

Leveraging Artificial Intelligence in Educational Planning and Management of Secondary Schools in Nigeria

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Abstract

Artificial Intelligence (AI) has emerged as a transformative tool in educational planning and management, offering innovative solutions to enhance efficiency, optimize resources, and improve learning outcomes. As secondary schools in Nigeria face increasing demands for quality education and effective administration, AI-driven systems present opportunities for automating administrative tasks, personalizing learning experiences, and facilitating data-driven decision-making. However, despite its potential, the integration of AI into Nigeria's secondary school system remains limited due to challenges such as infrastructural deficits, data privacy concerns, algorithmic biases, and resistance to change among educators and administrators. This paper explores the role of AI in educational planning and management of secondary schools in Nigeria, examining its relevance, current implementation status, and associated challenges. It also outlines strategic solutions to overcome these barriers, including professional training, robust data protection policies, and gradual AI adoption through pilot programs. Furthermore, the paper provides specific recommendations for educational planners, school managers, teachers, students, and key education stakeholders to ensure effective AI integration for enhanced educational outcomes. The study concludes that while AI adoption in secondary schools in Nigeria is still in its infancy, its potential to revolutionize education is undeniable, provided the challenges are systematically addressed.

Keywords: Leveraging, Artificial Intelligence, Educational planning and management.

Introduction

Education drives social, economic, political, religious, and technological development of nations. The actualization of the goals of education warrants robust and efficient planning and management mechanisms (Osiesi, 2023). Gregory and Jegede (2021) submitted that educational planning and management form the foundation of successful schools, institutions, and organizations. This underscores their importance in achieving the objectives of education in Nigeria. As educational institutions face increasing demands for efficiency and quality, the role of AI and technology has become crucial. The adoption of AI in educational planning and administration is transforming how institutions manage processes, engage with stakeholders, and deliver educational content (Ajuwon et al., 2024). AI-driven tools streamline administrative tasks,

automate routine operations, and provide data-driven insights that enhance decision-making and strategic planning (Hwang & Chen, 2020).

Despite the importance of effective educational planning and management, secondary schools in Nigeria continue to face significant inefficiencies in administration, resource allocation, student performance tracking, and decision-making processes (Adelana & Akinyemi, 2021). Traditional management approaches often rely on manual record-keeping, inconsistent data monitoring, and slow response mechanisms, which hinder the smooth operation of schools. These inefficiencies contribute to poor educational outcomes, limit teacher effectiveness, and weaken institutional performance, ultimately affecting students' learning experiences and future opportunities.

Artificial Intelligence presents a promising solution to these challenges by automating administrative processes, optimizing resource management, and providing data-driven decision-making support. However, the integration of AI in Nigeria's secondary schools remains minimal, largely due to infrastructural deficits, inadequate AI literacy among educators, resistance to change, and ethical concerns such as data privacy and algorithmic bias (Fullan, et al., 2023; Atobatele et al, 2024; Owoade & Oladimeji, 2024). The absence of a structured approach to AI adoption further exacerbates these challenges, leaving many schools reliant on outdated methods that fail to meet the demands of modern education. If these issues persist, Nigerian secondary schools may continue to lag in global educational advancements, reducing their capacity to equip students with the necessary skills to thrive in an increasingly digital world.

The growing complexity of secondary school administration in Nigeria necessitates the adoption of modern, data-driven solutions that can enhance efficiency, transparency, and productivity. AI offers unique capabilities that go beyond traditional administrative approaches by automating repetitive tasks, analyzing vast amounts of educational data, and providing actionable insights for school management (Awofiranye, 2024). Unlike conventional methods, AI-driven systems can track and predict student academic performance, helping educators identify learners who need additional support (Adelana & Akinyemi, 2021). Additionally, AI enhances administrative efficiency by streamlining grading processes, automating attendance tracking, and optimizing timetable scheduling, thereby reducing the workload on teachers and allowing them to focus more on instructional activities.

