
Adopting Information and Communication Technologies for Effective School Leadership in Nigeria

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Abstract

The birth of Information and Communication Technologies (ICTs) has brought a paradigm shift in every aspect of life including the educational system and has the capability to enhance the role of school leaders in Nigeria. The place of school leadership is complex with continuous evolution and it is expected to be technologically oriented in order to meet the contemporary educational needs and demands of the digital citizens who may be fed up with the repetition learning method. As technology advances and radically changes the world we are today, it is necessary that school leadership advances with it in order to achieve a realistic and effective educational sector in Nigeria. However, the pertinent question remains, are school leaders in Nigeria embracing the benefits of ICT to achieve effective leadership? This study explores the role of Information and Communication technology-based school leadership in enhancing effective teaching and learning that is sustainable. It is situated within the framework of the technology acceptance model and adopts library research methodology and therefore, makes use of secondary data by using contributions of communication scholars and education experts to identify and discuss how school leaders can integrate ICT in their roles to achieve effective teaching and learning in Nigeria.

Keywords: School, leadership, Information and Communication Technology, Tools

Introduction

Education is the key to development and one of the most important needs for the well-being of an individual, a society and a nation. This implies that education is a powerful instrument of progress, without which neither an individual nor a society can attain professional growth (Musibau, Afolabi and Loto, 2013; cited in Nwachukwu and Eneh, 2022). In 2015, the United Nations Educational Scientific and Cultural Organisation (UNESCO), along with the United Nations Children Fund (UNICEF), the World Bank, and other United Nations agencies, organized the World Education Forum in Incheon, Republic of Korea where about 184 member countries adopted the "Incheon Declaration for Education 2030" to transform lives through education by 2030. Its vision was to ensure inclusive and quality education to all and also facilitate lifetime learning opportunities,

(Ramakrishnan, 2023). However, achieving these goals is highly dependent on excellent school leadership that drives better learning outcomes.

School leadership is a form of transformational leadership style that dwells on advancement and delivering positive changes to educational institutions. It involves transforming the educational system and institutions and guiding students and other stakeholders to achieve their full potential (Al.Oraifan, 2021). Simply put, school leadership aims to get the best out of teachers and students. It facilitates access to quality education for all by improving curriculum content and teaching methods. School leadership is the foundation or pillar for improving the quality of education which is only possible when school leaders are committed to their values.

Pruitt, (2023) asserts that school leadership involves processes, decisions, and actions school leaders take to ensure a school achieves its goals. It involves setting direction, creating a culture of learning, managing staff, and ensuring the school is well-resourced and that students are improving. School leadership applies to all levels of academia, including kindergarten, primary, secondary and higher institutions of learning. School leaders include but are not limited to headteachers, deputy heads, heads of departments, principals, vice principals, deans, rectors, provosts, registrars, vice-chancellors, school administrators and special educational needs coordinators. School leaders are an integral part of education; their works define the school's vision, which in turn impacts student achievement. It is their responsibility to ensure that their school is providing the best possible environment in which educators can guide students to reach their potential. It is more than just managing a school or a department or faculty; it is about creating a vision, inspiring others, and fostering a culture of learning and improvement. Their roles include responsibilities that encompass both leadership and management duties (UNESCO, 2018).

Studies have found that school leaders who provide better management services have a positive correlation to student outcomes (Leaver, Lemos, and Scur, 2019). Other data has shown that school leaders who provide more instructional leadership increase teacher collaboration and a sense of purpose (OECD, 2020). By providing effective guidance, training, and working conditions to teachers, school leaders create the best possible

environment for learning (Jensen, Downing, and Clark, 2017; UNESCO, 2020a). Strengthening school leadership to improve teaching and learning is one of the strategies put forward to achieve target 4. c of the Education 2030 Agenda. Studies have also shown that school leadership has the second-largest in-school impact on student learning outcomes, behind only classroom teaching (UNESCO, 2018; VVOB, 2018).

