

## **CHALLENGES AND PROSPECTS OF EDUCATIONAL TECHNOLOGIES AS TEACHING MEDIUM**

**<sup>1</sup>Dr. Sunday Ebhodaghe AKASI; <sup>2</sup>Professor E. A. ERWAT;  
<sup>3</sup>Oluwatosin Abiodun OLOGBOSERE**

<sup>1</sup>Federal Polytechnic, Ede, Osun State; <sup>2,3</sup>Lead City University, Ibadan, Oyo State  
<sup>1</sup>aksunebo@yahoo.co.uk; <sup>2</sup>erwat2002@yahoo.com; <sup>3</sup>oluwatosinologbosere@gmail.com

### **Abstract**

Educational technologies are ICT-enabled gadgets that give instruction to students in order to aid their academic performance. As a result of instructional delivery, students' knowledge, attitudes, and abilities should change in a systematic and well-organized manner. For today's creative, inventive, and highly curious learners and workers/professionals, traditional face-to-face classroom training with an instructor appears to lack the same level of flexibility as Educational Technology (ET). Using educational technologies to match worldwide best practices in instructional delivery in Nigeria, as a developing country, will be fraught with difficulties. This article addresses the underlying difficulties, challenges, and opportunities in the application of Educational Communication Technologies in order to achieve global competitiveness. Basic issues surrounding the use of Educational Technology, such as digital culture and literacy, ICT and teacher professional development, efficacy, resource constraints, cost, equity, and sustainability, were examined in order to give it credibility. Infrastructure, capacity development, and financial concerns were all investigated. The use of Educational Technologies, in line with Nigerian educational philosophy, allows for more flexibility in instructional delivery, encourages self-study, creativity, and imaginative thinking, and increases learners' self-sufficiency.

**Keywords:** Educational Technologies (ET), Instructional Delivery (ID), Challenges, Prospects.

### **Introduction**

In many aspects of life, the digital revolution has increased demand for information and communication technology (ICT) applications. In truth, technology has pervaded every element of human life, including education. In the classroom, modern technology is rapidly being utilised. The traditional instructor-learner approach (face-to-face) in the classroom is gradually giving way to an e-learning environment, in which students interact with learning materials, instructors, and other students from around the world via network technologies at various times in an online environment.

Use of Educational Technologies for instructional delivery is a revolutionary concept in the twenty-first century Information Age. To assist learning and improve performance, appropriate teaching facilities should be used. In the classroom, teachers can use these technologies to present students with a variety of new learning possibilities, allowing them to learn more successfully. According to Adaka (2020), educational technologies provide assistive technology and conjure up visions of high-tech devices whose employment in the classroom helps satisfy the needs of a diverse range of students.

Tertiary institutions' main goals are to "intensify and diversify their programs for the development of multi-level manpower in the context of the nation's needs," as well as to "instill physical and intellectual skills in learners to enable them to become self-reliant and useful members of society." Based on the foregoing, it is anticipated that the use of ICT in higher institutions will result in a professional workforce and self-reliant citizens in the twenty-first century who are knowledgeable in the use of new technologies.

Information and media literacy is a key indicator in 21st-century educational management because it ensures that students can recognize when information is needed, locate, evaluate, and use it effectively; critically explore the media as a major source of information; and produce representations in a variety of formats efficiently and creatively (Emeke, 2018). Students learning 21st-century skills through the use of Educational Technology should be able to engage in global concerns, learn from, and collaborate with people from a variety of cultures, groups, religions, beliefs, and lifestyles in an open and mutually respectful environment.

Educational Technology (ET) is utilized in instructional delivery to improve teaching and learning, according to studies in media and ICT in education, notably on the integration of digital media in education (Condle and Munro, 2017). Accordingly, research has traditionally focused on the audio-visual medium, but ET's influence has grown as other technologies have advanced, particularly the integration of computers into classroom learning. In order to establish a global footing in the usage of Educational Technology, Nigeria, as a developing country, must solve challenges and obstructions in education (ET). Barriers to effective educational technology utilization in instructional delivery must be taken into account. As a

result, it's vital to look into the difficulties and challenges surrounding the usage of Educational Technologies for instructional delivery in Nigeria's 21st-century tertiary education management. In order to reach this goal, this essay looked into the concept of educational technology, as well as the challenges and opportunities associated with its usage in instructional delivery.