Beyond administrative functions, AI contributes to personalized learning by adapting instructional content to meet the unique needs of students. AI-powered intelligent tutoring systems can provide real-time feedback, recommend customized study plans, and create an interactive learning environment that fosters deeper student engagement (Olatunde-Aiyedun, 2024). In many developed countries, the integration of AI in educational management has significantly improved institutional efficiency, ensuring data-driven decision-making and better student outcomes. Given Nigeria's expanding student population and the persistent challenges of teacher shortages and inefficient resource allocation, AI presents an opportunity to bridge these gaps, improve school governance, and enhance the overall quality of secondary education (Fullan, et al., 2023). However, to fully harness AI's potential, it is imperative to address barriers such as limited infrastructure, lack of AI expertise among educators, and ethical concerns related to data security and bias. This underscores the need for well-defined policies and strategic initiatives to facilitate AI adoption in Nigeria's education sector.

This study, therefore, seeks to examine how AI can be leveraged to optimize educational planning and management, address existing inefficiencies, and enhance overall school administration in Nigeria. The study further investigates how AI-powered tools such as automated

grading systems, predictive analytics, intelligent tutoring, and school management platforms help in optimizing school administration. Lastly, it proposes strategic solutions to overcome the barriers to AI adoption and ensure its responsible and sustainable implementation in secondary school management.

By addressing these objectives, this study provides insights that will be valuable to policymakers, school administrators, educators, and stakeholders in the Nigerian education sector. The findings will inform decisions on how AI can be effectively integrated into school management systems to improve efficiency, enhance learning outcomes, and drive the future of secondary education in Nigeria.

Conceptual review

Artificial Intelligence

Artificial Intelligence (AI) has emerged as a dynamic force capable of reshaping social interactions, particularly in education. AI refers to the development of computer systems capable of performing tasks that typically require human intelligence (Igbokwe, 2023). These tasks include learning, reasoning, problem solving, perception and natural language understanding (Adelana & Akinyemi, 2021). Ogunode (2023) defined AI as programs designed with human-like intelligence and structured in forms of computer, robot, or other machines to aid in provision of any kind of service or tasks to improve social economic and political development of the society. Artificial Intelligence technologies encompass various techniques and approaches, such as machine learning, deep learning, natural language processing, computer vision and robotics. Olatunde-Aiyedun (2024) explained that these technologies enable computers to analyze vast amounts of data, recognize patterns, make predictions and automate complex processes. Fullan, et al., (2023) elucidated that Artificial Intelligence has applications across numerous fields, including health care, finance, transportation, customer service and education. It has the potential to transform industries, improve efficiency and create new opportunities (Igbokwe, 2023). Bali, et al (2024) viewed AI as the ability of a computer or machine to mimic the capabilities of the human mind – learning from examples and experience, recognising objects, understanding and responding to language, making decisions, solving problems – and combining these and other capabilities to perform functions a human might perform, such as greeting a hotel guest or driving a car.

In the educational context, AI includes applications such as intelligent tutoring systems, predictive analytics, and automated administrative tools (Nwoye et al, 2024). Srinivasa, et al (2022) posited that the adoption of AI technologies in education seeks to enhance knowledge acquisition, leading to a surge in online learning. In Nigeria, Artificial intelligence has brought so many opportunities in areas of Education such as students' activities, lecture note, report and memo writing as well as project writing (Abayomi et al, 2021; Sanusi et al., 2022), security (Falode et al., 2021), Health (Muhammad et al., 2021; Anazodo et al., 2022). Nwoye, et al (2024) submitted that AI systems not only answer questions and solve problems but also devise plans and perform tasks requiring intelligence akin to that of humans. This means that AI can be leveraged in the planning and management of education in Nigeria. Mureşan (2023) noted that AI has revolutionized administrative processes, increasing productivity and capabilities. AI-driven bots can monitor prospective students, facilitate communication between institutions and applicants, guide them in selecting suitable courses, and assist them throughout the enrolment process (Sanusi et al, 2022). Furthermore, AI systems can manage and update student records, including grades and attendance, while also assisting in creating timetables based on available faculty, room slots,

and class schedules (Arya, 2024). By automating these tasks, AI reduces the burden on administrative staff, enabling them to focus on more complex matters.

However, several research pointed out some of the issues that prevent AI from being widely used in Nigeria, including lack of awareness, lack of system or field knowledge, lack of computing resources, and lack of trust in AI as a new tool in education and its management.

