with ICT and follow the applications and thereby enrich and improve teaching and learning in schools.

Relevance of ICT in Enhancing Qualitative Education

According to Ohiwerei (2005) some of the importance of Information Communication and Technology to the improvement of education in the 21st century include:

- It is an essential source for which education collate materials for teaching and learning.
- Through Information Communication and Technology, new knowledge are acquired.
- Education activities like preparation of salaries and wages, and result depends on information communication technology for decent presentation and conclusion.
- We are living in a society which is information based. ICT is a necessity to reach out the world and retrieve information for daily needs.
- Information technology influences our work and increase productivity.
- There should be a combined utilization of computer technology education communication network to improve our education to be current with correct information.

This is in correlation with the National Policy on Education (FRN 2004) which has its broad objective thus:

- To provide trained manpower in applied science, technology and commerce, particularly at sub-professional grades.
- To provide the technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic developments. Information communication and technologies enables us to have free flow of information for development. ICT is imperative in 21st century



educational activities.

- To provide people who can apply scientific knowledge to the improvement and solution of environmental problems for the use and convenience of man. ICT is a tool for educational improvement in the 21st century for convenience of man.
- To give introduction to professional studies in engineering and other technologies. ICT gives the needed information and also retrieve information needed for educational improvement in the 21st century.
- To give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant.
- To enable our young men and women to have an intelligent understanding of the increasing complexity of technology. ICT is an important area where people need to exploit to access the world and develop their lives from online e-learning.

According to Oduma (2013), ICT applied to education could be deployed in the mode of e-learning, mobile learning, and distance-education. E-learning seem to be the biggest umbrella in education today. E-learning is learning mediated by an open set of all kinds of technologies. It is the use of ICT which includes computer, networks, communication and mobile technologies to enhance and extend learning to the door step of those who want it. These technologies help deliver and make education and information accessible to whoever needs it. According to Oduma (2013) the difference between e-learning and traditional education setting is that, for the latter, the students' assimilation of knowledge is through the teacher, but with e-learning, the focus is no longer on the teacher but both teacher and student, especially who take advantage of technology to varied resources of knowledge made available by existing technology.

It is pertinent to know that information communication technologies themselves with the development in Information Communication Technology (ICT) to improvise instructional materials for teaching and learning.

ICT for National Transformation:

- Information Communication Technology (ICT) compliance will foster national transformation in this 21st century for the good of man in all aspect of life. Nations across the globe have made dramatic changes over the past decades, while some countries have been slow to respond to this new wind of change. Education in 21st century should follow the wind of change brought by Information Communication and Technology (ICT) to the improvement of teaching and learning processes.



- ICT will make Nigerian teachers to compete favourably with others across the globe by this exposition.
- Information Communication Technology (ICT) is fast transforming the world into a large globally connected community. Education as an accepted tool for social change and reconstruction, is in the centre of this accelerated process of social and cultural change. Significant reforms are needed in education industry in Nigeria to respond to and shape the trend in support of both economic and social development. Systematic education overhaul will be needed in teachers education.

ICT Through E-learning To transform Teacher Education in 21st Century

E-learning is an integration of self-study based on individual needs and choices, group learning in the context through interaction with media, men, machines, peers and members of other groups and resources available on the internet resulting in the better skilled individual. According to Osagiede (2013), the e-learning education system is a paradigm shift from old to new technologies, from static to dynamic learning resources based on open educational resources, from print to multimedia, from local to storage, and access to anyone, anywhere, anytime; from no quality control to centralized equality assessment mechanism; from non replicating to replicating knowledge resources and from single user to multiple user resources.

The role of an ICT - Oriented Teacher in the 21st Century

The new teacher with the e-learning skills and abilities can conveniently perform these roles:

- Nurturer of e-culture
- Teacher as a change agent and networker
- E-learning specialist
- E-learning resource developer
- E-learning strategist
- E-researcher and evaluator.

The e-learning programme is a new technology that will transform the old teacher to a new teacher, from inform-type/teacher to perform-type teacher and would equip the new teacher to promote:

- Learning to learn/self study.
- Learning by doing/performance based.
- Learning through/distributed classroom
- Personalized learning supported by e-learning resources.(Osagiede 2013).

Effectiveness of Information Communication Technology

According to University Grants Committee (1996), another opportunity

presented by the telecommunications revolution is further widening of access to higher education and advanced learning for adults, non-traditional and second chance learners, and the disabled. Developed societies are moving away from the traditional model whereby people complete their education and then devote themselves solely to work. Initiative such as distance learning built around new technology offer one way of meeting the need for a more flexible system by allowing people to dip in and out of education and periodically update their knowledge. Some works are already being done in this area by University Grant Committee funded institutions, their schools of continuing education, the open learning institute and others.

According to Wang (1995),the internet and the telecommunications revolution offer the prospect, not very far in future, of replacing universities with international virtual campuses, enabling students to have on-line access to the best teachers and scholars worldwide. Such institutions are already appearing at least in embryonic form, and it does not require much imagination to see what the implication of such development might be. For example the advocate for the Globalwide Network Academy (GNA) wrote recently saying “much of the reason for the existence of Globewide Network Academy lie in the belief that new organizational structures are needed if universities are to provide education for the masses of the world with the diminishing resources which are available to them” Wang (1995).

Conclusion

Education is widely accepted as a tool for national development. For our education to be meaningful in this 21st century, there must be improvement from the teachers perspective in the use of Information Communication Technologies (ICT). Information Communication Technology (ICT) could mean different things to different people, depending on its usage, The relevance of Information Communication Technology(ICT) revealed that conscious effort should be taken as a matter of urgency to make ICT compulsory for every practicing teacher to be ICT compliant.

Information Communication Technology (ICT) is a tool needed in our education and in all aspects of human endeavour in this present day Nigeria. A time frame should be given to teachers in service to acquire ICT skills. E-learning as an aspect of ICT will help teachers of this 21st century to function well and interact favourably with other professional colleagues across the world. This e-learning will revamp the teacher and teacher education in this 21st century.

Recommendation

After an exhaustive analysis of this study the authors came up with the following recommendations thus:

To make education successful to face the challenges of 21st century, the

teachers should be ICT compliant. This can be done through in-service-training. This is in line with the position of Ohiwerei (2011) who stated that we should welcome change, embrace change, learn to manage it and be among the first to integrate it into our professional world.

In the Information Communication Technology (ICT), teacher should always make use of the internet to source for information, HU and Kuh (2001) also noted that internet is a plethora of pop-ups offering some new hi-tech gadget or gizmo to entertain, educate or improve life. Keeping up with the latest technology is education. If we as educators want to earn the respect of our students, we must use the internet. The internet will help us to communicate with others and to find materials and assistance with our coursework.

Teacher should be inquisitive to study whatever the new equipment introduced into the system as ability to adjust to the new knowledge of improving life of the people.

For Information and Communication Technology (ICT) to be useful to the 21st century teacher, he must be reading constantly. The teacher of the 21st century must regularly attend conferences and write articles.

To meet global challenges of the 21st century, ensure that teachers stay updated through in-service training and teacher development programmes.

Teachers should be provided with computers, laptops to meet up with the demand of Information and Communication Technology in this 21st century teaching activities.



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