

EDUCATIONAL TECHNOLOGY AND FUNCTIONAL EDUCATION FOR NATIONAL DEVELOPMENT IN 21ST CENTURY NIGERIA: SOME CRITICAL ISSUES

By

CELINE NWADI ETESIKE

*Department of General Studies Education (GSE),
Federal College of Education,
Eha-Amufu.*

Abstract

The importance of Science and Technology in the new world order especially in the education sector cannot be over emphasized. The products of modern technology have the potentials to transform the educational landscape of Nigeria at all levels. The magnitude of this transformation is felt more at the instructional process. This paper titled: Educational Technology and Functional Education for National Development in the 21st Century Nigeria: Some Critical Issues explained the concept of Educational Technology. It further highlighted the relationship between educational Technology and Functional education. The paper also looked at the relationship between educational Technology and National development. It also highlighted some of the critical challenges facing Educational Technology, functional education and National development. The paper equally went ahead to give the ways forward which include Teachers being sent on trainings and seminars for the effective utilization of educational technology resources.

Advancement in science and technology and their applications in various areas of human endeavour especially in the educational sector have yielded rich dividends. These dividends are more pronounced in almost all matters related to the organization and management of the processes and products in education. The roles of science and technology in teaching and learning cannot be over emphasized. It is rapidly becoming one of the most important and widely discussed issues in contemporary education policy (Rosen & Well, 1995 and Thierer, 2000). It is a generally accepted fact among education specialists that when properly utilized, science and technology and their products hold great potentials to advance tremendously, the teaching-learning process. More so, they have the capacity of shaping the work force opportunities. The applied aspect of technology in the field of education, well known as Educational Technology has a tremendous capacity to provide the best possible output in the process of education for both teachers and learners.

Pristine

Educational Technology

Educational technology in terms of terminology and structural composition may carry out two basic components namely ‘education’ and ‘technology’. Although both components are in a continuous process of evolution, the emphasis here is more on the evolutionary trend of the second component that is ‘technology’. This is simply on the ground that Educational technology as a course of study has its fundamental concern with the task of identifying the most suitable, appropriate and developed technology (both hardware and software) for serving the educational needs and purposes of the students and the society at a particular time and place (Mangal & Mangal, 2009). It is a matter of fact that all over the world, there has been a continuous shift in the nature of the utilization of technological means, products and measures for advancing educational products and processes. This is also dependent and determined by the type and nature of excellence attained by the members of the societies in terms of scientific, philosophical, psychological and technological advancements. This is actually one of the reasons why there have been a continual shift in the modes and means of technology being used for serving the course of education in different parts of the world and in different periods of human history and civilization.

Educational technology has been seen as the latest innovation in our educational practice. A lot of efforts have been made to define it. Abimbade (2006) defined Educational technology as “a field involved in the facilitation of human learning through the systematic identification, development, organization and utilization of learning resources and through the management of these processes”. To Aniah and Tukura (2011), Educational Technology is “essentially concerned with finding solutions to problems of teaching and learning in education through the application of appropriate media or modern technologies especially electronic media (hardware and software devices)”. Educational Technology is concerned with the systematic application of science and technology in the field of education and thus may be defined as the application of technology to education in order to further the course of the latter. Just as science and technology help in carrying out the practical task in general, Educational Technology helps in providing efficiency to the task of teaching and learning. According to Elekwa and Rock (2012), the American based Association of Educational Communication and Technology (AECT) 1979 came forward with a definition that is more comprehensive, concise and lucid. It goes thus:

Educational technology is a complex integrated process involving people, ideas, devices and organization for analyzing problems and devising, implementing, evaluating and managing solutions to those problems involved in all aspects of human learning.

Educational Technology is a complex process because it is not just a matter of gathering information from textbooks and writing lesson plans. It also involves identifying and defining problems, selecting options, gathering relevant information from colleagues and other sources. It also involves continuous monitoring and controlling solutions to educational problems. Educational technology involves people not just students and teachers but resource persons from relevant fields within the

society. It also involves resources which may include complex devices such as computers and other modern ICT resources.

