



RESEARCH ARTICLE

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

***Dr. Aniah, A. and Prof. Mrs. Nsofor, C. C.**

Department of Educational Technology, School of Science and Technology Education Federal University of Technology, Minna

ARTICLE INFO

Article History:

Received 19th April, 2020
Received in revised form
07th May, 2020
Accepted 29th June, 2020
Published online 26th July, 2020

Keywords:

Classroom Instruction, Challenges,
Technology Application, Way Forward.

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 i.e from theory to practice using information, communication and technology platform (ICT) learning environment in the educational system through efficient application of instructional technology. The 21st century education is driven by information and communication technology. Thus, this paper looked at instructional technology media and how they could be effectively utilized in classroom instruction in order to enhance students learning outcomes. It is on this premise that the paper defined technology and its' application in classroom instruction, it also identified the challenges of application and the way forward. Educational technology is defined in terms of classroom teaching and learning. The paper further suggested some possible ways for improvement in line with the title of the paper. One of such remedy to effective technology application in the classroom was that government should make provision through adequate funding of the sector to facilitate training and retraining of teachers in the latest techniques of instructional technology application in the classroom and also provide stand-by generators to schools in respective of location as source of energy in order to have a stable and uninterrupted operation of technological media during classroom instruction whenever there is power outage.

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 involves the knowledge and use of tools, machines etc 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. 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.

Review of Related Works: Nsofor (2010) defined 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.

***Corresponding author: Dr. Aniah, A.,**
Department of Educational Technology, School of Science and Technology Education Federal University of Technology, Minna.

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. 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 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.

Miller (2000) posits that technology based teaching is very essential and sees it as the most facilitative as a result of providing relevant examples and demonstrations; changing the orientation of classroom; preparing students for gainful employment; increasing the flexibility of classroom instructional delivery; increasing access and satisfying of public demands for efficiency. According to Miller (2000), the purpose of using technology in teaching is to give better value to students, this value should also impact on the learner's performance. 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, Nigeria, lamented on the state of education, he called on government to reverse its' non- interest on education and pay adequate attention to the sector as one of the most important and vital area responsible for the rapid advancement and transformation of any nation in the world.

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. In spite 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 giant of Africa, and 6th largest producer of crude oil in the organization of petroleum exporting countries (OPEC) and 5th largest US (United States) source of imported oil and 8th worldwide crude oil producer. It is indeed pathetic and even more disturbing because Nigeria cannot boast 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 greatest technological challenge in Nigeria institutions is how to establish a reliable cost effective internet connectivity. Issue of access to ICT networks need urgent attention to break this crippling access barrier confronting education in Nigeria. Some institutions have Campus Area Network (CAN) backed by wireless narrow band while others have only internet café with grossly insufficient computers based with 50:1 ration (fifty students to one computer). Web based education as a form of on-line, mobile and distance education requires reliable computer network broad band connectivity to interconnect offices, departments and centres to public internet via campus area network. High student enrollment, inadequate funding of university and lack of budget to exacerbate the problems of ICT infrastructure.

The Way Forward: The following points serves as the way forward in this paper.

Need for Qualify Experienced Technology Teachers: There is an urgent need of having experienced qualify teachers in Nigeria classrooms, this could be made possible through workshops training and seminars organized periodically in addition to in-service training programmes to keep technology teachers abreast and in tone with the use of latest technologies in classroom instruction.

Involvement in training and professional conferences in technology-related activities will enhance teachers' application of media in classroom instruction not only within their schools but also at state, national and international levels.

Stable Power Supply to Schools: When technology is discussed, power must be mentioned as source of energy to enhance uninterrupted operation of the media. It therefore holds that our classrooms should be provided with alternative energy source by making available stand-by generators in both urban and rural schools in order to maintain stable operation of technological media during classroom instruction whenever there is electricity power outage.

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 support assistance are necessary:

- Help in planning for technology uses and acquisitions.
- Training on how to use new hard and software.
- Demonstration and advice on how to incorporate technology into instruction
- On-demand helps when software problems or hardware failures arise.
- Low-level system maintenance.
- Nigerian government need to collaborate with NETWORK service provider in the country to extend their services to both urban and rural areas for access to ICT network and for effective internet connectivity to enhance media application in the classroom. School leadership that values technology and education reform activities should use reward structure to influence or motivate teachers that excel in classroom technology application.

Conclusion

Globally, technology application in classroom instructional delivery in the 21st century has become imperative because of its advantage of motivating students' interest and facilitating learning outcome. Furthermore, the paper also noted that if Nigeria classrooms are to catch-up with those of the developed world such as. United States of America (USA), Japan, India, China, etc in this new dispensation of ICT utilization in education, stake holders in education, policy makers, government and non-governmental organization (NGO) should show keen interest in funding the sector.

Suggestions

If the following suggestions are adhered to, students and teachers' will immensely benefit from use of technology and learning will become more interesting;

- Government should make adequate provision for classroom technological instructional facilities and also ensure that teachers and students are trained because they are directly involve in classroom teaching and learning.
- 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.

REFERENCES

- Abimbade, A. 2011. ICT in the classroom: Implication for e-learning. Proceeding of the International conference of *National Association Education Media Technology*. 3, 16 – 24.
- Aniah, A. 2015. Instructional technology application in Nigeria classroom: Challenges and the way forward. Annual National Conference, Institute of Education University of Nigeria, Nsukka.
- Barbara, M. K. O. 1995. Technology's role in education reform. *Educational Research and Improvement*, Washington, DC 20202. 184 – 186.
- Bissong, F. 2011. Educational Technology: The imperativeness of ICT in improving tertiary education in Nigeria. Proceeding of the 32nd International Conference, NAEMT, held 19th – 23rd in Imo State University, Owerri. 57 – 59.
- Joseph, O. H. 2008. Assessing the availability and utilization of instructional material in Kaduna Polytechnic. Unpublished M.Tech. thesis, Department of Science Education, Federal University of Technology, Minna, Niger State.
- Liver pool 2002. Information, communication and technology. *Journal of Education Media and Technology (JEMT)*. 16 (1), 141 – 144.
- Miller, J. 2000. Technology infusion and higher education: Changing teaching and learning. *Innovative Higher Education*. 24, 3.
- Newman, D. 1992. Technology as support for school structure and school restructuring. *Phi Delta Kappan*. 308 – 315.
- Nsofor, C. C. 2010. Effects of improvised media on secondary school student achievement in Biology concepts in Niger State. Ph.D thesis, Federal University of Technology, Minna, Niger State.
