INSTRUCTIONAL TECHNOLOGY APPLICATION IN NIGERIAN CLASSROOM: CHALLENGES AND THE WAY FORWARD

BY

Aniah, A.

Department of Science Education

School of Science and Technology Education

Federal University of Technology, Minna

anthonyaniah@futminna. edu. ng

08036195385

and

Dr. C. C. Nsofor

Department of Science Education

School of Science and Technology Education

Federal University of Technology, Minna

08036783024

Abstract

The paper focused on instructional technology application in Nigeria classroom, challenges and the way forward. Education reforms call for a shift in instructional approach from a teacher centred to a learner centred learning environment in the educational system through efficient application of instructional technology. The world is driven by information and communication technology (ICT), if people will be relevant in this new dispensation, there must be the readiness to contribute significantly to the new world order of information, communication and technology. It is in this light that the paper defined technology and its' application in classroom instruction, it also defined educational technology, identified the challenges of application and the way forward. One of such remedy to effective technology application in the classroom was that government should provide alternative source of energy in addition to electricity power supply in order to have an uninterrupted operation of technological media during classroom instruction by making available stand-by generators in both urban and rural schools in Nigeria.

Keywords: Application, Classroom, Challenges, Technology, Nigeria, Way forward.

Introduction

Throughout human history, technology had made serious impacts on development by creating new ways of life in all sphere of human endeavor ranging from agriculture, education, financial institutions and information dissemination among others. Technology is the making, modification, use and knowledge of tools, machines and crafts e.t.c to solve a problem, improve on already existing solution to problem, perform a specific task or achieve a goal. Technology application in instructional process is regarded as instructional technology. Nsofor (2010) sees instructional technology as a component of educational technology which seeks to improve learning by ensuring the installation of efficient and effective instructional system and managing human and other resources optimally. It comprises of such components as teacher, subject matter and information communication and technology (ICTs), when these components, especially ICTs are efficiently manipulated and managed in the instructional process, learning becomes effective. Consequently, the need for massive use of information, communication and technology resources in classroom instructional delivery. Instructional technology is the application of technological educational media (audio and visual) in the classroom teaching and learning with a view to facilitate and enhance learners' comprehension of knowledge with ease, (Aniah, 2015).

Information, communication and technologies (ICTs) are product of technology. ICTs are wide range of technologies that is enabled by electronic means in the acquisition, storage, process, transmission and dissemination of information in form of text, voice, graphics and video. Liver pool (2002) explained that ICT is a generic term referring to technologies that are used for collecting, storing, editing and passing on information in various forms. Information technology is concerned with managing and processing information using electronics, computer software to store, process, transmit and retrieve such information. ICT is a critical tool in the classroom preparation and educating students with required skills for global workplaces. ICT makes it easier for teachers and students to access the most recent knowledge or relevant information. The impact of ICT on learning is the vision that it enables learning anywhere, anytime. With ICT, knowledge is not constrained by geographic proximity; it also offers more possibilities for sharing and retrieving of knowledge through educational technology devices.

Educational technology is a complex integrated process employed in the classroom teaching and learning using hardware and software devices. These technologies are a combination of audio and visual channels such as computer code, data, graphics, video and text. Although technology applications are frequently characterized in terms of their most obvious or innovative features such as high speed data line or videoconferencing. From the stand point of education, it is the effectiveness of the instruction delivered that is important rather than the equipment delivery it.

Instructional Technology Application in the Classroom:

The effective application of instructional technology in the classroom forms the basis for the acquisition of knowledge and skills required for the evaluation of learning outcomes in students. Application of instructional technology can enable new ways of teaching and learning (Abimbade, 2011). Traditional pedagogy paved way for the adoption of an emerging pedagogy enabled by

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information, communication and technology (ICT). This emerging pedagogy is characterized by active learning, collaborative learning, evaluative learning and integrative learning among others. ICT emerging pedagogy enhances interaction and co-operation among learners, teachers and experts irrespective of where they are. Application of instructional technology in the classroom is not all about ICT literacy, it involves the understanding and utilization of ICT applications and services for instance, how to search, process and evaluate certain information, access the reliability and trustworthiness of multiple sources of information. Application of instructional technology can change, improve, the skills of learners and prepare them for global economy and information society. For effective application of varieties of technology resources, teachers' need to develop criteria for selecting applications and skills in weaving them into broader instructional activities, strategies for allocating time for technology access among students and techniques for managing technology-based instruction within the classroom. All of these decisions need to be closely tied to issues in curriculum and the intended learning outcomes.