Educational Planning and Management

Educational planning is essential as it ensures the success of the educational institutions. Chakma (2019) noted that educational planning, in its broadest sense, is the application of logical and methodical analysis to the process of educational development in order to increase education's effectiveness and efficiency in meeting the needs and objectives of students and society at large. Educational Planning and Management (EPM) is a systematic and intentional process of designing, implementing, and evaluating educational programs, policies, and institutions. It involves planning, management, and monitoring and evaluation to achieve specific educational goals and objectives. Nanbak (2020) submitted that educational planning and management involves leading the school towards development through optimum use of human and material resources, physical sources and principles necessary in achieving all the objectives of the school. In other words, it can be said to be a continuous process that takes into account all aspects of the school (policies, material and human resources, activities, equipment, etc.) and integrates them into achieving educational goals. EPM encompasses various functions, including needs assessment, goal setting, resource allocation, curriculum development, teacher management, infrastructure management, and monitoring and evaluation. By performing these functions, EPM ensures that educational programs are effective, efficient, and relevant to the needs of students and society.

Effective EPM is crucial for improving educational quality, increasing efficiency, enhancing accountability, and supporting educational reform. It optimizes the use of educational resources, reduces waste, and improves productivity (Tatbotndip, 2020). EPM also promotes transparency, accountability, and responsiveness in educational institutions and systems. Furthermore, it facilitates the implementation of educational reforms, innovations, and policies. By adopting a systematic and intentional approach to EPM, educators, policymakers, and administrators can work together to create more effective, efficient, and equitable educational systems that benefit students, teachers, and society as a whole.

Secondary schools

Secondary education is a crucial tier in the hierarchy of education in Nigeria. It is the midway between primary and tertiary schools. It is the form of education that students receive after their primary education and or before their tertiary education (Tatbotndip, 2020). It is intended for pupils between the ages of 11-17. Secondary Education has three years of junior secondary school and three years of senior secondary school. It is the budding ground for future professionals as well as the foundation for the discovering and classification of the specific fields of professions. Some of the salient objectives of secondary education are:

1. The provision of smooth opportunities for primary school leavers to further acquire higher quality education irrespective of their sex, religion, social and ethnic backgrounds.
2. To diversify its curriculum to cater for the variety of talents that are latent in the students to come to light in a productive way.
3. To equip the students with the relevant scientific and technical knowledge to effectively survive in the modern age.

4. To foster national unity with emphasis on the common ties that unite us in our diversity. To inspire students with a high desire for achievement and self-improvement both at school and in later life.
5. To raise a generation of people who should be self-reliant and can think for themselves as well as respect the worldviews of others.
6. To inspire a deep sense of appreciation of the dignity of labour among citizens as well as create a great sense of national consciousness.

The above objectives are very noble objectives and they are critical for the growth and development of any society or nation.

Relevance of Artificial Intelligence in Secondary School

The relevance of AI in secondary schools cannot be over emphasized. They include:

Enhancing Student Learning and Personalization: AI facilitates personalized learning experiences by adapting instructional content to individual student needs, strengths, and learning styles. AI-powered tools such as adaptive learning platforms analyze student performance and provide tailored recommendations, ensuring that learners receive targeted support. This individualized approach enhances comprehension, retention, and overall academic performance (Olatunde-Aiyedun, 2024).

Furthermore, AI-driven tutoring systems offer students on-demand academic assistance. Intelligent tutoring systems, such as Carnegie Learning and Squirrel AI, provide step-by-step guidance and instant feedback, allowing learners to grasp difficult concepts at their own pace. AI-powered chatbots and virtual assistants also help students access learning materials and answer academic queries round-the-clock (Tahir, 2024).

Automating Administrative Processes: AI significantly reduces administrative burdens by automating routine processes such as student enrollment, attendance tracking, and grading. AI-powered attendance systems using facial recognition or biometric data improve accuracy while reducing manual workload (Ajuwon et al., 2024). Additionally, AI tools streamline examination grading, ensuring unbiased and efficient assessments (Sanusi et al., 2022).

Automated scheduling systems further optimize school timetables by considering factors like teacher availability, classroom space, and student preferences. This reduces scheduling conflicts and enhances resource utilization (Pope, 2020).

