

Information Communication Technology as A Tool for Improving Nigerian Education at All Levels: A Theoretical Perceptive

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Abstrak

Pentingnya dan integrasi peralatan dan fasilitas TIK dalam pengajaran dan pembelajaran sangat diperlukan di sekolah-sekolah Nigeria. Namun penggunaan TIK dalam pembelajaran masih mengalami kendala. Tujuan penelitian ini yaitu menyelidiki teknologi informasi dan komunikasi sebagai alat untuk meningkatkan pendidikan Nigeria di semua tingkatan. Jenis penelitian ini adalah penelitian kualitatif. Metode yang digunakan dalam pengumpulan data adalah studi dokumentasi, studi pustaka, dan observasi. Dalam penelitian kualitatif, instrumen pengumpulan data primer adalah peneliti mengamati, menanya, mendengarkan, menanya, dan mengambil data penelitian. Teknik analisis data yang digunakan adalah analisis deskriptif kualitatif. Hasil penelitian yaitu Nigeria mengalami masalah integrasi dan penerapan perangkat TIK karena banyak faktor seperti; fasilitas TIK terbatas di Sekolah Nigeria, Kurangnya tutor berpengalaman teknis, Masalah Listrik, Faktor Lingkungan, Mahalnya alat IC, dan Kurangnya keterampilan profesional. Penelitian ini menyimpulkan bahwa, upaya harus dilakukan oleh pemerintah untuk menawarkan solusi untuk masalah yang disebutkan dalam makalah ini, sehingga dapat meningkatkan pendidikan Nigeria di semua tingkatan. Peneliti meminta para pemangku kepentingan di bidang pendidikan untuk mendorong tutor, fasilitator, dan siswa, untuk mengembangkan sikap positif terhadap penggunaan perangkat TIK di semua tingkat pendidikan di Nigeria.

Kata kunci: Teknologi Informasi dan Komunikasi, Alat dan Pendidikan

Abstract

The importance and integration of ICT equipment and facilities in teaching and learning are needed in Nigerian schools. However, the use of ICT in learning is still experiencing problems. The aims of this study are information and communication technology as a tool to improve Nigerian education at all levels. This type of research is qualitative research. The methods used in data collection are documentation study, literature study, and observation. The primary data collection instrument is the researcher observing, asking, listening, asking, and taking research data in qualitative research. The data analysis technique used is descriptive qualitative analysis. The result of the research is that Nigeria is experiencing problems with the integration and application of ICT tools due to many factors such as; Limited ICT facilities in Nigerian Schools, Lack of experienced technical tutors, Electrical Problems, Environmental Factors, and Expensive IC tools, and Lack of professional skills. The research concludes that the government should make efforts to offer solutions to the problems mentioned in this paper to improve Nigerian education at all levels. The researcher asks education stakeholders to encourage tutors, facilitators, and students to develop positive attitudes towards using ICT tools at all levels of education in Nigeria.

Keywords: Information and Communication Technology, tool and Education

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1. INTRODUCTION

Education is an essential thing and cannot be separated in the life of the nation and state. The progress and retreat of a nation will be determined by the progress of the education of a nation. Through education, employees can develop their abilities to carry out their duties and work and carry out the given authority and responsibility. The educational system in Nigeria has been sub-divided into different levels mainly pre-primary, primary and tertiary Levels (de Oliveira et al., 2022; Kotirde & Yunos, 2015). The increasing development of educational system at all levels in this current dispensation brings greater demands on educational practitioners such as curriculum planners, evaluators, and teachers in their bid to move along with the information and communication technology of this 21st century (Aldiab

et al., 2019; Munoto, 2018; Ozdemir & Yirci, 2015). The importance of information and communication technology (ICT) in this 21st century is indispensable in teaching and learning. It can improve education quality, expand learning opportunities and make education accessible at all levels if education in Nigeria (Egielewa et al., 2022; Talebian et al., 2014). Information and communication technologies (ICT) are electronic technologies used for information storage and retrieval. Development is partly determined by the ability to establish a synergistic interaction between technological innovation and human values. The rapid rate at which ICTs have evolved since the mid-20th century, the convergence and pervasiveness of ICTs, give them a strong role in development and globalization (Atkin et al., 2015; Leonie et al., 2021). ICTs have a significant impact on all areas of human activity (Papoutsi et al., 2022; Sharma & Srivastava, 2020).

ICT stands for Information Communication Technology; ICT has been defined by scholars in various ways (Teguh & Ciawati, 2020; Yu et al., 2022). ICT is a generic term referring to technologies for collecting, storing, editing and passing on information in various forms. Information Communication Technologies are means of retrieving, processing, storing, retrieving and disseminating of information through the use of computer and other telecommunication facilities. More importantly, ICT deals with the ways these concepts work when put together. Thus, Information Communication Technology (ICT) is a diverse set of technological tools and resources used to communicate, create, disseminate, store and manage information (Androutsopoulou et al., 2019; Atkin et al., 2015; Talebian et al., 2014). These technologies include computers, the internet, broadcasting technologies (radio and television) and telephony. The following characteristics were listed: i. e It is abroad and fast changing subject e-Communication of data by electronic means e -Storing, retrieving, manipulating, processing and distributing of information Involves digital sharing of information through internal or external networks It is a technological tool for manipulating information or data (Blakely et al., 2020; Dosaya et al., 2020).

