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## **EDITORIAL DESK**

Volume 3 of the West African Journal of Educational Administration and Planning (WAJEAP) has a total of ten articles that were the products of well researched papers presented at the international conference held in May 2024 at the Presbyterian University of East Africa in Kikuyu, Nairobi, Kenya. The conference had well over 100 participants that gathered at the ambiance of PUEA environment, which was well attended by over 25 universities across the globe including Nigeria, Serra Leone, Kenya, South Africa, Australia and University of South Alabama in United States of America. All the articles have been peer reviewed and plagiarism checks conducted on them before publication.

I, therefore, want to deeply appreciate the management team of the Presbyterian University of East Africa for making this publication a reality. All the writers and authors are congratulated for passing the stringent measures set by the guild of editors.

Congratulations to everyone, and I wish you a prosperous Christmas celebration in advance.

**Prof. M. O. B. Mohammed** FNAEAP,  
*Head, Editorial Team*

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# NAVIGATING THE DIGITAL AGE: ICT SOLUTIONS FOR EFFECTIVE EDUCATIONAL MANAGEMENT

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## ABSTRACT

*In today's rapidly evolving digital landscape, Information and Communication Technology (ICT) is increasingly indispensable in educational management. This paper explored the critical roles and challenges of ICT integration in educational administration, focusing on its potential to revolutionise traditional management practices, enhance communication, and improve decision-making processes. Despite ICT's global recognition for enhancing education's relevance, quality, and accessibility, its adoption in educational management, particularly in Nigeria, faces significant hurdles. These include infrastructural deficits, lack of skilled personnel, high costs of ICT solutions, inadequate training facilities, and resistance to change. The paper identified that school administrators often spend excessive time on tedious process of manually registering students, maintaining student performance records, keeping inventory lists of suppliers, conducting cost accounting, paying bills, printing reports, and creating architectural designs. To address these challenges, the paper suggested a multi-faceted approach including the prioritizing digital infrastructure investment through public-private partnerships, enhancing digital literacy across all stakeholders, and implementing robust cybersecurity measures. It further emphasises the importance of change management strategies to overcome resistance and foster a culture of innovation. Collaboration among governments, educational institutions, and technology providers is crucial to successfully integrating ICT into educational management. By adopting these strategies, educational institutions can harness ICT's transformative power to improve administrative efficiency, facilitate effective communication, and support data-driven decision-making, ultimately creating more equitable and inclusive learning environments.*

**Keywords:** Digital age, ICT solutions, transformation, educational management

## INTRODUCTION

In the rapidly evolving digital age, Information and Communication Technology (ICT) has become indispensable in various facets of human life and society, revolutionising even basic aspects of human activities such as work, leisure and domestic activities. In education, ICT has become a crucial component of teaching and learning and a major component of debate on issues of contemporary educational policies (Joel et al., 2019). The role of ICT in education is globally recognised, especially its potential for improving the relevance, quality and access to education (Das, 2019). Educators generally agree that when used effectively, ICT can increase access to education, enhance the relevance of education to the workplace, and improve educational quality by fostering an active, real-life-connected learning process (Aworanti, 2016; Joel et al., 2019). Similarly, as the world advance more towards digitalisation, it becomes crucial to prepare learners for these realities through the integration of ICT into pedagogical processes.

While there is increased advocacy and efforts towards the integration of ICT in education in Nigeria, the use of ICT in administration and management is yet to receive equal attention. Many administrators and principals still spend a lot of time doing clerical activities,

information recovery and document production manually (Ahmad, 2011). Many documents such as student files, documents, results, etc. are still manually created, documented and stored, causing data loss and administrative delays, including problems finding old information (Joel et al., 2019). According to the Organisation for Economic Co-operation and Development (OECD) report (2015), the use of ICT in school management is on the rise globally. This trend shows that schools and education systems are increasingly leveraging technology to support administrative tasks, improve communication, and enhance teaching and learning. Despite this, the use of ICT in school management is still in its infancy in Nigeria and many African countries owing to numerous challenges such as the lack of technical expertise, infrastructural deficit, resistance to change, etc. (Ngmenkpieo et al., et al., 2023).

Educational management involves organizing human and material resources and educational programmes and systematically utilizing them to achieve educational objectives (Alaba, 2019). It involves the efficient use of human, material, financial, and other resources available for education to attain predetermined educational goals. Aside from pedagogy, ICT integration has also become a crucial aspect of educational management in various institutions of learning across the world. According to Ukanwa and Chiemeka (2021), effective school management is crucial for large-scale sustainable educational reform, and ICT integration provides the opportunity for school managers and administrators to effectively achieve these goals.