The world has experienced a paradigm shift that got better enforced post-COVID-19 era, the adaptation of Information and Communication Technologies (ICTs) into every sphere of human endeavours which include education. There is no escaping the digital transformation of our society, especially for the younger generation. The students of today process, share and receive more information from their phones, tablets and smartphones than anyone would have ever thought possible some decades ago. The way the young generation is learning about the world around them is changing, and the education system must keep up with the technological revolution. In the words of Ramakrishnan (2023):

For school leaders to excel, they should acquire skills to set vision and plan SMART (Specific, Measurable, Achievable, Realistic, and Timely). They should possess excellent communication skills by being able to listen to others' ideas, suggestions and feedback as well as know how to convey their ideas, vision and instructions clearly. School leaders must have the skills to resolve conflict and find amicable solutions. They should be able to delegate duties to teammates and possess information technology (IT) skills that will enhance personalised teaching and automated administrative work (p. 3).

The above assertion supports the notion that to be successful in the workplace as school leaders, there is a need to have the right technology and digital education to operate the technology. The digital transformation that abounds in our society today is making ICT skills more important every day in all spheres of life. As the key intermediary between the classroom, the individual school and the education system as a whole, effective school leadership is essential to improve the efficiency of schooling. Hence, this paper is about the need to adopt Information and Communication technologies in enhancing effective school leadership and discusses areas ICTs can be applied in contemporary school leadership

roles which will go a long way in forestalling effective leadership in the Nigerian educational system.

Statement of the Problem

School has an important role in nation-building. It is the starting point for an individual's success and a place where the nation's future citizens and leaders are created. It is no less important than the national economy. As educated citizens grow, the economy and sources of income and production enlarge. Hence, countries that aim to develop are seeking ways to adapt their education systems to the needs of modern society which include the use of ICTs by school leaders. At the same time, the requirement to improve overall school performance is putting school leaders under pressure to use more evidence-based teaching and learning practices. To curtail this pressure, school leaders need to recognize that the current school environment demands technological transformation for the efficiency and effectiveness of the information, services, and personal experiences among school stakeholders. There is a need to take advantage of the full potential of global technology by ensuring that people entering the school workforce need technology skills. Technology adaptations are the fuel for further educational progress and innovation in Nigerian society. As the world becomes increasingly connected and reliant on technology, the role of technology in school leadership has never been more critical. School leaders must stay up to date with the latest technological advancements and learn how to leverage them to enhance teaching and learning experiences for their teachers and students.

This study aims to discuss the relevance of ICTs in enhancing realistic and effective school leadership in the Nigerian education system by highlighting those technologies school leaders can adapt into the school system for them to achieve sustainable success since the achievements and success of a school are the responsibility of the school leader and society. Both parties must commit to developing effective methods of communication between the external and internal environments of the schools. In other words, what are the areas of school administration and management that school leaders can integrate ICT tools for effective leadership through teaching and learning? What are those factors

leveraging against the successful adoption of these ICTs in school leadership? What are the ways forward for school leaders?

Theoretical Framework

This study is hinged on the Technological Acceptance Model (TAM) developed by Davis (1989). It suggests that the idea that our attitudes towards technology are shaped by two key factors: perceived usefulness (PU) and perceived ease of use (PEU). Perceived usefulness refers to the extent to which we believe that using a technology will enhance our performance or achieve our goals, while perceived ease of use refers to the degree to which we believe that using a technology will be effortless and straightforward. The key feature of this model is its emphasis on the perceptions of the potential user. That is, while the creator of a given technology product may believe the product is useful and user-friendly, it will not be accepted by its potential users unless the users share those beliefs (McDonald, Fogarty, Cosby & McIlveen, 2022).