The field of education has been affected by ICTs, which have undoubtedly affected teaching, learning, and research (Marchlik et al., 2021; Wungguli & Yahya, 2020). A great deal of research has proven the benefits to the quality of education (Chen & Tsai, 2021). ICTs have the potential to accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Androutsopoulou et al., 2019; Kundu & Bej, 2021). In a rapidly changing world, basic education is essential for an individual to be able to access and apply information. Such ability must find include ICTs in the global village. The Economic Commission for Africa has indicated that the ability to access and use information is no longer a luxury, but a necessity for development. Unfortunately, many developing counties, especially in Africa, are still low in ICT application and use (Hamma & Mohammed, 2021).

New instructional techniques that use ICTs provide a different modality of instruments for students. ICT creates room for individualized instructions. In schools where new technologies are used, students have access to tools that adjust to their attention span and provide valuable and immediate feedback for literacy enhancement (Baya'a et al., 2019; Fernández-Gutiérrez et al., 2020; Talebian et al., 2014). Which is currently not fully implemented in the Nigerian school system (Torres-Díaz et al., 2022). ICT application and use will prove beneficial in improving Nigeria's educational system and giving students a better education (Eugenia et al., 2013; Kristinawati et al., 2018). Moreover, the use of ICT tools in Nigerian education at all levels in this present age has enhanced both the teaching and learning process and makes it. easy for the achievement of the teachers' set objectives. This paper is a theoretical perceptive that focuses on information and communication technology (ICT) as a tool for the improvement of education in Nigeria at all levels. i.e pre-

primary, primary, secondary and tertiary levels. This study aims to aim at information and communication technology as a tool to improve Nigerian education at all levels. It particularly dwells on the meaning of ICT, importance of ICT in Nigeria education and the problems militating against the use of ICT in Nigeria Education at all levels. Recommendations on the improvement of ICT are offered.

2. METHODS

This type of research is qualitative (Creswell, 2014). Qualitative research is research that emphasizes more on observing phenomena. *Qualitative methods* are methods that focus on in-depth observations. Therefore, using qualitative methods in research can result in a more comprehensive study of a phenomenon. This study investigates information and communication technology as a tool to improve Nigerian education at all levels. The method used in collecting data is the study of documentation, literature, and observation. Documentation study is one method of collecting qualitative data by viewing and analyzing documents made by the subject himself or by others about the subject. Literature and observation methods were used to collect data on integrating ICT equipment and facilities in teaching and learning, which is indispensable in Nigerian schools. In qualitative research, the primary data collection instrument is the researcher observing, asking, listening, asking, and taking research data. The technique used to analyze the data is descriptive qualitative analysis (Creswell, 2014). This qualitative research analyzes the descriptive data analysis technique and describes and summarizes events or phenomena from the data obtained through the interview process and direct observation.

3. RESULTS AND DISCUSSION

Results

The use of ICT has become an integral part of our educational system in Nigeria from the early years to university level, and it has contributed greatly to the learning style of both the teachers and the learners within and outside the classroom settings. Researchers too have found out that over 80% of the teachers in Nigerian nursery and primary school find it difficult to effectively tally their ICT instructional materials such as PC, audio-visual aids, slide clip, electronic white interactive board, and electronic conferencing materials and so on to the goals of their instructional objectives (Adarkwah, 2021). Improved secondary education is essential to the creation of effective human capital in any country (Bawono, 2021). The need for ICT in Nigerian education at all levels cannot be underestimated. In this technology-driven age, everyone requires ICT competence to survive. Organizations are finding it very necessary to train and re-train their employees to establish or increase their knowledge of computers and other ICT facilities (Polyanska et al., 2022). This calls for early acquisition of ICT skills by teachers and students in Nigerian education. The ability to use computers effectively has become an essential part of everyone's education.

Skills such as bookkeeping, clerical and administrative work, stocktaking, and so forth, now constitute a set of computerized practices that form the core IT skills package: spreadsheets, word processors, and databases. The demand for computer/ICT literacy is increasing in Nigeria, because employees realize that computers and other ICT facilities can enhance efficiency. On the other hand, employees have also realized that computers can be a threat to their jobs, and the only way to enhance job security is to become computer literate. The high demand for computer literacy, the teaching and learning these skills is a concern among professionals (Milenkova & Lendzhova, 2021). This is also true of other ICT components. ICT has proved to be a very powerful tool in education reform (Sáez de Cámara

et al., 2021). Based on this assertion, institutions in the last few years have been reviewing their mission, goals, strategies and operations in order to position themselves more effectively to meet the challenges of the 21st century. It is generally observed that ICT has replaced information technology (IT) because of its appropriateness and utilization in lending itself to principles, policies, administration and practices of globalization. Optimizing the use of ICT at all levels of education in Nigeria depends on understanding of how, what and when to use ICT tools.