ICT integration in school management has revolutionized traditional administrative processes, teaching methodologies, and learning experiences, offering efficient, flexible, and innovative solutions (Ukanwa & Chiemeka, 2021). As Ngmenkpieo et al., (2023) noted, the implementation of ICT in educational management simplifies administrative tasks such as record-keeping and attendance monitoring, enabling staff to concentrate on other more important responsibilities. It enables efficient communication among stakeholders, including staff, parents, and students, ultimately fostering a positive learning environment. Additionally, ICT fosters access to a variety of educational resources, enhancing the learning experience and diversifying teaching materials.

Moreover, ICT can also be applied to manage human, physical, and financial resources, offering significant potential for enhancing accountability, transparency, and participation among various stakeholders. This paper discusses the roles and challenges of using ICT for effective educational management.

### **ICT Integration in Educational Management: Why is it Important?**

Studies have highlighted the salience of ICT for educational management. For instance, Ugwu and Ugwu (2020) demonstrated that school administrators and managers who used to spend significant time solving complex problems and monitoring school operations can now do so quickly, easily and without stress due to advanced technology. These technologies facilitate the decentralization of work tasks, allowing for greater flexibility and interaction. To this end, information technologies used to facilitate educational management are described as educational management information systems.

Ugwu and Ugwu (2020) described Management Information Systems (MIS) as executive information systems specifically designed to align with a school's structure, management tasks, instructional processes, and unique needs. This system ensures that educational institutions can efficiently manage their resources and operations by providing a framework that supports administrative and educational activities. The authors similarly highlighted the importance of MIS for supplying crucial information for decision-making. MIS aids in

searching for, analysing, evaluating, selecting, and implementing solutions, making it a valuable tool for handling complex and unstructured decisions in educational settings.

Moreover, Gehlawat (2014) described MIS as tools that enable individuals, groups, and organizations to assess, design, implement, manage, and utilize systems to generate relevant information for improving efficiency and responding to changes in their environment. MIS also equip leaders with the capacity and insights necessary to streamline operations and achieve organizational goals by integrating data from various sources and presenting it in comprehensible formats (Moorty, 2019).

School administrators can also adopt information systems to monitor and evaluate teacher performance, enhance communication and the distribution of educational resources, provide feedback, regulate workplace behaviour, establish rapport and promote workplace culture (Balram 2018). Similarly, information systems enhance effectiveness and efficiency by saving time and facilitating the development of alternative solutions for complex problems. For instance, schools can solve electricity problems by installing alternative energy solutions, creating and maintaining databases for easy data storage, management and retrieval, etc. As Ugwude and Ugwude (2020) note, EMIS has significantly transformed the roles and work styles of school administrators, simplifying not just office work but also ensuring that schools function efficiently.

### **Role of ICT in Educational Management**

ICT encompasses a wide range of tools and resources used to communicate, create, disseminate, store, and manage information. In the context of educational management, ICT solutions include: administrative software, learning management systems (LMS), digital libraries, communication platforms, and data analytics tools. ICT plays several crucial roles in educational management. Some of these roles include;

**Administrative Efficiency:** One of the primary benefits of ICT in educational management is the enhancement of administrative efficiency. Traditional administrative tasks such as student enrolment, attendance tracking, grade management, result processing and record-keeping can be time-consuming and prone to errors. ICT solutions like Student Information Systems (SIS) can automate these processes, reducing administrative burden and increasing accuracy. For instance, Kundi and Nawaz (2010) highlight how the implementation of ICT in administrative processes leads to significant time and cost savings, allowing educational institutions to allocate resources more effectively.

**Enhanced Communication:** Effective communication is crucial for the smooth functioning of educational institutions. ICT facilitates seamless communication among teachers, students, parents, and administrators. Platforms such as email, instant messaging applications, task management tools, websites, and educational portals enable real-time information sharing and collaboration. According to Aviram and Tami (2004), ICT tools enhance the ability of educational institutions to engage with stakeholders, fostering a more connected and informed community.

**Data-Driven Decision Making:** The ability to collect, analyze, and interpret data is a key advantage of ICT in educational management. Data analytics tools provide insights into student performance, attendance patterns, resource utilization, and other critical metrics such as teacher performance. This data-driven approach supports informed decision-making, helping educational leaders identify trends, address issues, and implement effective strategies. The OECD report (2015) underscores the importance of data analytics in

educational management, noting that data-driven decision-making leads to improved educational outcomes.