Technology applications requires a broader and deeper knowledge of the discipline than may be required by curricula and that assumed that teachers transmit a fix body of information. For the teacher to be successful, he or she must know the subject matter, function as a leader and manger of community of learners, be flexible, and have time for planning and preparation throughout the year. Many technology applications (e.g word processing, databases) offers teachers a window into the student's thinking, inquiry, and problem- solving processes. When students work is visible on a monitor or printout, teachers will have access to students' misconceptions, the ways in which they sort and categorize information, the relationships they form among ideas and the conjectures they make. Teachers need good diagnostic skills to take advantage of opportunities provided by the technology. However, good judgment about when and how much to intervene is important, stressing that intervention in students work at an early stage can be helpful (Newman, 1992).

Challenges of Instructional Technology Application in the Classroom

The technical demands posed by technology use are just a tip of the iceberg. Teachers must be able to select, adapt or design technology- enhanced materials that meet the needs of their particular students. Technology enhanced curricula often place new demands on teachers' subject matter knowledge and nearly always require them to take new roles as curriculum designer, team builder and coach (Barbara, 1995).

Lack of Qualified experienced Technology Teachers:

Joseph (2008) posits that despite advancement in technology and the advantages to be derived from its use in instruction, teachers in Nigeria classroom are yet to fully adopt their use in teaching and learning process, the author explained that majority of teachers have no adequate knowledge on how to operate and use the technology to facilitate learning because of lack of trained professionals and poor governance in the country. Bissong (2009) professor in geography, University of Calabar, called on Nigerian government to reverse its' non- interest on education and pay adequate attention to the sector as one of the most important area responsible for the rapid advancement of any nation in the world.

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Power Supply:

A major source of worry in education industry in line with technology application in our classrooms is inadequate electricity supply to enhance the operation and maintenance of available instructional media in our institutions of learning in Nigeria. Inspite of late president Umaru Yar'adua (2007) assurance to lunch a national emergency program on power supply, the sector has not witness any meaningful change to this moment considering it position as gaint of Africa, and 6th largest producer of crude oil in the organization of petroleum exporting countries (OPEC) and 5th largest US source of imported oil and 8th worldwide crude oil producer. It is indeed pathetic and even more disturbing because Nigeria cannot boost of stable and affordable power supply to put to use the available technological media that aid or support teaching and learning in our classrooms and also take care of other economic activities that enhances development.

The Way Forward

The following points could serve as the way forward in this paper.

Stable Power Supply to Schools:

Government should provide alternative solution in terms of electricity power supply in order to maintain stable operation of technological media during classroom instruction by making available stand-by generators in both urban and rural schools in Nigeria.

Need for Qualify Experienced Technology Teachers:

There is an urgent need of having on-site assistance through workshops training and seminars organized periodically to keep technology teachers abreast and in tone with the use of technologies in classroom instruction. Involvement in training and professional conferences in technology-related activities has brought many teachers recognition, not only within their schools but also at state, national and international conferences.

Rewards for Exemplary Technology- supported Activities:

Teachers can be influenced or motivated by reward structure when it comes to deciding where to place their energies. School leadership that values technology and education reform activities should be associated with more widespread and sustained emphasis in these areas.

Providing Technical Support for Technology Use and Maintenance:

Technical support is needed in schools where all or most teachers are using technology, particularly if new or experimental systems are involved or extensive use is made of computer networks. At least five kinds of technical assistance are necessary:

1. Help in planning for technology uses and acquisitions.
2. Training on how to use new hard and software.
3. Demonstration and advice on how to incorporate technology into instruction
4. On-demand helps when software problems or hardware failures arise.
5. Low-level system maintenance.

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Conclusion

The paper concluded that if challenges identified above are addressed and technology teachers are well trained in the act of technology applications in instruction, students will become motivated, level of comprehension and learning outcomes will be enhanced. Furthermore, to achieve comparable changes in the classroom through effective applications of technology resources, stake holders in education, policy makers, government and non-governmental organization should fund education if Nigeria classrooms are to catch-up with those of developed nations of the world such as USA and Japan in this new dispensation of ICT utilization particularly in the education sector.

Suggestions:

If the following suggestions are adhered to, students will benefit from instruction and classroom will be an interesting place to learn;

Government should make adequate provision for classroom technological instructional facilities and also ensure teachers and students are trained on their usage.

The main source of power (electricity) for stable operation of the instructional facilities should be given priority attention.

There is need for stand-by technical assistance staff attached to schools in order to facilitate maintenance when the need arise.

Technology teachers who excel in classroom use of technology instructional materials be rewarded to stimulate further productivity.

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