### **Educational Technology as a Concept**

Educational technology is the use of electronic media to aid teaching and learning. It can also be characterized as the use of technical tools to investigate data, improve learning through construction, and improve teaching and learning efficacy (Januszewski,2021). People, procedures, ideas, equipment, and organization all play a role in understanding issues, planning, executing, and assessing teaching and learning. It has many facets, including a cyclical process using a collection learning tools (both physical and conceptual), as well as a multiple-node relationship between learners and instructional facilitators, as well as between learners themselves.

The goal of utilizing Educational Technology is to provide valuable assistance in the teaching-learning process so that the best possible results can be achieved with the available human and non-human resources while remaining cost-effective. There are also special needs programs that allow students with disabilities to use educational technologies to better their learning by integrating technology into education, where teachers make pedagogical improvements and overcome basic difficulties that special needs students confront. Furthermore, Educational Technology helps learners of all levels attain their maximum educational potential by offering new and innovative tactics that motivate and engage them. It also enhances access to a variety of learning resources, stimulates collaboration, employs a multimedia teaching method, and facilitates distance learning.

### **Instructional Delivery Concept**

A teacher's involvement in promoting or directing teaching and learning in a certain subject at a school is referred to as instructional delivery. According to Mgbodile (2021), this is

accomplished by the instructor producing lesson notes, acquiring teaching aids, implementing teaching tactics, and employing equipment in a timely manner to supplement the curriculum. According to Paulias and Young (2021), instructional delivery is a method of assisting learners in obtaining the quantity and quality of experience required to reach their maximum human potential. Instruction delivery and teaching are synonymous because both require a teacher to obtain all of the necessary materials in order to make teaching and learning more meaningful.

The instructor makes certain that all classrooms have appropriate learning opportunities and that education is delivered in a way that students can comprehend and enjoy. According to Haruna (2018), the primary and most important responsibility of a school teacher is to deliver instruction. The ability to lead in instructional supervision is the cardinal index of a school administrator's performance review, according to Carter (2019). According to Chika and Ebeke (2017), of the various elements influencing students' academic success, the most important intervening factor appears to be instructors' instructional delivery. Students should be able to learn as a result of how instruction is delivered. This is a long-term behavioral change in the learner. This is because, as teaching continues, the instructor instructs, indoctrinates, trains, and initiates the learner into something new at times, and at other times, he is involved in the adaption process and makes the student participate in it through the socializing process. Educating, indoctrinating, training, initiating, and adapting are all educational tactics that are included into the teaching and learning process with the purpose of influencing the learner's behavior. It indicates that good instructional design strives to organize and gradually improve and/or transform the learner's knowledge, attitude, and abilities.

Teachers strive for high standards by recognizing individual differences, emphasizing learners' responsibilities, employing a variety of pedagogies, fostering positive connections in all aspects of school and public life, monitoring and offering feedback, and monitoring and offering feedback. The teacher must be creative and possess appropriate pedagogical skills in order to achieve efficacy in instructional delivery. Content knowledge, instructional design skills, instructional delivery skills, instructional assessment skills, and course administration abilities are listed as five fundamental teaching talents by Arreola, Theall, and Aleamoni (2020).

In order to ensure efficient delivery, subject knowledge demands a solid mastery of the subject matter or course. This is crucial for efficient instructional delivery since it provides the teacher complete control over the distribution of ideas and concepts for the learners' comprehension and appreciation. Instructional design skills are required to balance objectives in a way that embraces the learner's culture, personality, freedom, Subject knowledge necessitates a thorough understanding of the subject matter or course in order to ensure efficient delivery. This is critical for effective educational delivery since it gives the teacher complete control over the distribution of ideas and concepts for the students' understanding and appreciation. To balance objectives in a way that supports the learner's culture, personality, independence, and life-long education, instructional design skills are required. As a result, both the instructor and the learner will be at the center of the goals. The teacher's ability to provide instruction allows him or her to make the best choices and use the most relevant material for each topic in order to explain complex issues.