Educational Technology and Functional Education

Education world over has been recognized as a veritable and an indispensable instrument and investment for development. No nation can achieve any meaningful development without education. It is education that holds the key to social, economic, political, technological and even human and over all national development. The United Nations Education, Scientific and Cultural Organization (UNESCO) as cited in Ifelunni (2006) at its 27th session of the General Congress identified education as “a tool for the development of all human potentials which is the most powerful lever for shaping the future”. The ability of man to live satisfactory and worthwhile life depends to a large extent on certain factors such as ability to sustainably explore and functionally derive and utilize the available resources of nature. To achieve this feat, there is an urgent need for functional education of members of the society. Etesike (2012) defined functional education as “a practical or pragmatic education rather than a decorative education”. It is the education that will yield positive results for both the individual that acquired it and the society at large. It is the education that is geared towards the development of the human resource potentials of the society. To realistically live and appropriately face daily challenges prevalent in one’s immediate environment, man needs a functional education to be developed and appropriately equipped. Functional education need to be designed to prepare and equip members of the society for an acceptable, profitable and worthwhile life in any community that they may find themselves. It is only a functional education that will equip man with the appropriate skills that will enhance his productivity in the society. The big question remains thus: How can a functional education be achieved? This is where Educational Technology comes in. Educational Technology as earlier stated is one of the latest innovations in our educational practice. It provides technical guidance and solution to the problems of education. Communication is an essential and indispensable ingredient in the teaching-learning process. Educational Technology plays an effective role in the communication between teacher and students. It encompasses the total teaching and learning process involving such elements as: specification of goals and behavioral objectives, analysis of the characteristics of the learner, selection and organization of the contents or subject matter to be learned, methods and strategies for the presentation of the content, use of aid materials, software and hardware, mass media and communication technique, effective arrangement of learning situations and learning environments, effective classroom control and management and continuous feedback and evaluation of the results.

Educational Technology as some people erroneously believe is not limited to the use of audio-visual aids and does not symbolize merely educational hardware such as the sophisticated d\gadgets and mechanical devices used in education. For effective management of the total teaching-learning process, educational technology utilizes the results of all good experiments and researches in the field of human learning and the art

Pristine

of communication and employs a combination of all possible human and non human resources to achieve the desired education objectives (Mangal & Mangal, 2009). When the goals and objectives of any educational process are achieved, functional education is ensured.

Educational Technology and National Development

There is a universal agreement as to the roles played by education in the development of individuals and the society at large. Education is an essential factor in human life and in virtually all aspects of human endeavor. All over the world, education is regarded as an important tool for achieving national objectives. It is a venture that every individual and every society needs because it is an indispensable instrument for both human and national development. Education improves the quality of human life and empowers people to solve all kinds of social and environmental problems. Education is the pivot on which the survival, growth and development of any nation rests.

Development is a process that affects virtually all aspects life in a society. To Ololobou (2003), “development is the transformation of the social, cultural, political and economic life of society to bring about an improvement in the quality of life of the people”. To Inyamah (2010), “for any nation to be termed developed, a high percentage of her citizenry must have been educated. That is transformed in every aspect of life”. To Krishna (1997), “there will not be a fundamental transformation in a society unless the individuals are transformed and this comes through education”. A nation’s over all development is inextricably tied to its education system. The federal government of Nigeria believes in the indispensable power of education towards the over all development of the Nigerian society hence in its National Policy on Education as cited in Abolade (2003), it stated among others thus: 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. There is need for functional education for the promotion of a progressive, united Nigeria, to this end, school programs need to be relevant, practical and comprehensive while interest and ability should determine individual’s direction in education.

To realistically live and appropriately face daily challenges and problems, man needs an all round functional education. Such education should be designed to prepare and equip man for an acceptable profitable and worthwhile life in any community that man may find himself/herself. To achieve this all important functional education in the 21st century Nigeria, Educational Technology becomes an imperative. Marshall McLuhan from July 21, 1911 to December 31st 1980 as cited in Inyang-Abia (2011) predicted in 1962 that “book is no longer the king and the world had long become a global village”. This assertion highlighted what obtains in the 21st century world over, where knowledge acquisition, information gathering and skills building had long gone digital beyond national and continental borders and far above the crude instrument,

Celine Nwadi Etesike

methods, means, processes and products of the 20th century. Human attitudes are currently being largely influenced and sharpened by international media, using gadgets, means and strategies designed and developed for information super highway. This situation equally highlights the indispensability of utilizing Educational Technology resources especially the ICTs in the education sector. According to Ibe-Bassey (2011), “ICT is a critical tool in educating, preparing and equipping learners with required skills for the global work place. It educates learners so that they can continually adapt to a work world of continuous technological innovations.”

