
INFORMATION AND COMMUNICATION TECHNOLOGY: THE LEADING WAY FOR TEACHING AND LEARNING IN NIGERIA**ORIM, RICHARD EKONESI (Ph.D)**Department of Science Education,
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This paper examined information and communication technology as the leading way for teaching and learning in Nigeria. Consequently, various areas such as raising standard, educational management, classrooms practices, evaluation, teachers training and academic performance with information and communication technology (ICT) were looked at. The paper therefore, concluded that ICT in education depending on the purpose and usage could improve the knowledge with positive learning. The researchers suggested that teachers should be sufficiently equipped with ICT knowledge and its application as different pedagogies relies on them for effective teaching and learning in particular and with reference to redesigned curriculum in generic approach.

Keywords: Ict, teaching, learning, evaluation**Introduction**

ICT is made up of the following: hardware, software, network, storage, processing, transmission, and presentation of information (voice, data, text, images) (World Bank Group, 2002). The investment made by Nigeria in ICT has grown significantly in recent years due to its role in our educational system. As noted by the UN Secretary-General Kofi Annan, ICT has the power to “unlock” doors in education and also “lock” doors in the case of security.

Effective lesson delivery is the key to good academic performance in all subject areas. For teaching and learning to take place, the use of relevant materials, assessment of information, effective means of evaluation, adoption of appropriate teaching methods and classroom management skills must be an agent of change in modification of behaviour (Mkpa, 2009). Instructional activities at all levels are greatly affected today by Information and Communication Technology (ICT). Therefore, ICT has the potency to make the task

of the teacher fun rather than drudgery, motivate and engage students in the instructional process thereby making the classroom edu-entertainment studio.

Today, basic computer education has become pertinent; to enable every citizen to be able to access and apply needed information in every field of endeavour. Bransford, Brown, and Cocking (2000) revealed that information and communication technology (ICT) could help students to develop their competencies needed for the current globalization. This is because ICT can help students to develop their skills, boost up their motivation and widen their knowledge and information (Grabe & Grabe, 2007). It also gives teachers ample opportunity to prepare for effective lesson delivery. It therefore means, what to teach, how to teach and how to learn, hitherto serious problems; can be resolved through the application of ICT and this requires a decisive and concerted effort in the area of information search.

Instructional delivery with information and communication technology (ICT) has been yielding positive results by way of improving academic performance in all subject areas (Kosoko-Oyedeko and Adedaja, (2012). This may be so because ICT has turned from being a mere technology of communication and information to a curriculum creation and delivery system for teachers and learners. Information and communication technology (ICT) can transform the way and manner education is delivered. The use of ICT enhances democratic interaction with a collaborative spirit and makes learning a social process in all areas of life (Yusuf, 2012). Information and communication technology has multi-dimensional potentials to individualize learning, ensure productive interaction of learners and provides opportunity for access to education irrespective of position, location, class and age.

Information and communication technology (ICT) is regarded as one of the basic building blocks of modern society (Daniels, 2002). Though computer and its applications play an important role in modern information management and technologies. Pelgrum and Law (2003) opined that 'computers' is replaced by 'IT' (information technology) indicating a shift from computing technology to the capacity to store and retrieve information.

For effective learning to take place, emphasis should be laid on capabilities with a primary concern on how the information will be used than seeking for the output. Therefore, learning outcomes should be based on competency and performance-based curricula that makes proper and consistent use of these technologies (Oliver, 2000). Technology is dynamic in nature therefore; integrating it into education is a complex task. ICT integration and implementation is a complex process, which requires strategic planning by the policy and decision makers (Hashim, 2007; Ghavifekr & Sufean, 2010).

In education, teaching and learning using technology is important because it encourages students learning ability positively leading to a reform in their general life and academics when a proper pedagogical strategy is employed. ICT is a powerful tool for extending educational opportunities either in a formal or informal way to the less educated and disable as distance learning makes use of it (Wikipedia, 2016).

Technology may help dyslexia students by increasing their confidence and integrate anti-social students thereby making them efficient and effective in and out of the classroom. Manoucherhi (1999) in a US study concluded that the lack of computer use is

due to lack of experience and access to educational software: lack of adequate professional training and lack of professional support in the use of computers in teaching instruction.

Despite its role in transforming and uplifting the standard of educational system in Nigeria and the world at large, many people are yet to appreciate its value as a suitable means for instructional delivery. It is against this backdrop this paper is designed to x-ray ICT as the leading way for effective instructional delivery.

Problem of the study

In every facet of life, the knowledge of ICT is predominantly needed. But lack of ICT infrastructures and teachers' lackadaisical attitude to obtain the training to enable them to be vested in different pedagogies to match up with their counterparts in developed countries who are already using collaborative or interactive teaching method is a problem in Nigeria system of education.

This is also noticed in the poor performances of students in all levels of education in professional, terminal, promotional and qualifying examinations taken by students bearing in mind that no country's technology can rise above the educational attainment of its citizen (you cannot give what you do not have).

ICT and raising standard in Education

The introduction of computer in education has not only being found to improved access to learning by all and quality knowledge delivery; its application has also been felt in the teaching-learning process. The persistent use of technology to support students learning will continue to increase in our daily educational system because of its inherent potency to ease the task of the teacher and motivates students to learn. The quality and standard of education is expected to improve if ICT is embraced in every facet of education process. Yusuf (2007) reported that Information and communication technologies have been found to encourage active learning and support of innovative teaching as well as reducing the isolation of teachers, while encouraging teachers and students to become active learners and researchers. When adequately provided, ICT usage ensures immediate and regular access by both teachers and students to support curriculum coverage and implementation. With ICT, students and teachers easily read e-books and samples of examination questions and can even easily access resource persons, experts in research, mentors and professionals from any part of the world, which helps in boosting their performance and the standard in general (Noor-Ul-Amin, 2009). The introduction of computer in education has not only being found to improved access to learning by all and quality knowledge delivery; its application has also been visible in the teaching-learning process.