**Support for Teaching and Learning:** ICT not only enhances administrative and managerial functions but also supports teaching and learning processes. Learning Management Systems (LMS) like Moodle and Blackboard provide platforms for online course delivery, assessment, and feedback. These systems offer flexible learning options, cater to diverse learning needs, and facilitate continuous monitoring of student progress. A study by Al-Qahtani and Higgins (2013) found that the use of LMS in higher education institutions positively impacts student engagement and academic performance.

### **Challenges of Using ICT in Educational Management**

While the integration of Information and Communication Technology (ICT) is essential for management and meaningful development in the education sector, the efficiency of employing these tools keeping may be challenging if the fundamental issues associated with ICT are not addressed. Walson and Okanu-Igwela (2019) categorised these challenges into infrastructural-related challenges, capacity-building-related challenges and finance-related challenges. These challenges include;

**Lack of basic and adequate infrastructure or resources:** Inadequate infrastructure is a significant barrier to the effective use of ICT in educational management. Many educational institutions, particularly in developing regions such as Nigeria, lack the necessary infrastructure to support digital technologies. This includes insufficient access to reliable electricity, internet connectivity, and modern computing devices (Aworanti, 2016). The absence of adequate infrastructure limits the ability of educational institutions to fully leverage ICT solutions for administrative and pedagogical purposes. For example, schools without stable internet connections cannot effectively implement online learning management systems (LMS) or communication platforms (Osakwe, 2012). Ugwu and Ugwu (2020) found that poor and unstable supply of electricity is a major challenge in utilising ICT in most Nigerian schools. Aside from being unable to use these tools due to the lack of electricity, constant power interruption exposes these devices to damage and data loss.

**Lack of Skilled Personnel:** A significant barrier to integrating ICT in educational management is the shortage of skilled personnel. According to Joel et al. (2019) and Aworanti (2016), many schools struggle to find staff with the necessary expertise to implement and manage ICT systems effectively. This lack of trained personnel hinders the successful adoption and utilization of technology in educational settings, as teachers and administrators may lack the skills to leverage ICT tools fully. Agu et al., (2021) also highlights that a critical obstacle to ICT usage in schools is the shortage of trained teachers proficient in these skills. Without adequate training, educators cannot incorporate ICT into their teaching methods, which limits the potential benefits of technology in education.

**High Cost of ICT Facilities:** The high cost of ICT facilities is another major challenge, as noted by Aworanti (2016). Implementing ICT infrastructure requires substantial investment in hardware, software, and maintenance than many administrators or schools can afford (Jacob et al., 2021). These costs prevent many educational institutions, particularly in developing countries where financial resources are often limited, from accessing, utilizing or fully integrating ICT in educational management activities. As a result, schools often struggle to acquire the necessary technology to support ICT integration. Aside from the cost of hardware devices such as laptops, desktops, etc., software and internet access are equally expensive. Umar and Rosnaini (2018) submits that the high cost of internet services and software is one of the major prohibiting factors for ICT integration in Nigeria. Buying, replacing, updating,



maintaining and getting technical support for ICT software is expensive. Hence, it is not uncommon to find the utilisation of unlicensed software among educators, causing more security-related ICT problems.

**Poor funding;** Poor funding exacerbates the difficulty of integrating ICT into educational management. Joel et al. (2019) points out that insufficient financial resources limit schools' ability to invest in technology and infrastructure. Without adequate funding, educational institutions cannot procure or maintain the technology needed for effective ICT integration, leaving them unable to modernize their systems or provide the necessary training for staff.

**Inadequate training facilities** Inadequate training facilities further impede the integration of ICT into education, as noted by Aworanti (2016). Schools often lack the resources to provide comprehensive training programs for educators and staff, resulting in a gap in ICT skills and knowledge. Without proper training facilities, it is challenging to develop the capacity needed to support the effective use of ICT in educational management, limiting the potential impact of technology on teaching and learning.

**Resistance to Change:** Resistance to change is a common challenge in the implementation of ICT solutions in educational management. Educators, administrators, and staff may be hesitant to adopt new technologies due to unfamiliarity, fear of obsolescence, or perceived disruptions to established routines and practices (Idowu & Esere, 2013). Idowu and Esere (2013) indicated that resistance may be from students, academic or administrative staff or from internal or external stakeholders including parents and the government. Hesitance to adopt change may also result from fear or preference for traditional methods, leading to slow rates of ICT development and integration. Hence, overcoming resistance to change requires a cultural shift within educational institutions. Leaders must foster an environment that encourages innovation, experimentation, and continuous improvement. Providing training and support to educators and staff is essential to build confidence and competence in using ICT tools. According to Fullan (2013), effective change management involves clear communication of the benefits of ICT integration, active involvement of stakeholders in the change process, and ongoing professional development opportunities to equip educators with the necessary skills to adapt to technological advancements.