Rather of believing that certain children are doomed to fail, teachers should use these characteristics to motivate and engage all pupils. They believe that if teachers utilize suitable pedagogical methods, any child may succeed in school, and that teachers will go to great lengths to ensure that each student succeeds in the teaching and learning process. It also means that, as stated in the National Policy on Education (2014), "all teachers in tertiary institutions must undergo training in methods and techniques of teaching," and that proper acquisition and application of these skills in instructional delivery will improve higher education management in Nigeria.

### **Issues in the use of ET for Instructional Delivery**

To communicate, generate, transport, save, and manage information, schools use a number of ICT tools. Educational technologies have become an intrinsic part of the teaching–learning process as a component of ICT. While chalkboards are being phased out in favor of interactive digital whiteboards and other learning tools in the classroom, students are viewing lectures on their laptops at home and using class time for more active involvement. Some challenges must be considered when incorporating modern technology into instructional delivery, especially in

a developing country like Nigeria. According to Tinio (2021), some of the factors to consider when implementing Educational Technologies are:

1. **Efficacy:** The instructional efficacy of Instructional Communication Technologies is determined by how and for what purpose they are employed. Educational Communication Technologies, like any other instructional tool, do not work for everyone, in every situation, or in the same way. The effectiveness of a program can be measured in two ways: increased access and enhanced quality.
2. **Accessibility:** This is defined as the number of students who can easily access and use various media technologies in the learning process on an individual basis, allowing them to comprehend and apply knowledge acquired in similar situations. The digital divide that occurs among kids during their school years has an impact on their employment prospects and exacerbates society's socioeconomic disparities.
3. **Improving quality:** In Nigeria, the impact of Educational Communication Technologies on classroom instruction has resulted in a greater standard of education. Increased results on standardized examinations and greater attendance in the use of ICT technology in the classroom, according to data from a study done by the author, give significant evidence of effectiveness in increasing education quality. In contrast to Fouls' findings, distant learning's use of computers, the internet, and related technology has garnered mixed evaluations. The focus is on how to employ Educational Communication Technologies to improve instructional delivery and achieve outstanding outcomes in Nigerian Higher Education.
4. **Long-term viability:** One of the most difficult aspects of implementing ICT-enabled educational projects or programs is ensuring their long-term viability. It is critical to be able to maintain and use technical facilities for an extended period of time. When planning for the usage of technology facilities, higher education institutions must consider the long-term viability of those facilities. Third-world countries have seen a major drop in the adoption of new technologies as a result of high maintenance costs and the hiring of mostly foreign employees. Although cost and financing are limiting

- issues in the long-term viability of educational technology in Nigeria, other problems were raised, including technological, social, economic, and political concerns.
5. Long-term technical viability: This refers to the selection of technology that will be effective throughout time. Planners must be mindful about the risk of technical obsolescence in a quickly evolving technology world. The learning objectives, on the other hand, impact the decision to use a certain technology in order to accomplish the desired educational outcomes. Additionally, when making technological decisions, planners should consider the availability of spare parts and expert help to guarantee that the technology is maintained. It's never a good idea to find yourself in a situation where you can't acquire the assistance, parts, or power you need.
  6. Social sustainability: This entails establishing a sense of belonging in the local community to the new venture. The school does not operate in a vacuum, and for an ICT-enabled initiative to succeed, all stakeholders, including parents, government officials, and corporate leaders, must have a sense of ownership and belonging. Stakeholders can provide technical assistance at a low cost to some extent. New technology advances can be sustained if everyone who is impacted by them, whether directly or indirectly, understands why they are being introduced, the ramifications for their life, and what role they can play in ensuring their success. Educational Communication Technologies (ECT) and other ICT-enabled initiatives must eventually meet community needs.
  7. Policy and leadership sustainability: This refers to the issues of policy and leadership. Change resistance is a severe threat to ICT-enabled projects. If teachers, for example, refuse to adopt Educational Communication Technologies in their classrooms, such ICTs will struggle to gain momentum, much less sustain it over time. Due to the inventive nature of ICT, leaders must have a deep understanding of the innovation process as well as the ability to arrange plans and actions efficiently to assure the project's success in the school.