With the effective utilization of Educational Technology in Nigerian classrooms, there is no doubt that the teaching-learning process will be more effective and learning will be facilitated. When this happens, the required and appropriate knowledge will be imparted and the desired skills acquired. Educational Technology resources especially ICTs are regarded as engine for growth and tools for empowerment with profound implications for education, change, socio-economic and national development. Wide spread use of ICTs (which is a product of educational Technology) generate a need for new digital skills and competencies for education and training, employment, self development which culminates into national development and participation in the society.

Critical Challenges Facing Educational Technology, Functional Education and National Development

Nigeria as a nation realized the indispensable nature of education which is clearly shown when the federal government of Nigeria adopted education as an instrument par excellence for effecting national development. Further more, in the formulation of the National Policy Education (NPE), the federal government of Nigeria equally realized the imperative of utilizing Educational Technology and hitherto stated in the NPE (2009) thus:

- 1 Each state and local government authority shall establish teachers’ resource centres. These centres shall be used for the development and testing of teaching materials.
- 2 Federal and state government shall set aside a pre determined percentage of their education funds to support educational research, development and innovations.
- 3 Government shall provide appropriate ICT facilities to ensure that the benefit of virtual library permeates all levels of education in Nigeria

From the foregone, the imperative of Educational Technology in 21st century Nigerian sector is not in doubt. However, there are still some critical challenges or barriers to the effective utilization of Educational Technology and its facilities. According to Inyang-Abia (2004), “these challenges or barriers are based on lack”. Inyang-Abia went further to identify that such lacks include those associated with awareness, qualified human resources, political support, media education, positive attitude, finance and technical know how. Etesike (2008) also identified lack of appropriate infrastructure as one of the challenges to the effective utilization of

Pristine

Educational Technology and its facilities in the education sector of the 21st century Nigeria. Ibe-bassey (2011) identified poor ICT policy and project management strategy as another big barrier or challenges the integration of Educational Technology in the Nigeria education system.

Other challenges include decreasing teacher professional development, little or no attention paid to Educational Technology resources development and increasing demand for financing the cost of Educational Technology and its facilities in the present day Nigeria classrooms. Education is an expensive and capital intensive project. This implies that adequate funding is one of the basic pre requisites for its success. Ngada (2003:13) fully supported the above view and noted thus:

Lack of enough funds has prevented the execution of meaningful projects in most of the education institution in Nigeria. Also the attitude of Nigeria administrators has affected the wise utilization of funds sent to such institutions. Most of the funds sent to such institutions end up in the pocket of some few, neglecting the project for which such funds are meant.

According to Okocha, (2008), “dearth of infrastructure, inadequate classrooms and offices, laboratories for teaching and research, shortage of books and journals are some of the problems that have beset the education sector in the present times”.

Conclusion

Education is the key to self, economic, social and national development. For any education system to bring about development, the learners must acquire knowledge and skills that will bring about desired changes in behaviour. This is effective teaching/learning process. The objectives of teaching are to help learners to develop their potentials so that they can become functional, pragmatic, productive and useful citizens to their society. For effective teaching/learning process to be actualized there has to be appropriate selection and utilization of Educational Technology resources that will facilitate the teaching/learning process, which will enable learners to achieve the desired objectives. This will ultimately culminate into knowledge and skill acquisition for employment, productivity and self reliance.

Nigeria as a nation is yet to fully embrace Educational Technology and also to effectively harness the benefits therein because of certain challenges that had been earlier highlighted. The Nigerian education system can still be re-engineered for functionality and development when Educational Technology and its resources are fully incorporated into the education system. All hands therefore must be on deck to ensure the full integration and incorporation of Educational Technology and its facilities into the daily classroom activities of Nigerian education system. When this is done, the products of the 21st century Nigerian classroom will surely acquire a functional education that will equip them with the required skills to develop their society.

