

REVOLUTIONIZING EDUCATIONAL ADMINISTRATION: LEVERAGING ARTIFICIAL INTELLIGENCE INNOVATION AND CREATIVITY

Mbeh Arah, Egbe¹, Joseph E. Ayine², Victoria O.(Ph.D)³ &
Ndoma Mbamba Agbor⁴

^{1,2,3}Department of Educational Foundation School of General Education,

^{1,2,3,4}Federal College of Education Obudu, Cross River State

⁴Department of General Studies Education School of General Education,

Abstract

The administration of education in Nigeria is overdue for transformation, but current practices are constrained by outdated processes, poor data management, and limited adaptability, which hinder the delivery of quality education. This paper argues that a paradigm shift is urgently needed one that embraces the transformative power of artificial intelligence (AI), innovation, and creativity to modernize educational administration. AI can automate routine tasks, generate data-driven insights and enhance planning and accountability. Innovation introduces new digital tools and platforms that streamline operations and improve service delivery, while creativity supports flexible, inclusive and problem-solving leadership. Drawing on global developments and national realities, this discourse offers a critical reflection on how Nigeria education system can leverage these tools to create smarter and more responsive institutions. It also highlights the need for visionary leadership that target investment in digital infrastructure, and a mindset shift within educational leadership. Ultimately, it also advocates for a future-oriented approach to educational administration, one that is not only efficient but also aligned with the broader goals of national development in a digital age.

Keywords: educational administration, artificial intelligence, innovation and creativity

Introduction

Educational administration in Nigeria remains largely traditional, rigid and slow to adapt to the demands of rapidly changing world. Bureaucratic processes, limited use of data and inefficient systems continue to weaken the quality of educational governance across the country. In a 21st-century knowledge economy, this administrative inertia undermines the nation's ability to deliver quality education and build human capital that drives development. Adiguzel, Kaya & Cansu (2023) opined that Artificial intelligence (AI) has led to a new age of innovation and transformation in many fields, including education. AI technologies offer new tools and applications that have the potential to transform traditional teaching and learning outcomes, personalized instruction, instant feedback and students engagement.

It is my firm belief that Nigeria must radically rethink her approach to educational administration. To meet the demands of a globalized digital world, the country must embrace artificial intelligence (AI), innovation and creativity as transformative tools. AI can streamline administrative processes, improve decision making through data analytics and reduce the workload on education managers.

Innovation can lead to the adaptation of smarter systems like; cloud-based records, automated scheduling, and integrated feedback tools, while creativity can inspire adaptive leadership, locally tailored solutions and user-centered design that meet the needs of diverse stakeholders. According to Igboule (2023), the application of AI in educational management is still in its early stages, but it has already shown promising results. For instance, AI-powered learning systems can personalize the learning experiences of students, provide real time feedback and detect potential problems easily. Similarly, AI can help educators identify students strengths and weaknesses, enabling them to tailor teaching methods accordingly.

This paper argues that the future of educational administration in Nigeria depends not on incremental reforms, but on bold technology-driven and creatively led transformation. It calls for a redefinition of administrative-culture, one that is dynamic, efficient and responsive. Drawing on global trends and national realities, this paper presents a case for why and how Nigeria should leverage these tools not only to improve education management, but also to catalyze broader socio-economic development.

Critical Challenges in Educational Administration in Nigeria

The Nigerian education system is fraught with administrative challenges that significantly hinder the delivery of quality education and responsive governance. One of the most persistent issues is the continued reliance on manual, paper-based administrative processes, which are not only time-consuming but also prone to inefficiencies, mismanagement, and data loss (Ololube, 2015 & World Bank, 2022). Despite the increasing global shift toward digitalization, many Nigerian institutions still lack basic infrastructure for automating records, tracking performance, or managing student and staff information (Federal Republic of Nigeria, 2020).

Another major concern is the rigid bureaucracy and centralized decision-making structures that characterize educational governance in Nigeria. These systems often delay critical decisions, limit institutional autonomy, and obstruct innovation at the school and district levels (Adebayo, 2014 & UNESCO, 2021). This centralized control makes it difficult for administrators to respond to local needs or to implement context-specific strategies.