According to TAM, ease of use and perceived usefulness can be influenced by external variables that are usually manifested as social factors, cultural factors and political factors. Social factors include language, skills and facilitating conditions. Political factors are mainly the impact of using technology in politics and political crises. The attitude to use is concerned with the user's evaluation of the desirability of employing a particular information system application. TAM has been applauded for being easy to comprehend and yet has demonstrated a high level of predictiveness in many contexts. It has also considered external and social influences as well (Davis, 1989). However, TAM has been criticized for neglecting the diverse needs relevant in the voluntary consumer context, especially the lack of subjective norms or social impact; and that the central constructs PU and PEU provide no information about how to make technology more useful and easier to use. TAM applies to this study because it aids in comprehending the usefulness of various ICTs that can aid effective school leadership and how easily these technologies can be put to use by school leaders to enhance effective educational leadership.

School leadership

School leadership is important because it has become a priority in education policy agendas internationally. It plays a key role in improving school outcomes by influencing the motivations and capacities of teachers, as well as the school climate and environment. Effective school leadership is essential to improve the efficiency and equity of schooling (Pruitt, 2023).

Leadership plays a major role in increasing schools' achievements and improving effective learning, which positively affects institutions, society and quality of life. School leaders establish the culture and organization necessary for schools to provide quality teaching and therefore have an indirect, but important, effect on student learning (OECD, 2020; UNESCO, 2018; World Bank, 2018). By providing effective guidance, training, and working conditions to teachers, school leaders and managers create the best possible environment for learning (Haleem, Javaid, Qadri, Mohd and Suman, 2022; UNESCO, 2020). The role of the school leadership is primarily to collaborate with educators and provide curriculum direction and guidance. Support educators to effectively implement the cycle of planning to enhance programs and practices.

Ramakrishnan, (2023) highlighted the following leadership skills school leaders must acquire: **Strategic Thinking, Planning, and Management:** This skill requires leaders to set a vision and plan SMART (Specific, Measurable, Achievable, Realistic, and Timely) goals.

Communication: School leaders should have excellent communication skills so that they can actively listen to ideas, suggestions, and feedback from others as well as know how to convey their ideas, vision, and instructions clearly.

Mediation: Numerous challenges and conflicts arise between different stakeholders in the school. Hence, leaders must have mediation skills to resolve conflicts and find amicable solutions. **Delegation:** School leaders should be able to give clear instructions and delegate work to their teammates to enhance their skills.

IT Skills: Educational institutions are integrating technology in education to offer personalized teaching and automated administrative work. So, educational leaders must have basic IT skills.

It is no doubt that a school leader must possess the skill to operate and use ICTs for effective leadership role as Ramakrishnan, (2023) has pointed out. This goes to show the relevance of ICT usage in school leadership and the reason Nigerian school leaders should inculcate it into the system to ease their workload and achieve effective school outcomes.

Issues militating against effective school leadership in Nigeria

Some countries like Nigeria allow school leadership roles to be assigned to senior teachers who may lack training or experience (Barker and Rees, 2021). At other times, school leaders are appointed as political favours or with little or no transparency in the selection process thereby leading to the appointment of inexperienced and untrained leaders, which seriously hampers the effectiveness of schools and can have a negative impact on student learning.

Also, school leaders tend to work longer hours and have more responsibilities than teachers, but often receive little extra pay or other tangible incentives (OECD, 2020). In many countries like Nigeria, a school leadership role represents a final position for senior teachers and offers little career mobility (Barker and Rees, 2021). A large part of their job is accountability reporting, which adds to the pressure of the work (Education Commission, 2019; UNESCO, 2018).

There is a lack of basic data about school leadership, such as qualifications or turnover. There remains a lack of integrated and comparative research in terms of effective school leadership policies and practices globally (Spillane, Morel, and Al-Fadala, 2019; UNESCO, 2018). This proves especially true in low- and middle-income countries like Nigeria, as much research focuses on high-performing systems and high-income countries (OECD, 2020). These factors can dissuade highly motivated teachers or other quality candidates from seeking school leadership positions.

Despite its cumbersome roles, school leadership face challenges that hamper its effectiveness no matter the provision of sophisticated ICTs that may be available at their

disposal. So, it is imperative to select candidates with potential, give training and mentoring programmes, manage and give incentives to school leaders.