## **Education Technology Challenges**

The efficient utilization of ICT-enabled programs in Nigerian higher education is hampered by numerous obstacles. According to Albert (2016), these difficulties are divided into three categories: infrastructure, capacity building, and financial concerns.

1. Issues with infrastructure: Educational technology is heavily reliant on a country's national telecommunications and information infrastructure. Policymakers and planners must carefully assess structures to house available ICT equipment, electricity availability, and ambiguity concerning ICT forms before commencing any ICT-enabled activity. In older school buildings, considerable modification would be required to provide correct electrical wiring, heating/cooling, ventilation, safety, and security.
1. 2.Capacity-building difficulties: Teachers' technical abilities, educational administrators' abilities, technical support professionals' abilities, and content creators' abilities are all included in this list.
2. Issues with infrastructure: Educational technology is strongly reliant on a country's national telecommunications and information infrastructure. Policymakers and planners must carefully assess structures to house available ICT equipment, electricity availability, and ambiguity concerning ICT forms before commencing any ICT-enabled activity. In older school buildings, considerable modification would be required to provide correct electrical wiring, heating/cooling, ventilation, safety, and security.
3. Teachers must be able to master individual apps, integrate them into current curriculum, make curricular changes related to technology use (including changes in instructional design), adapt their roles, and grasp educational philosophies. Pre-service teacher preparation should address these skills, which should subsequently be built upon and reinforced in the classroom. Even the most seasoned ICT instructors must update their skills to keep up with the latest innovations and best practices. This is done to make teachers more effective in their classroom tasks as the learning process becomes more learner-centered.
4. Financial stumbling blocks: Integration of ICT-based education programs in higher education demands significant capital investments, and developing countries like

Nigeria must be cautious when determining which model to utilize when considering economies of scale. "When it comes to incorporating information technology into education, particularly for instructional delivery," says the author.

### **Prospects of ET for Instructional Delivery**

Educational Technology in Nigerian tertiary institutions will increase instructional delivery and educational quality. Some of the benefits of using ICT-based technologies include:

1. Empowers students: The employment of Educational Communication Technology will assist in the development of individuals who are self-reliant and important to themselves, their society, and the country's overall growth.
2. Encourages creativity and innovative teaching and learning: Using Educational Communication Technology, curriculum content teaching and learning can become more creative and inventive in the twenty-first century, as learners remember 80% of what they see and do.
3. Flexibility: Educational Communication Technology would enable the transmission of a wide range of curricular content to learners, allowing the Nigerian educational conceptual framework to be formed on the basis of equity. To that degree, it will assist teachers and students in simplifying and concretizing teaching-learning.
4. Increases instructional quality and scale economics: By merging Educational Communication Technology with other teaching approaches, lecturers in higher education and other teachers could create new ways of deploying their resources.
5. Produces a well-educated workforce and happy citizens: The use of ICT-based instructional delivery technologies, such as Educational communication Technology, would help to create a workforce and satisfied citizens with knowledge and skills that would enhance knowledge transfer and contribute to the revolutionization of the educational system. Using Educational Communication Technology to offer curricular content in Nigerian institutions will not only help to make teaching and learning more dynamic, but it will also allow students to reap the benefits of a more effective teaching and learning style.

6. Increases self-study: Incorporating ICT-enhanced devices into the classroom, such as Educational Communication Technology, promotes intrinsic motivation, self-study, and the start of organized active learning.
7. It piques students' interest: To achieve the foundations of education, ICT-enabled instructional technologies, such as Educational Communication Technology, will aid learners in creating a situation or atmosphere in which curiosity is aroused, imaginations are stimulated, interest is generated, viewpoints are enlarged, and attitudes are changed.

### **Conclusion**

It is impossible to overestimate the importance of ICT-enabled technology in Nigerian tertiary institutions. In the twenty-first century, using Educational Technology to give instruction at Nigeria's higher institutions is a sure way of thinking about the future by providing knowledge-based education in line with international best practices for a competitive workforce. However, through ongoing professional development workshops, seminars, and course collaborations with national and international institutions, much more effort needs to be done to build teachers' human capital. While it is costly to provide these opportunities for teacher professional development, the rewards in terms of better teaching quality, institution reputation, and more effective learning far outweigh the costs.

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