

Teacher Education, Information Communication Technology and Educational Technology in Nigeria in the 21st Century

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ABSTRACT: It is widely accepted that, Education is the back born of any meaningful development and teachers are the back born of any education system. Nigeria as a developing country has problems in its teacher education system especially with regards to the modern Information Communication Technology (ICT) tools in teacher delivery. In the modern day which is full of many innovations and modern technology products that are now in the classroom ICT play a vital role in teacher education. Likewise, proper utilisation of educational technology in the teacher education is of a paramount importance as educational technology has to do with, machines, materials, media, men and methods in achieving specific educational objectives. The paper discusses the nature of Teacher Education, ICT and Educational Technology in the 21st Century: problems and prospects in Nigeria. Some of the problems faced by teachers include lack of skills towards utilising some of the ICT tools, lack of electric power stability or alternative power source and lack of Government commitment. The paper proffers ways to ameliorate the situation which include provision of adequate facilities to teacher education programmes, ICT and Educational Technology Centres. The recommendations will be helpful in having effective and efficient implementation of Teacher Education Programmes, ICT and Educational Technology in Nigeria.

Keywords: Teacher Education, ICT, Educational Technology

I. INTRODUCTION

Teacher Education, Information Communication Technology and Educational Technology are some of the major concepts Nigerians have been voicing out especially when it comes to the issue of Teaching and Learning. It is widely accepted that 'Education' is the back born of any meaningful development as no country or community will rise above the level of its education. Going by the above assertion it can be said that teachers are the back born of any meaningful education. This is to say that Teacher Education is of a paramount importance in achieving any meaningful education due to the fact that it is through proper teacher education that transmitters of the societal norms and values can effectively and efficiently be realised.

What is Teacher Education?

Magama (2004) holds that Teacher Education is an aspect of education which deals with the acquisition of practical and applied skills in the teaching job. This is to say that teacher education has to do with the acquisition of the required skills to have the potentials of inculcating the societal norms and values.

What is ICT?

Information Communication Technology refers to those Information and Communication Technology devices that are used in transmitting or disseminating information. Akudolu (2002) holds that Information and Communication Technology relates to all kinds of electronic systems that are used for broadcasting, telecommunications and all forms of computer-mediated communication.

What is Educational Technology?

Educational Technology is the application of technology into the educational fields. By way of illustration 'Technology' has been used to address practical problems in Transportation, Communication, Medicine, Sports, Agriculture, Defence and so on. Technology has also been used to address practical problems involved in human learning. More formally, Educational Technology is the "application of technological processes and tools which can be used to solve problems of instruction and learning. Today the world of education is changing on and on. There are new innovations, new machines, materials, media and techniques in the teaching and learning situations. This has clearly shown the importance and need of educational technology.

Aggarwal (2007) holds that educational Technology is a system of 5 M's. Educational Technology is a system in education in which machines, materials, media, men and methods are interrelated and work together for the fulfillment of specific educational objectives. "Technology explosion" has yielded several new machines, materials and media which have great potential for use in the educational enterprise. To Ema, E. and Ajayi, D. T. (2006) Educational Technology is the application and organization of people, methods, techniques, devices, equipments and materials systematically and scientifically in order to solve teaching and learning problems, as well as improvement on the educational system. However, Salawu (2001) in Gokum, K.D, Shittu, A. S. Maikano, P.N, Ibrahim, M.I, and Mustapha, E. (2008) defines 'Educational technology' as the application of scientific knowledge about learning and conditions of learning to improve the effectiveness and efficiency of teaching, training and learning. Ibrahim (2013) quoted (AETC 1972) that educational technology is a field involved in the facilitation of human learning through systematic identification, development, or organization and utilization of learning resources and through the management of these processes. However, this definition was revised in 1977 and 'Educational Technology was seen as a systematic approach to solving educational problems so it was defined as "a complex integrated process involving people, idea, device and organization for analysing problems and designing, implementing, evaluating and managing solution to these problems involved in all aspects of human learning (AETC 1977). Educational technology is, by its nature, elusive because it is relatively new, and so, it means different things to different people. Scholars, experts and professionals alike at various times and stages of educational technology have propounded several interpretations and definitions. By these we expect various definitions varying from simple to complex. Whatever will be said regarding the meanings or definitions of Educational Technology, it is widely accepted that both teaching and learning benefit from the positive effects of educational technology. This means that the teacher and the learner are affected by educational technology. Ibrahim, S. (2013) holds that the world is rapidly becoming narrower and narrower global village as information and communication technology is now beyond borders. To him education is more real and permanent with educational technology.

Relevance of Educational Technology in the Nigeria's Education System

Educational technology what relevance in the Nigeria's Educational System?