Furthermore, there is a shortage of adequately trained administrative personnel with the digital literacy and leadership capacity needed to manage modern educational systems. Many administrators lack exposure to contemporary tools and strategies, while ongoing professional development opportunities remain scarce (World Bank, 2022 & Federal Republic of Nigeria, 2020). The shortage of AI teachers and experts is another problem that hinder the deployment of AI for educational administration in Nigeria. Attah (2021) lamented that about “90 percent of our primary schools do not have computer teachers. Therefore, the government needs to redefine our educational system. We cannot depend on an analogue age. As the world is changing, we need to change too,” she said. Igbokwe, (2023) noted that another challenge is the lack of technical expertise and resources. AI requires specialized skills and knowledge, and educational institutions may lack the necessary resources to implement AI effectively. Training and professional development opportunities must be provided to ensure that educators and administrators have the skills to use AI effectively.

Infrastructure deficits and funding limitations also play a significant role. Inadequate access to stable electricity, internet connectivity, and digital devices particularly in rural and underserved regions has created deep inequalities in

administrative capacity (UNESCO, 2021 & World Bank, 2022). According to Ogunode and Gregory (2025), many cities and communities today in Nigeria do not have access to a stable power supply. This problem is also affect AI deployment for educational administration in Nigeria especially public educational institutions across the country. The problem of unstable power supply is hindering the students and teachers from integrating digital technologies into their teaching and learning program.

Another problem that may hinder effective application AI in educational administration in Nigeria is the problem of poor internet services. Many public educational institutions are in rural areas where there are no internet facilities and many public schools cannot afford to provide constant internet services in their respective institutions. Internet services are still very expensive in the country. To access the services in the schools by school administrators is on the high side in terms of cost implication. Attah (2021) and Jegede & Abashi (2019) expressed regret that access to technology has remained a major challenge facing Nigeria, noting that Internet penetration stands at 42.06 percent in Nigeria where most of the population lives in rural areas. This poor internet accessibility in Nigeria has affected the development of digitalization of education in the Post-Basic Education and Career Development (PBECD) in Nigeria. The problem of internet connectivity is a challenge in schools in Nigeria (Ogunode, Lawal & Olubunmi, 2021, Ogunode, Dahir, Yahaya & Jegede 2021 and Ogunode, Abdulrazak & Abubakar 2023).

Lastly, the absence of a culture that nurtures innovation and creativity in educational leadership further restricts progress. Traditional administrative mindsets and a fear of experimentation prevent the adoption of novel, locally relevant solutions (Adebayo, 2014 & UNESCO, 2021).

Leveraging Artificial Intelligence, Innovation, and Creativity for Transformative Change

To overcome the deep-rooted challenges in Nigeria's educational administration, a radical shift toward modern, technology-driven solutions is essential. Artificial intelligence (AI), innovation, and creativity provide a strategic framework for reimagining educational management systems that are not only efficient but also adaptive and inclusive.

Artificial intelligence holds significant promise for streamlining administrative operations. AI-powered platforms can automate routine tasks such as admissions processing, timetable generation, and payroll systems, thereby reducing errors and increasing operational speed (World Bank, 2022 & UNESCO, 2021). AFSA (2022) observed that AI can automate routine administrative tasks, such as managing student records, generating reports, scheduling and handling routine inquiries. By automating these processes, administrators can save time and allocate their efforts to more strategic and value-added tasks. AI can be used to improve the efficiency of administrative tasks in educational institutions. AI-powered systems can automate routine tasks, such as grading, scheduling, and record-keeping, freeing up educators' time to focus on more impactful work, such as lesson planning and student engagement (Oztok & Zingaro, 2019). According to Akmesek Kor & Erbay., (2021), with the close monitoring and the ability to predict students' performance, AI technologies facilitate administrative roles as they are of use when addressing student disengagement and effectively reducing student dropout rates (Karsenti, 2019) because such early warning systems based on long-term datasets facilitate prediction