There are several problems to the successful use of information communication technological tools at all levels of education in Nigeria, these are: limited ICT facilities in Nigerian Schools, Lack of technically experienced tutors, Problem of Electricity, Environmental Factors, High Cost of ICT tools, and Lack of professional skills. Limited ICT facilities in Nigerian Schools: Limited fund available to all levels of education in Nigeria have hindered the provision of needed facilities and infrastructure to promote ICT the use of ICT in teaching and learning. Most schools in Nigeria do not have ICT laboratory for training. Classrooms are equally not equipped for ICT usage. Thus, teachers and students do not have access to ICT tools within their schools due to the limited ICT facilities. The few available ICT facilities are mostly used for administrative purposes. Lack of technically experienced tutors: Most of the tutors / teachers in Nigerian schools do not have competence in the use or integration of ICT tools in their instruction. Majority of teachers teaches their students without ICTs and they have not developed competence in the use of ICTs.

Problem of Electricity: ICT tools are electrical equipment that requires electricity for operation. Electricity failure has been a persistent problem militating against the use of ICT tools at all levels of education in Nigeria. This however, hinders the few schools with ICT tools to use them regularly. Environmental Factors: Part of the problems militating against the use of ICT tools is the target population for whom the materials are to be used and the settings or vicinities where the learning should take place, the degree of satisfaction derived by learners in respect to comfortability of environment of that learning situation is of great importance. High Cost of ICT tools: The price of computer hardware and software continues to drop in most developed countries, but in developing countries such as Nigeria, the cost of computer is several times more expensive. Why a personal computer may cost less than a month wages in the United States based on research, the average Nigeria worker may require more than two years income to buy one. For this reason, the cost of computer is too high for many Nigerians to afford especially those in rural areas. ;

Discussion

Information and communication technology refers to collecting, storing, storing, and conveying information in various forms (Arokiasamy et al., 2015; Comi et al., 2017; Huda, 2020). Information Communication Technology is a means to retrieve, process, store, retrieve and disseminate information through computers and other telecommunication facilities (Das, 2020; Martínez-Gautier et al., 2021; Talebian et al., 2014). More importantly, ICT is concerned with how these concepts work when put together. Currently, the field of education is influenced by ICT, especially in research, learning, and learning. The use of ICTs can help link school experiences with work practices, strengthen teaching, and foster school change ((Leon & Castro, 2014; Nguyen & Doytch, 2021). In addition, the use of ICT can also accelerate, learn, and deepen skills (Baya'a et al., 2019; Mahdum et al., 2019).

Nigeria lacks information infrastructure and the human skills and knowledge to integrate ICT at all levels of education in Nigeria fully. Skills in using ICT are indispensable for activities to run smoothly (Edem et al., 2020; Gil-Flores et al., 2017; Zafar et al., 2022). To use Information and Communication Technology (ICT) in Nigerian schools, the need for locally trained workers to install, maintain and support these systems cannot be overstated.

There is an acute shortage of personnel trained in application software, operating systems, network administration, and local technicians to service and repair computer facilities. Those appointed to use computers in Nigeria do not receive adequate training. At worst, they receive no training at all levels of education in Nigeria. In Nigeria, most secondary school teachers do not have the professional skills to implement ICT in the curriculum. Therefore the traditional shock and duster approach still dominates at all levels of education in Nigeria. ICT skills are one of the main requirements for using technology in learning (Arrosagaray et al., 2019; Fernández-Gutiérrez et al., 2020).

In order to ensure that ICTs are widely adopted and used at all levels of Education in Nigeria, the following recommendations should be taken into consideration. First, Government should ensure that ICT policy statements are translated into reality. An ICT. policy implementation commission should be created at all levels of education in Nigeria. This commission should be funded and given the power to provide ICT facilities in the schools and monitor their use. Second, Nigerian schools at all levels should be made beneficiaries of ICT projects. Computer/ICT education should be made compulsory at all levels of education. That is, pre-primary, primary, secondary, and tertiary education. Third, Efforts should be made by Ministry of Education (at Federal and State levels) to post teachers skilled in ICTs to each school at all levels to impart ICT skills to the students. Fourth, Institutions and government should organize training sections, conferences, and in-service training for teachers in the use of ICT tools. Fifth, The Federal Ministry of Mines and Power should work towards stabilizing electricity supply in Nigeria. Sixth, Government should provide institutions at all levels in the country with adequate information communication technological tools.

4. CONCLUSION

The adoption and use of ICTs at all levels of education in Nigeria have a positive impact on teaching, learning, and research. Despite the roles ICT tools, most Nigerian teachers are yet to extensively integrate them for teaching and learning. Efforts geared towards integration of ICTs at all levels of Education in Nigeria have not had much impact. Problems such as limited ICT facilities in Nigerian Schools, Lack of technically experienced tutors, Problem of Electricity, Environmental Factors, High Cost of ICT tools, and Lack of professional skills.

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