**Digital Divide:** One of the most significant challenges in using ICT in educational management is the digital divide, the gap between individuals and communities with varying levels of access to digital technologies (Ngmenkpiew et al., 2023). This divide is particularly pronounced in developing countries, rural areas, and economically disadvantaged communities. Limited access to reliable internet connections, computers, and other digital resources hampers the ability of educational institutions to effectively implement ICT solutions. The digital divide exacerbates existing inequalities in education. Students and staff in under-resourced schools may struggle to access digital learning tools, leading to disparities in educational opportunities and outcomes.

Overall, the rapid pace of technological change necessitates continuous professional development for educators and administrators. Keeping up with new ICT tools, platforms, and pedagogical approaches requires ongoing training and skill development. Professional development programs often focus on enhancing digital literacy, pedagogical innovation, and the effective use of ICT in teaching and learning. However, many educational institutions face challenges in providing adequate training due to budget constraints, time limitations, and competing priorities. To address these challenges, educational institutions should prioritize professional development as a strategic investment in their workforce. Collaborating with technology providers, leveraging online learning platforms, and fostering a culture of lifelong

learning can help educators stay current with technological advancements and effectively integrate ICT into their practices (Dede et al., 2009).

### **Addressing the Challenges of ICT Integration in Educational Management**

Considering that the integration of ICT in educational management is beset by multiple challenges, addressing these challenges is crucial to achieving rapid, effective and well-rounded development in the Nigerian educational sector (Akuh, 2011). This paper suggests several strategies including:

The prioritisation of investments in digital infrastructure by governments, policymakers school administrators to ensure equitable access to technology across all educational settings. This includes providing reliable internet connectivity, access to devices, and maintaining technological resources. Considering that this approach is a difficult venture for lone stakeholders, partnerships among several stakeholders (governments, private institutions and schools) is highly recommended. This is crucial for bridging the gap and combining resources and expertise to enhance the effective integration and deployment of ICT solutions for educational management. According to UNESCO (2020), investing in digital infrastructure is essential for creating inclusive and equitable education systems that can adapt to the demands of the 21st century. These partnerships and investments can significantly address disparities in access to technology and support the integration of ICT in educational management.

Governments must also work to improve the quality and supply of basic amenities to support seamless ICT integration for educational management. This includes the provision of a stable and reliable supply of electricity. Aside from this, school administrators can partner with governments and private institutions to invest in alternative energy solutions that provide more reliable energy. This can include investments in solar power or electric-powered inverters.

Furthermore, educational leaders can adopt change management strategies to overcome resistance and promote a culture of innovation. Continuous professional development programmes can be designed to enhance digital literacy, pedagogical innovation, and the effective use of ICT in teaching, learning and administration. Additionally, school administrators can hire educators with the right skill set to aid members of staff who may lack these skills. According to Fullan and Langworthy (2014), effective change management requires building capacity and fostering a shared vision for integrating technology into education.

Efforts should be made to develop the capacity of school administrators and managers in the use of ICT solutions for educational management. Schools should invest in promoting digital literacy and inclusion for all stakeholders. Digital skill training can be made available to students, educators, and administrators to empower them to navigate the digital landscape confidently. According to the World Economic Forum (2020), digital literacy is a critical skill for future generations, and providing training programmes can enhance individuals' ability to use technology effectively. By fostering digital literacy, educational institutions can ensure that all members of the school community can engage with and benefit from ICT-enabled educational opportunities.

Finally, care must be taken to ensure that robust cybersecurity measures and data protection policies are implemented. This is crucial for safeguarding sensitive information within educational institutions. Schools should also invest in developing comprehensive data

protection strategies and regularly assess their security protocols. By prioritizing cybersecurity, educational institutions can mitigate risks and ensure that ICT systems are secure and reliable.

## CONCLUSION AND RECOMMENDATIONS

The digital age has ushered in a new era of possibilities for educational management through ICT solutions. By enhancing administrative efficiency, facilitating effective communication, supporting data-driven decision-making, and enriching teaching and learning experiences, ICT plays a pivotal role in the transformation of educational institutions. While the integration of ICT in educational management offers immense potential to enhance administrative efficiency, their implementation in Nigeria is beset by several challenges such as the cost of purchasing ICT devices and solutions, the poor state of infrastructure to support these solutions, lack of technical skills among educators, poor funding and resistance to change among others.