The Way Forward

It is obvious that the Nigerian education system is faced with lots of problems which have made it almost impossible to achieve the primary goals of the education system. The good news is that something can still be done to salvage the already bad system. So far, the Nigerian government has shown great interest in issues concerning the education sector. Umar and Gbana (2004) observed that “government is actively involved in both the ratification and implementation of various international convention resolutions on basic education for all”. They had also set in motion, machineries for redressing the education imbalance between boys and girls. In most of our schools, at the various levels of education, there are on-going Millennium Development Goals (MDGs) projects which are all geared towards the realization of MDGs stated targets. In tertiary Institutions TETFUND (formerly ETF) is funding a lot of projects, giving grants and scholarships for international and local studies. All these are positive steps in the right direction. Further more; the following suggestions should be strictly adhered to:

1. There is an urgent need for a clear policy formulation for Educational Technology integration in all levels education in Nigeria;
2. Government should re-direct their attention towards the funding of Educational Technology facilities utilization in schools;
3. Necessary infrastructure for a successful integration of Educational Technology in schools should be provided in schools. Such infrastructures include education resource centers, ICT resource centers and ICT facilities. Electricity and power generating gadgets should be provided in schools for effective utilization of these facilities. Also to be provided include communication networks, conducive classroom facilities, libraries and recreation facilities to mention these few.
4. Education personnel should be well remunerated to enhance commitment and job satisfaction.
5. To ensure quality of teaching and learning activities, there should be training and re-training of serving teachers and other education personnel. The training and re-training can take the form of workshops, conferences, seminars etc. This will boost their knowledge base of contents as well as keep abreast with new knowledge and methods of curriculum delivery. Education workers especially teachers should be exposed to computer and ICT education because it is the in-thing in modern education.

References

- Abimbade, A. (2006). *Principles and practice of educational technology*. Ghana: Woeli Publishing Services.
- Abolade, A. O. (2003). The challenges and future of secondary school students in Nigeria. *Multidisciplinary Journal of Research Development*. 1(1) 2.

Pristine

- Aniah, A. & Tukura, C. S. (2011). Educational technology: the imperative of ICT improving tertiary education in Nigeria. *In the proceedings of 32nd International Conference of NAEMT*. 19th – 23rd September, Owerri.
- Elekwa, I. & Rock, O. E. (2012). *Foundations of educational technology*. Lagos: Logicgate Media Ltd.
- Etesike, C. N. (2008). *Harnessing ICT resources for effective implementation of UBE scheme in Nigeria*. A conferences paper presented at the 7th Annual National Conference of NARD, Abuja, 6th-10th October.
- Etesike, C. N. (2012). *The imperative of educational technology resources utilization in Nigeria classrooms for employment and productivity among Nigerians in the 21st century*. A conference paper presented at the 14th Annual national Conference of NAFAK, Auchi, 12th-16th March.
- Ibe-Bassey, G.S. (2011). *Human capacity building for ICT integration in teacher education in Nigeria*. A lead paper presented at the 32nd international Conference of NAEMT. Owerri, 19th-23rd September.
- Ifelunni, I. C. S. (2006). *UBE and nine years basic education: Human resources development and utilization*. Enugu State University of Science and Technology (ESUT), Enugu.
- Inyamah, C. K. (2010). *Education and the 7-point agenda for national development: Some critical issues*. A conference paper presented at the 12th annual national conference of NAFAK. Kaduna: 15th -19th March.
- Inyang-Abia, M. E. (2011). A welcome Address presented at the 32nd International conference of NAEMT, Owerri, 19th-23rd September.
- Inyang-Abia, M. E. (2004). *Essentials of Educational Technology*. Calabar: MFAM Services Ltd.
- Krishna, P. (1997). *Right Education for the 21st century*. [http:// www. krisha.org/ Right Education htm/](http://www.krisha.org/Right%20Education.htm/).
- Mangal, S. K. & Mangal, U. (2009). *Essentials of Educational Technology*. New Delhi: PHI learning Private Ltd.
- Federal Republic of Nigeria (2009). *National Policy on Education* Lagos: NERDC.
- Ngada, A. J. (2003). Challenges and future of teacher education in Nigeria. In *Multidisciplinary Journal of Research Development*. 1 (1), 13, March.

Celine Nwadi Etesike

- Ololobou, C. O. (2003). *Dysfunctionality in teacher education in Nigeria: Implications national development*. A conference paper presented at the 2nd Annual national conference of NARD, Asaba, 11th-15th August.
- Rosen, L. & Well, M. (1995). Computer Availability, Computer Experiences and technophobia among public school teachers. *Computer in Human behaviour*, 11, 9-31.
- Thierer, A. (2000). *Divided over the Digital divide*. Washington DC: Heritage Foundations.
- Umar, M. H. & Gbana, N. H. S. (2004). Girls education: An investment for the future. *Journal of Women in Colleges of Education. (JOWICE)*, 8, 128-135.