Information and Communication Technology (ICT)

Information and Communications Technology (ICT) is the use of computing and telecommunication technologies, systems and tools to facilitate the way information is created, collected, processed, transmitted and stored. It is the infrastructure and components that enable modern computing, which refers to all communication technologies, including the internet, wireless networks, cell phones, computers, software, middleware, video-conferencing, social networking, and other media applications and services enabling users to access, retrieve, store, transmit, and manipulate information in a digital form (McCarthy, Maor, McConney & Cavanaugh, 2023). In other words, any technology, infrastructure, component, or device that enables communications, data sharing, and global connectivity between humans and between humans and machines is included in the umbrella term ICT. Among the goals of ICTs and systems is to improve the way humans create, process and share data or information. They are also used to refer to the convergence of media technology. However, there is no universally accepted definition of ICTs because the technologies, devices and even ideas related to ICT are constantly evolving (Onyia, 2021). Nonetheless, the term is generally accepted to mean all devices, networking components and applications and when combined, the devices help people and organizations interact in the digital world.

The list of ICT components is exhaustive and continues to grow. Some components, such as computers and telephones, have existed for decades. Others, such as [smartphones](#), digital TVs and robots, are more recent entries. ICT components include the following but are not limited to Devices (hardware), software, middleware, data, wired networks, wireless networks, communication technologies, the cloud, communications protocols and interfaces, information [security](#) and [governance](#) policies. It is worth noting that ICT means more than its list of components. It encompasses the application of all those various components.

Information and communication technology contribute greatly to the education system. It improves the way by which educational institutes through school leaders provide a better educational environment with the use of tablets, computers, data displays, interactive electronic boards, and others in the process of communicating information.

Various Types of ICT Tools that can be harnessed into School Leadership in Nigeria

Education experts like Dormann, Hinz and Wittmann (2019); Ogunode and Ndayebom (2023); Luhamya, Bakkabulindi and Muyinda (2017); McCarthy, Maor, McConney and Cavanaugh (2023) pointed out various types of ICT tools that can be harnessed into schools for effective educational leadership:

- ❖ Learning Management Systems (LMS): These are digital platforms that streamline the management of educational content and resources. This enables school leaders to organize course materials, assessments, and communication with students in one place, making it easier to deliver and track learning outcomes.
- ❖ Smart Classroom Solutions involve interactive digital boards, Smart TVs, Digital whiteboards, or smart projectors. All that to create an immersive learning environment. These tools facilitate real-time interaction and collaboration, making lessons more engaging and interactive.
- ❖ Educational Apps encompass a wide variety of tools, from language learning apps to math practice apps, or to the one-stop learning apps that enable students to find everything they need to learn and grow in one single place. These apps are accessible on tablets, smartphones, and computers, allowing students to learn on the go and personalize their educational journey.
- ❖ E-Books and Digital Textbooks provide students with a more interactive and portable alternative to traditional paper textbooks. Considered as the most convenient digital technology in education, these are mostly PDF versions of textbooks and one can have hundreds of these in one single device. Also, these do not get torn nor do they have any heavy weight for students and teachers to bear.
- ❖ Digital Libraries are smart ICT labs based on tablets, notebooks, android laptops and desktop computers. These devices are usually preloaded with rich digital content for

classes so teachers can make students use them to learn and grow whenever they see fit.

School Leadership Tasks ICTs can improve for Effective Educational System in Nigeria

Attendance: Marking attendance for students who attend class is a daily task for teachers. Also, the attendance register for teachers and school administrators is necessary to achieve optimum results. Doing this daily with pen and paper is strenuous and not reliable as this can be manipulated in many ways and may not last as such registers may tear or be misplaced. The use of radio frequency identification (RFID) cards, QR codes, face recognition and fingerprint technology, mobile apps, voice recognition technology, Bluetooth beacons, and iris scanner, can be adapted to ease the taking of attendance of both students and staff. These ICTs can systematically recognise the relevant unique faces, voices, fingers, codes, beacons, cards, and automatically record their attendance as well as do the attendance analysis at the end of term or semester. This ICT-enabled attendance register would curtail impersonation during examination periods no matter the population of the students.