ICT and educational management

Policymakers play a fundamental role to bring changes in our educational system. Nevertheless, the task of policy designers is often impeded by poor access to needed information and policy resources. In a similar manner, policies often fail to succeed when viewed as mere symbolic gestures, hardware rather than instructional practice and pedagogy that need careful search for relevant resources (Tyack & Cuban, 1995).

According to Rajeev (2008) ICT can play a major role in reducing operational inefficiency and improving decision-making in many areas of governance by empowering the governing bodies to checkmate the process and progress of education at various levels. Timely integration of ICT into our curriculum through formal or informal education from the stage of curriculum design is therefore necessary as Nigeria is undergoing security, economic and political challenges (Orim & Ekwueme, 2011).

ICT and classrooms practices

The need to keep pace with the trends of development in the world is so urgent that any viable educational institutions in the world over would see the need to integrate Information and Communication Technology into the mainstream of the processes of teaching and learning as a priority and necessity rather than luxury. In the nearest future, it may be impossible to think of the teaching and learning process that is not supported by Information and Communication Technology directly or indirectly. Therefore, the integration of computer which is the major and most influential technology in the last millennium into education especially in the classroom could be beneficial in building students' capacity in technology (Kareem, 2015).

Realistically, the use of ICT could bring significant changes into classroom practice and perfect understanding by the students because difficult concepts are made easy by practicalizing them. Teachings become pleasurable when ICT tools like projector, simulation games, google search; you-tube videos among others are judiciously used. Innovative training with a supportive plan and policies are needed in a classroom for effective utilization of the ICT equipment by teachers/instructors (Orim & Igwe, 2017).

ICT and Evaluation

ICT has several impacts on students, teachers, schools, organizations, communities and nations. It can serve a very useful purpose in the area of evaluation. With the world gradually becoming a global village, countries of the world are constantly trying to employ every possible strategy to enable them keep tabs with the rapid change and advancement experienced in the world generally and the educational system in particular (Okey, 2015). The key vehicle that has been the driving force behind this rapid advancement in the world is Information and Communication Technologies (ICTs).

ICT enhances learning and mobilizes tools for examination, calculation and analysis of information. It provides a platform for students' inquiry, analysis and construction of new ideas/information with a view of playing a pivotal role in modern societies. Information and communication technology is used to improve access to education and quality of teachers training (Crison, 2004)

ICT and Teacher Training

Teachers are faced with the increasing demand to be more professional and highly capable of creating more realistic/engaging classrooms in order to responds to students needs in this digitalized time to create effective and innovative instructional materials and the teaching pedagogies (Hubbard, 2013). This call is to make teachers confident and

competent in the use of ICT for their professional and personal use. Restructuring the classroom to address 21st century skills is necessary to meet the needs of students especially at this time that Nigeria is faced with diverse challenges.

In traditional instructional settings teachers are seen as demigods where students are robots to be brainwashed by the formal. The incorporation of ICT in teaching-learning process can change the status of these principal actors in the instructional studio. Teachers are no longer dispenser of knowledge but proactive facilitator who only guides students to identify and solve their problems either ways. It has become inevitable to include ICT in teachers training instructions due to its relevance (Orim & Igwe, 2016).

Learning through ICT usage with teachers as an instructor refers to adopting new pedagogies in and out of the classroom. It calls for a careful dialogue between the teachers and the students who are prospective benefactors of ICT (Guidelines for Teachers training and Professional Development in ICT, 2007). Teacher's development should, however, maintain a balance between developing effective teaching strategies and increasing the knowledge and skills of every teacher in the use of ICT. Basic ICT knowledge and skills is necessary for every teacher, management, and administration. Teachers can directly implement the technology at a classroom level if they are professional trained to use ICT materials to enhance their teaching effectiveness. In developed countries, teachers are fully using ICT in all aspects of their professional life to improve their own learning and that of the students (Davis, 2003).

ICT and academic performance

It has been commonly accepted and proven that information and communication (ICT) is the engine drive of the 21st century and beyond as it has become an instrument that detects the tone and direction of the economy, education, health and culture, and so on particularly in developing countries. As it is always said that practice makes perfect, one important role of ICT in the academic performance of students is that it aroused their interest and they spend more time working at or practicing the skills being studied and tested than when they are at the receiving end alone (Orim & Igwe, 2017).

Information and communication technology constitute an input in the student learning process that should help produce a better learning output because what is sent into the system determines what comes out of it. Information communication technology can enhance learning by making education less dependent on different teacher quality and by making education available everywhere (Mbwesa, 2002). It brings about positive impact on learning and students' performance when integrated in the classroom during teaching.

Computers can therefore help by increasing the amount of time students spend on particular activities, by increasing pupils' motivation and engagement when doing these activities and by providing practice at an appropriate level.

Summary

The place of ICTs in education depends on how they are used and for what purpose. Like any other educational tool or mode of educational delivery, ICTs do not work for everyone,

everywhere in the same way. The role of ICT in education cannot be overemphasized; it is difficult to quantify the degree to which ICTs have helped expand access to education.

Shifting pedagogies, redesigning curriculum and assessment tools all contribute to the optimal use of ICTs in education and the society at large.

The hope of every country today is vested in ICT for a better future, but ignorance by policy makers has affected its usage (Lubis, Embi, Yunus, & Wekke, 2009).

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