and identifying risks (Brown, McCormack, Reeves, Brook, Grajek, Alexander & Weber, 2020). Furthermore, AI technologies can replace a significant amount of repetitive work, reducing the workload of teachers and administrators (Chan & Zary, 2019). Thus, a chatbot reduces teachers' administrative workload by evaluating students' assignments, scoring, and providing feedback to students (Chen, Xie, Zou & Hwang, 2020). More importantly, AI supports data-driven decision-making by analyzing trends in student performance, predicting dropout risks, and informing institutional and policy-level planning (Ololube, 2015 & Adebayo, 2014). Countries like Singapore and Estonia have adopted AI-enhanced systems to improve education management, offering scalable models for Nigeria (UNESCO, 2021).

According to Uwais (2025), AI is not replacing teachers but rather enhancing their roles. Educators are freed from repetitive administrative tasks, allowing them to focus on student engagement and creative teaching strategies. He opines that, AI can be used for the following;

Automating Grading: AI tools can grade assignments and quizzes, saving time and providing unbiased assessments.

Lesson Planning: Educators can use tools like ChatGPT to draft lesson plans, generate ideas for activities, and find relevant teaching materials.

Professional Development: AI provides teachers with resources and training opportunities, helping them stay updated with the latest educational trends. By reducing administrative burdens AI enables teachers to concentrate on mentoring and inspiring students.

Innovation, both technological and procedural, is equally critical. Integrating cloud-based systems, mobile apps for attendance and communication, and digital dashboards for monitoring school performance can simplify complex administrative tasks and improve transparency (World Bank, 2022). Platforms such as OpenEMIS and EduTrac, already deployed in low-resource contexts, offer practical examples of innovation in action (UNESCO, 2021).

Oloruntoba and Akinode (2020) developed a fingerprint-based electronic attendance monitoring system to address the inefficiencies of manual class attendance in Nigerian higher institutions. Their study at the Federal Polytechnic, Ilaro, demonstrated that biometric identification reduced class skipping, improved academic performance, and offered a more efficient use of resources compared to the manual method. They recommended full implementation of such systems to ease the burden of attendance management in higher education.

Equally essential is creativity in educational leadership. Creative leadership empowers administrators to challenge outdated norms, design locally relevant solutions, and respond with flexibility to dynamic educational needs (Adebayo, 2014). This mindset fosters experimentation, collaboration, and inclusion crucial in a diverse and evolving educational landscape like Nigeria's. Creativity in educational administration involves the ability to generate novel solutions to systemic challenges in school governance, leadership, and resource management. It encourages school leaders to think beyond bureaucratic norms, using unconventional methods such as gamification in staff training, multimedia dashboards for data visualization, and community-driven innovation. For instance, during the COVID-19 pandemic, several schools in Nigeria leveraged WhatsApp, local radio, and mobile announcements to maintain instructional continuity an act of administrative creativity born out of necessity (UNESCO, 2023). Therefore, embedding creativity into policy and practice

fosters a more adaptive and resilient education system. As Robinson (2006) argues, creativity is as fundamental to education as literacy and should be central to school leadership. Furthermore, research has shown that environments that support autonomy, idea exchange, and recognition of innovation tend to nurture creative administrators (Amabile, 1996 & Beghetto, 2013). In the Nigerian context, inclusive leadership that values teacher input and community collaboration has been linked to more innovative school cultures (Okoye & Okechukwu, 2021).

By integrating AI, innovation, and creativity, Nigeria can create a future-ready administrative system that is intelligent, responsive, and aligned with global standards. This transformation is not merely technological but also cultural, requiring a policy shift, digital investment, and the empowerment of education leaders. For instance, Lagos state recently launched a Digital Teaching Hub equipped with live-stream censors, digital mentorship, and teaching. The Lagos state ministry of Education in Collaboration with Microsoft and Oracle, equipped some secondary schools with digital learning platforms and administrative tools. These initiatives, although limited in reach, demonstrate that AI-driven dashboards and dual-based tools can be interpreted with school systems when political will and partnerships are in place. However, without broader policy support, many rural schools remain excluded from these benefits.