Lectures/lessons: Lessons and lectures are the major reasons school is relevant in the lives of the students. They are in school to learn and they gain these learnings through the lessons and lectures the teachers give them. ICT tools like educational programmes, platforms (Google Classroom, zoom, YouTube), applications, as well as projectors, interactive whiteboards, computers, tablets, and smartphones, provide the physical amenities for effective teaching and learning experiences since the educational success of the students is one of the determinants of effective school leadership the ICT tools will go a long way in supporting learning. Teaching is made easy for teachers and learners can find learning interactive and collaborative by interacting with other classmates outside the physical classroom, they can learn at their pace since these tools make it possible to record lessons and can also pave the way for teachers and learners to activate extra class activities.

Assignments: To achieve effective teaching and learning, teachers give assignments to students to enable them to learn or practice what has been taught. ICT tools help students

gather data in carrying out the assignments, they have various platforms to fall back to for references and beat deadlines easily by submitting the assignments through ICT platforms like email, google, websites, portals etc. Teachers can also assess these assignments using the same ICT avenues to review, comment and award marks.

Project supervision and presentation: Just like assignment submission, supervising students' projects is made easy via ICT tools. Students can liaise with their supervisors by speaking with them over the phone, sending short message service (SMS), chatting, facetime, and Skype among others. Project reports can be easily submitted via emails and supervisors use some computer features like track changes on MS Word to review and give feedback to students. During presentations, students employ multimedia options like Google Slides, and PowerPoint presentations to create visually engaged presentations and showcase their learning.

Parent engagement: This is the mutual working together of the school and parents to better the education and well-being of child in the school. Though both school and parent play different roles, there is a mutual relationship built by both parties to ensure the educational success of a child and the reputation of the school at large. The major key to a successful relationship is communication as relationships are the foundation of educational leadership. There is a need to establish trust, rapport, and collaboration with colleagues, students, parents, and other stakeholders. Teachers can relay their concerns to parents freely and promptly with the presence of ICT tools like email, phone calls, shared visuals, audio, et cetera. ICT tools help to build solid communication between schools and parents and can relay students' progress to parents without hindrance.

Teachers' evaluation: As school leaders, there is a need to monitor and evaluate the impact on the learning and well-being of students, staff, and the school community. Multiple sources of data and feedback are collected and analyzed which are used to measure progress and outcomes. For school leaders and teachers to progress or get promoted, they are evaluated through their contributions to learning and the school at large. This can be made easy, accurate and prompt with the use of ICT tools like Google

Scholar can be used to assess the index factor of a lecturer in the university to ascertain how much contribution a teacher has made to knowledge.

Research and resources: There has never been more information available to scholars in an instant in the history of mankind than now. The internet is expanding every single day with free information. This wormhole of knowledge was never possible before the internet. The easy access to information helps school leaders, teachers and students to inquire, refer, and accumulate knowledge and use them effectively. Overall, ICT tools like the Internet and Google applications provide relevant material across a limitless range of topics to help facilitate the best possible outcome in the learning and researching journey.

Communication: School leaders have to engage teachers, students, parents, academic boards, governing bodies and even wider communities daily. This makes communication an essential skill for school leaders. Simply put, they need to create a culture of open communication that can help create a climate of trust and respect. They can surely do this efficiently with the use of ICT tools like telephones, fax, email, text messages, chats, social media interactions, zoom meetings among others. Since school leaders are responsible for setting the tone for the school by being able to communicate effectively with stakeholders. Effective communication means adjusting their language and choosing the most appropriate medium and method of communication for each situation. School leaders must listen actively, provide feedback, and seek input from others and this can only be achieved effectively with the use of ICT tools. For example: Social media platforms can be used to recognise and celebrate the strengths, achievements, and contributions of team members, and support their growth and development. The use of ICT tools such as Slack, Zoom, and Microsoft Teams has also proven effective in helping team members stay connected and help students gain the ability to communicate. This means that students can ask questions, provide feedback, and engage in projects with their peers in a way that was not possible before