Addressing the associated challenges is essential to fully realize the potential of ICT in education. By adopting a comprehensive approach that includes infrastructure investment, skill development and the promotion of digital literacy, cybersecurity measures, and collaboration among stakeholders, educational institutions can overcome these challenges and harness the transformative power of ICT to improve educational outcomes and create more equitable and inclusive learning environments. As educational institutions continue to navigate the digital landscape, the strategic implementation of ICT solutions in administration and management is key to achieving sustainable and effective educational management.

## REFERENCES

- Agu, P. U., Okeke, F. C., Diara, C. F., Nwafor, B. N. & Nwankwo, P. P. (2021). Information Communication Technology (ICT) and Public Primary School Management in Enugu State, Nigeria. *Journal of the Nigerian Council of Educational Psychologists*, 14(1).
- Ahmad, N. (2011). Effective educational management: An implementation of ICT in administration of higher education institutions. *Articlesbase*:
- Akuh, E. A. (2011). Challenges in educational technology in Nigeria education system. *Environment*, 1,(2).
- Alaba, A. J. (2019). School Management and the Place of Information Communication Technology: Prospects and Challenges in Nigeria. *African Journal of Educational Research and Development (AJERD)*, 12(2).
- Al-Qahtani, A. A. Y. & Higgins, S. E. (2013). Effects of traditional, blended, and e-learning on students' achievement in higher education. *Journal of Computer Assisted Learning*, 29(3), 220-234.
- Aviram, R. & Tami, D. (2004). The impact of ICT on education: The three opposed paradigms, the lacking discourse. *Proceedings of the European Conference on Educational Research*.
- Balram, K. (2018). *Role of MIS in education sector*. Retrieved from [www.iitms.co.in](http://www.iitms.co.in)
- Dede, C., Honan, J. P., & Peters, L. C. (Eds.). (2009). *Scaling up success: Lessons from technology-based educational improvement*. Jossey-Bass.
- Fullan, M. (2013). *The new meaning of educational change*. Teachers College Press.
- Fullan, M. & Langworthy, M. (2014). *A rich seam: How new pedagogies find deep learning*. Technical Report. Pearson.
- Gehlawat, M. (2014). School management information systems: An effective tool for augmenting the school practices. *New Frontiers in Education*, 57-64.
- Idowu, A. I., & Esere, M. (2013). ICT and higher educational system in Nigeria. *Educational Research and Reviews*, 8(21).

- Jacob, O. N., Dahir, N., & Jegede, D. (2021). ICT usage for primary school administration in Nigeria: Challenges and way forward. *International Journal of Human Computing Studies*, 3(7), 1-9.
- Joel, I. E., Ogi, J. & Ikpe, J. (2019). Politics of ICT integration in secondary schools in Nigeria: Problems and prospects. *BSUJEM*, 1(2), 250-260
- Kundi, G. M. & Nawaz, A. (2010). From objectivism to social constructivism: The impacts of information and communication technology (ICT) on higher education. *Journal of Science and Technology Education Research*, 1(2), 30-36.
- Moorty, S. (2019). *The concept of management information systems*. Bizfluent.com. retrieved from <https://bizfluent.com>.
- Ngmenkpieo, F., Tseer, T. & Chirani, F. (2023). The Digital Edge in Education: Harnessing ICT for Optimal School Management. *Politi Sci Int*, 1(2), 87-96.
- OECD. (2015). *Students, Computers and Learning: Making the Connection*. OECD Publishing.
- Osakwe, R. N. (2012). Problems and prospects of using information and communication technology for record-keeping in tertiary institutions in Nigeria. *Journal of Education and Practice*, 3(14), 39-43.
- Selwyn, N. (2010). *Schools and schooling in the digital age: A critical analysis*. Routledge.
- Shoniregun, C. A., Dube, K. & Mtenzi, F. J. (Eds.). (2010). *Securing the information infrastructure*. Springer.
- Ukanwa, G. U. & Chiemeka, E. C. (2021). Utilization of ICT for management and administration in education sector. *International Journal of Advances in Engineering and Management*, 3(3), 915-920.
- Umar, M. & Rosnaini, M. (2018). A Review of Obstacles of ICT Usage in Nigerian Tertiary Educational Institutions. *International Journal of Human Resource Studies*. 8(4): 177-185.
- UNESCO. (2015). *Education for all 2000-2015: Achievements and challenges*. UNESCO Publishing.
- Walson, O. B. A. & Okanu-Igwela, J. N. B. (2019). Issues, challenges and prospects in the use of educational technology for instructional delivery in the management of 21st university education in Nigeria. *ADECT 2019 Proceedings*.