'Relevance' as a noun refers to the degree to which something is related or useful to what is happening or being talked about. Therefore, the degree to which 'Educational technology' is related or useful in the Nigeria's educational system is what the relevance is all about. The world is changing rapidly and therefore, there is need to find more ways of handling such changes squarely. Just rewind to your primary school days. How was the method of teaching and acquiring knowledge then, can you compare that time and the present days? Explain in clear terms your stand. And how do you think if there are possible changes the reasons for their occurrence?

It is perhaps the rapid changes of the world necessitated the production of new materials, machines and introduction of new methods to enhance the teaching and learning situations.

The National Policy on Education 4th edition (2004) has *clearly* stated under philosophy and goals of education in Nigeria that: -

- a) Education is an instrument for national development; to this end, the formulation of ideas, their integration for national development and the interaction of persons and ideas are all aspects of education; Since our education has goals that means there are problems and they (problems) needs solutions. How shall we offer solutions to educational problems especially in providing the foundations for enhanced learning experiences through the meaningful integration of technology?

The relevance of educational technology in the Nigeria's education system cannot be overemphasized because it helps in understanding what is available why, how and when it should be used, how it is effectively adapted, integrated, evaluated, and adjusted.

Educational technology plays a more than enough role in our education system. Nowadays, quality of instruction cannot be achieved by the well-known "Talk and Chalk" method of teaching. The National Policy on Education (2004) section 1.3 provided that we have to turn to educational technology as a necessary strategy in educational pursuits. Educational technology has effectively proved a useful companion to the teachers and learners. Educational technology devices are facilitators of knowledge. Because there is hardly any course or subject matter which could not be taught effectively through the television, radio talks or discussion and debates on topics in education which the talk could be on career or subject combinations which is one of the important roles of educational technology.

No country will rise above the level of its education; therefore, educational technology has great relevance in our education system as it affects the methods, materials, machines, teachers, and students in the teaching and learning process. The provision of the National Policy on Education stated above confirms the relevancy of educational technology in our education system.

Negative Effects of Educational Technology in Post Primary Institutions in the North-East Zone, Nigeria

Technology has affected every aspect of human life. Classroom teachers are using technology in the classroom more frequently than ever before. When using any product of technology, teachers must be aware of the potential hindrances technology can bring to the learning process. Some negative effects of technology in today's classroom are that it can hinder meeting the desired goal if not wisely used. The effects are sometimes positive but there are also negative effects. This has opened a room for discussion by academics that, there are serious crisis in the use of educational technology in our schools. Ukeje (1991) holds that it has to be recognized and appreciated that there are serious constraints to educational and efficient utilization of educational technology in the new system of education. The constraints as he further points out include:

1. **Organizational structure:** The national policy on education has emphasized the development of Science and Technology but bureaucratic authority pattern and lack flexibility in the curriculum development process constitutes an impediment to educational technology.
2. **Inadequate financial backing:** Finance is the heart of effective actualization of educational technology, inadequate financial backing constitutes a problem. There are various instructional materials that can be produced locally by teachers for effective teaching and learning but due to financial difficulties of the school and negligence on the part of the government and private individuals and organizations most of the schools cannot afford the cost of production of those materials that are very vital in the teaching and learning process.
3. **Inadequate training:** Training makes teachers to be perfect lack of it will hinder them from good production and usage of instructional materials.
4. **Enrolment policy:** The need for education is growing to unpredictable stage and it can be seen from the rate of enrolment in to primary and post primary schools of the state yearly. The growing number of enrolment to unpredictable stage has effect on proper usage of educational technology in schools of the area under study. The teacher therefore, faces difficulty in using some materials due to the large number of students. Instead of 35 to 40 students in a class, the classrooms are overcrowded by 80 to 100 or more students per class considering the over rowdiness, how can a teacher effectively and efficiently handle the class and use some instructional materials for instructional purposes, accordingly.
- 5.

Effects of Good Usage of Educational Technology for Effective Teaching and Learning Process

Effective and efficient use of instructional materials in the classroom to achieve the educational objectives is what good usage of educational technology in this context refers to. Therefore, teachers need to be familiar with effective use of technology to make delivery of information more real, practical and concrete to the learners. Using educational technology in solving educational problems is un-escapable that is why teachers need to be effective in all way round. Isha (1993) points out that use of educational technology has become necessary because numerous problems we have in our educational system. To him in using educational technology to solve to solve the problems facing our educational system, teachers need to be exposed to an effective use of technology so as to make their delivery of information more real, practical and concrete to the students.