Problems Inhibiting the Adaptation of ICTs in School Leadership

- **Inadequate Financial Resources:** ICT tools are heavily capital-based. It requires a huge amount of money to acquire them bearing in mind the cost of foreign

- exchange as these tools are not produced in Nigeria. Most schools especially the public schools will find the ICT tools expensive to acquire.
- Lack of technical know-how: School leaders in Nigeria do not know how to operate and use most of the ICTs. These technologies are imported and require training to enable school leaders to maximize them to their full potential.
 - The nonchalant attitude from the government: The government of a developing country like Nigeria do not pay attention to public education as most of them have their wards schooling in developed countries. The quota given to education in annual budget cannot even be well accounted for. The Nigerian government at all levels do not care about quality education not to talk about financing it with adequate ICTs.
 - No indulging in new methods or the resistance to change. The idea of sticking to how it is being done and the fear of trying something new or innovative is a challenging thing for school leaders in Nigeria. Even when the entire world is revolutionizing into the digital era, the Nigerian educational system is still hanging on to the way things were done thirty years ago.
 - Poor economy: The Nigerian economy is not favourable to her citizens, the inflation rate is high and the poverty level is also high, which affects the cost of livelihood. School leaders struggle to have basic things of life not to mention the procurement of technology devices.
 - Poor remuneration: Salaries are so poor that they barely cater for the basic needs of school leaders and this does not encourage them to spend the little they have on technologies.
 - Inadequate digital facilities: The non-availability of ICT facilities has prevented school leaders from fully deploying the facilities for teaching, researching and carrying out academic activities in the various institutions. Ogunode et al. (2021) noted that ICT facilities like computers, printers, faxing machines, projectors etc. are not available or inadequate in Nigerian schools.
 - Unstable power: Poor power supply distribution across the federation has hampered the effective use of ICT tools for school leadership. Power generation and distribution in Nigeria as of today is poor and expensive.

- **Poor internet coverage:** Internet service is very important for the good use of ICT tools in Nigeria. Internet service is critical for the operation of ICT tools for effective school leadership as it is the life wire of ICT. Availability and stable internet services make its use efficient and effective in educational institutions. It is unfortunate that in Nigeria, internet coverage and accessibility are still a problem as poor internet connection is a common problem in Nigeria.
- **High cost of ICT Tools:** School leaders lack basic office gadgets and technologies in their schools as a result of underfunding and the high cost of the tools. The high cost of ICT equipment with the exchange rate of foreign currencies hinders schools with poor turnover from purchasing and supplying ICT systems in their schools.
- **High cost of maintaining ICT tools:** The sustainability and survival of ICT tools depend on high maintenance culture from users. The maintenance of these technological devices is very expensive to carry out. Ogunode et al (2021) submitted that the cost implication required for maintaining ICT facilities is high and this made many school leaders avoid the use or limit the time for its usage
- **Lack of skilled School leaders:** Many school leaders who are part of the academic staff lack the basic computer training, not to mention specialized training required for ICT adaptation. ICT usage is a complex process which requires specialized skills.

Conclusion

For Nigeria to have a realistic effective leadership in education, there is a need to install and equip a working school leadership at all levels that will serve as the solid foundation to enhance a sustainable educational system in Nigeria. Technology is here with us and it has come to stay as it evolves with each passing day. Leaders in schools and the education system at large should take optimum advantage of its use to achieve a realistic educational development in Nigeria. There is a need for stakeholders to appoint experienced and skilled school leaders. Relevant government agencies and educational leaders should motivate and support school leaders to achieve various visions of education by providing all necessary resources and making avenues accessible for resources that will equip them

to achieve a realistic and effective school outcome. School leaders should avail themselves of opportunities for learning and training on how to use ICTs to ease their jobs and deliver their goals promptly.

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