The Education Sector Support Programme in Nigeria (ESSPIN), a UK's Department for International Development (DFID) backed reform initiative, piloted an SMS-based monitoring system in 2014–2015 that enabled local officials to scan and upload attendance data using smart phones. The data were then synced to a public portal, offering real-time visibility into pupil and teacher attendance an innovative approach to enhancing transparency and responsiveness in school administration (CGA Technologies, 2015).

This pilot addressed two key administrative bottlenecks:

- It provided timely and verifiable data on school attendance, helping authorities identify issues such as teacher absenteeism or student dropout more quickly.
- It showcased how even simple mobile technologies can enhance transparency and responsiveness in educational administration, offering a replicable model for low-resource contexts.

Conclusion

Nigeria's education system requires a transformative administrative approach to overcome persistent inefficiencies and limited technological adoption. The integration of artificial intelligence, innovation, and creativity can reposition educational administration as more efficient, data-driven, and learner-centered. Beyond technology, this shift demands adaptive leadership and policy support that prioritize digital infrastructure, capacity development, and inclusive access. Introducing basic AI tools for administrative tasks can reduce workload pressures on school leaders and improve institutional effectiveness. Further research into localized AI solutions is recommended to guide scalable and sustainable national educational reforms

Policy Suggestions and Strategic Actions

To enhance the transformation of educational administration in Nigeria through artificial intelligence, innovation, and creativity, a coordinated and forward-looking policy approach is essential. The following policy suggestions are proposed to guide national, state, and institutional stakeholders:

- **Develop a National Policy Framework for Artificial Intelligence in Educational Administration:** It is suggested that a national framework be developed to guide the adoption and use of artificial intelligence in educational administration. Such a framework should provide clear direction on ethical data management, system integration, accountability, and cybersecurity, while remaining adaptable to Nigeria's educational context.
- **Improve Digital Infrastructure to Support Intelligent Administrative Systems:** Governments are encouraged to strengthen digital infrastructure by expanding access to reliable internet connectivity, stable electricity supply, and appropriate digital tools in educational institutions. Priority should be given to underserved and rural areas to ensure balanced and equitable implementation.
- **Strengthen Capacity Building for Educational Administrators:** It is suggested that continuous professional development programmes be institutionalized to equip educational administrators with relevant digital competencies, data-driven decision-making skills, and innovative leadership capacities necessary for AI-supported administration.
- **Promote Innovation-Driven Administrative Practices:** Educational institutions may consider establishing innovation units or digital transformation teams that support creative problem-solving and experimentation in administrative processes. Leadership practices that encourage flexibility, collaboration, and responsible innovation should be promoted.
- **Adopt Data-Informed Decision-Making in Educational Administration:** Institutions are encouraged to integrate AI-enabled data analytics into planning, monitoring, and evaluation processes. The effective use of administrative data can enhance transparency, efficiency, and responsiveness in decision-making.
- **Encourage Strategic Partnerships and Collaboration:** It is suggested that educational institutions and government agencies foster strategic partnerships with technology firms, research organizations, and other relevant stakeholders to support the development, adaptation, and sustainability of AI-based administrative solutions.
- **Implement AI Solutions through Pilot Projects:** Policymakers and institutional leaders are encouraged to adopt a phased approach to AI implementation by piloting new administrative technologies in selected institutions before large-scale deployment. This approach allows for contextual learning and informed policy adjustments.
- **Ensure Equity and Inclusiveness in AI-Driven Reforms:** AI-related policies and initiatives should be guided by principles of equity and inclusiveness. Deliberate efforts should be made to ensure that all institutions, regardless of location or resource level, benefit from innovations in educational administration.

Overall, the adoption of these policy suggestions can contribute to the modernization of educational administration in Nigeria while fostering efficiency, transparency, and creativity. When strategically implemented, they can support the development of a

resilient and forward-looking education system aligned with national development aspirations.