Studies have shown that effective use of educational technology enable teachers to be more systematic in designing carrying out and evaluation of the total teaching and learning process in terms of specific objectives. Improvisation is an important aspect of education especially in this era of global economic meltdown. Therefore, teacher need to be exposed to the use of local resources for the improvisation of instructional materials especially in this period of economic hardship to provide adequate instructional material for effective teaching and learning in the post primary institutions of the state. This is because teachers act and ability to create produce instructional materials with local materials helps in quick, fast, intellectual development and encourages the use of available materials for the teaching and learning process. This will rapidly upgrade learning standard and encourage self-reliance in the provision of resource materials. Likewise, it assists a lot in having proper management and coordination of the available resources in order to have a successful teaching and learning situations. Though accuracy may not be up to the desired level but aims are achieved through periodic practice and production. For instance, a resourceful teacher can use calendars and almanac in place of card board papers. For specimens and models the teacher can involve students in bringing or making them with materials within and around the school or community. The students may be asked to bring the materials to the school so that the production will be a collective responsibility. The collection and construction of specimens and models provide pupils with excellent opportunity for participation and realistic experiences. Nigeria has many opportunities in the area of improvisation of resource materials due to the fact that God Has blessed the country with different types of resources and they can be used to improvise most of the teaching learning resources. By way of illustration flat rock can be used in place of chalkboards and coloured soils or charcoal can be used as chalk. When improvised teaching materials are used in the act of teaching and learning, they form the basis of psychological theory of learning benefit which rewards are recognized as a means of making learning pleasurable, encouragement should be a better idea for improvisation as an alternative for achieving goals whenever imported ones are out of stock.

Problems and prospects of Teacher Education, ICT and Educational Technology in Nigeria in the 21st Century

Problems of Teacher Education in Nigeria in the 21st century

Teacher Education as a programme has some challenges in Nigeria in the 21st century the following are some of them:

Salary Variation: in some states Teachers Salary vary if compared with some professions. This has negatively influenced Teacher delivery and students' achievement.

Funding: Lack of proper and adequate funding is one of the problems of Teacher Education in Nigeria. This has negative effect in the programme in terms of the production of well skilled teachers in the country.

Improper Recruitment: government at all levels, private school proprietors and other interested hands sometimes recruit staff that are not professionals in the teaching avocation. This has badly affected student achievement due to lack of efficient delivery.

II. PROSPECTS OF TEACHER EDUCATION

Teacher Education

Teacher Education has prospects and to mention just a few it has provided opportunities of producing highly effective teachers in the country. It has also encouraged the spirit of enquiry and creativity among teachers in the country. Teacher education in Nigeria has help teachers and teachers to be to adapt into social life of the community that they live in and beyond.

Problems of ICT

Poor Funding: Most of Teacher Education Institutions in the country are faced with poor funding and this has negatively influenced proper usage of Information Technology in the institutions.

Poor adaption of ICT by Teachers and Students

Up to this time some Teachers and Students are yet to adapt fully the use of use of ICT devices in their day to day and academic activities. This is one of the problems of ICT in the Nigeria Teacher Education Institutions.

Poor Networking

There is poor network in most of Teacher Education Institution in Nigeria there by bringing difficulty in effective and efficient implementation of Information Communication Technology in Nigeria.

Poor Power Supply

There is poor power supply in most of teacher education institutions in the country and this is a great problem in the utilization of Information Communication Technology in the institutions.

Poor maintenance Culture

Maintain the Information Communication Technology device is another problem due to poor maintenance culture of the tools by some of the teacher education institutions.

Prospects of ICT in Nigeria

Information Communication Technology has opened many doors of opportunities to students, Teachers and all other interested hands. It has socially given opportunities for interaction among students, Teachers and other professionals in the field of teaching and learning. ICT has provided opportunities politically to its users and thereby give room for exchange of views, ideas and understanding. It has also help the country economically for it provides employment opportunities to a reasonable number of citizens.

Problems of Educational Technology

There are some problems confronting Educational Technology in many ways and the following are some of them with regards to Educational Institutions in Nigeria:

Professionalization of Teaching: this has affected teachers in their expected roles in the community as teaching is turning to be a dumping ground of schools', colleges' and universities' products that are not teachers by profession. This has become one of the problems of educational Technology in Nigeria.

Shortage of fund: this has affected both teacher education and educational technology. The education sector is developing rapidly but the required allocation in terms of fund is yet to be realized and this has negative effect on proper implementation of Educational Technology in our schools. UNESCO recommended 26% of the entire annual budget to education but far below this percentage used to be allocated. This means there will be a problem in terms of implementation due to scarcity of funds.

Prospects of Educational Technology

Educational Technology help both teachers and students in generating creativity leading to critical thinking as educational technology has to do with man, machines, methods and materials. It also encourages teachers and students to learn at their own pace. Educational technology reduces the role of the teacher by substituting it with some material for the facilitation of teaching and learning

III. RECOMMENDATIONS

The following recommendations were proffered for to have better Teacher Education, Information Communication Technology and Educational Technology:

- i. Enough fund should be provided to cater for Teacher Education, Information Communication Technology and Educational Technology.
- ii. Training and retraining of staff should be given more consideration so that there will be efficiency in terms of delivery.
- iii. Network Connectivity should be improved so that ICT and Educational Technology devices would be reasonable used.
- iv. Power Supply should be improved so that all the necessary devices would properly be used.

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