References

- Adebayo, F. A. (2014). Managing education for national transformation: Challenges and prospects. *Nigerian Journal of Educational Administration and Planning*, 14(3), 55–67.
- Adiguzel, T., Kaya, M. H., & Cansu, F. K. (2023). Revolutionizing education with AI: Exploring the transformative potential of ChatGPT. *Contemporary Educational Technology*, 15(3), ep429. <https://doi.org/10.30935/cedtech/13152>
- Akmese, O. F., Kor, H., & Erbay, H. (2021). Use of machine learning techniques for the forecast of student achievement in higher education. *Information Technologies and Learning Tools*, 82(2), 297-311.
- Amabile, T. M. (1996). *Creativity in context: Update to the social psychology of creativity*. Westview Press.
- Attah, S. (2021). Bridging the Digital Divide in Nigerian Education. *Nigerian Journal of Educational Technology*, 8(1), 12-24.
- Beghetto, R. A. (2013). *Creativity in the classroom: An evidence-based guide for teachers*. Cambridge University Press.
- Brown, M., McCormack, M., Reeves, J., Brook, D. C., Grajek, S., Alexander, B., & Weber, N. (2020). 2020 Educause Horizon Report Teaching and Learning Edition (pp. 2-58). EDUCAUSE.
- CGA Technologies. (2015). *Nigeria School Attendance Monitoring System Pilot (ESSPIN–DFID)*. Developed under the Education Sector Support Programme in Nigeria.
- Chan, K. S., & Zary, N. (2019). Applications and challenges of implementing artificial intelligence in medical education: Integrative review. *JMIR Medical Education*, 5(1), e13930. <https://doi.org/10.2196/13930>
- Chen, X., Xie, H., Zou, D., & Hwang, G. J. (2020). Application and theory gaps during the rise of artificial intelligence in education. *Computers & Education: Artificial Intelligence*, 1, 100002. <https://doi.org/10.1016/j.caeai.2020.100002>
- Federal Republic of Nigeria. (2020). *National Policy on Information and Communication Technology (ICT) in Education*.
- Igbokwe, U. (2023). The Role of Technical Expertise in AI Adoption in Nigerian Education. *International Journal of Educational Innovation*, 5(3), 88-97.
- Jegede, O., & Abashi, E. (2019). Internet Penetration and Digital Literacy in Nigerian Schools. *Journal of Information Technology in Education*, 7(4), 101-114.
- Karsenti, T. (2019). Artificial intelligence in education: The urgent need to prepare teachers for tomorrow's schools. *Formation et Profession*, 27(1), 112-116. <https://doi.org/10.18162/fp.2019.a166>
- Lagos State Government. (2023). *Lagos Digital Teaching Hub Initiative*. Lagos State Ministry of Education Report.
- Ogunode, N.J & Gregory, D.M. (2025). Artificial Intelligence (AI) in Educational Administration. <https://journals.researchparks.org/index.php/IJOT> e-ISSN: 2615-8140 | p-ISSN: 2615-7071 Volume: 7 Issue: 2

- Okoye, K. R. E., & Okechukwu, R. N. (2021). Fostering creativity and innovation in Nigerian schools through inclusive leadership practices. *International Journal of Educational Management*, 35(5), 113–129.
- Ololube, N. P. (2015). Educational management, planning and supervision: Model for effective implementation. Owerri: Springfield Publishers.
- Robinson, K. (2006). Do schools kill creativity? [Video]. TED Conferences. https://www.ted.com/talks/ken_robinson_do_schools_kill_creativity
- UNESCO. (2021). Education for Sustainable Development in Africa – Country Report: Nigeria. United Nations Educational, Scientific and Cultural Organization.
- UNESCO. (2023). Reimagining our futures together: A new social contract for education. <https://unesdoc.unesco.org/ark:/48223/pf0000379707>
- World Bank. (2022). Education Sector Analysis: Nigeria. Washington, D.C.: World Bank Group.