Supporting Teachers and Professional Development: AI enhances teacher effectiveness by providing instructional support, generating lesson plans, and offering real-time classroom analytics. AI-driven tools analyze student engagement and suggest improvements for teaching strategies. Platforms such as Coursera and Google's AI for Education assist teachers in professional development by providing AI-powered learning modules.

Furthermore, AI enables automated feedback on student assignments, allowing teachers to focus on higher-order tasks such as mentorship and curriculum innovation. By reducing workload and enhancing instructional support, AI empowers educators to improve learning outcomes.

Increasing Accessibility and Inclusion: AI-driven solutions bridge the accessibility gap by providing educational opportunities to students regardless of their socio-economic status or geographical location. AI-powered speech-to-text and text-to-speech applications assist students with disabilities, ensuring an inclusive learning environment. Virtual learning assistants and AI-based translation tools enable students from diverse linguistic backgrounds to access quality education seamlessly (Mureşan, 2023).

Enhancing Decision-Making through Predictive Analytics: AI-driven predictive analytics assist school administrators and policymakers in making data-informed decisions. Machine learning algorithms analyze historical student performance, attendance trends, and resource utilization to forecast future educational needs. This enables efficient budget allocation, staffing projections, and curriculum adjustments, leading to improved institutional planning and management (Olatunde-Aiyedun, 2024).

Current state of AI integration in Secondary Schools

There is a great optimism about the use of AI in secondary schools, however, there is a lag in actually implementing AI in schools. A research by Unegbu et al (2024) found out that the extent of utilization of AI tools like audiopen, canvas magicwrite, curipod, eduaide, quizizz, Socratics, alexa and cortana in schools is low. This shows there is reluctance in the actual utilization of AI in schools. The discrepancy between positive opinions about AI versus active implementation of AI may be as a result of lack of preparedness. Little wonder Arya (2024) noted that educators were less prepared to integrate AI tools in the education process. Similarly, Nwogbo et al (2024) evidenced that school management encourages the integration of AI to enhance school process to a low extent. This is to say that despite the relevance of AI in educational planning and management, the level of its utilization in secondary schools is still low.

Despite slow adoption, some AI-powered platforms are gradually being integrated into Nigeria's secondary education system:

uLesson – A Nigerian-based AI-driven ed-tech platform that provides students with personalized video tutorials and quizzes.

PrepClass – An AI-powered tutoring system that connects students with subject-specific tutors based on performance analytics.

Edves – A digital school management platform leveraging AI to automate administrative tasks, track student progress, and facilitate virtual learning.

Mavis Talking Books – AI-assisted learning tools that provide interactive educational content to improve literacy and numeracy skills.

These platforms demonstrate AI's growing role in enhancing learning, administrative efficiency, and personalized education in Nigerian secondary schools.

Leveraging Artificial Intelligence in Educational Planning and Management of Secondary Schools in Nigeria

To optimize operations and processes in educational planning and management of secondary schools in Nigeria, AI can be leveraged. Some of these AIs include:

AI powdered analytics: Predictive analytics can be leveraged in educational planning and management. For instance, machine learning algorithms can be used to analyze student data and predict academic performance, identifying areas where students may need extra support. Chen (2021) noted that AI systems analyze historical data to predict enrollment trends, helping institutions plan and allocate resources more effectively. Likewise, Ajuwon, et al (2024) elucidated that predictive analytics enable institutions to forecast staffing needs and budget requirements based on data-driven insights. AI can be leveraged to compare educational outcomes and practices across different schools, districts, or regions, identifying best practices and areas for improvement. Also, AI tools can analyze patterns in student performance and institutional finances to optimize staffing levels and budget allocation, ensuring that resources are utilized in the most efficient manner possible (Olatunde-Aiyedun, 2024). This strategic allocation supports institutional goals

and improves overall operational effectiveness. AI can also be leveraged for data visualization. This can be done by utilizing AI-driven tools to create interactive and dynamic visualizations of educational data, helping administrators and educators make data-driven decisions.

AI-driven automation: AI can be leveraged for automated grading of student's achievement tests. Bali, et al (2024); Sanusi et al. (2022) and Srinivasa, et al (2022) posited that AI powered systems can automatically grade assignments and exams, reducing the burden on educators and ensuring consistent, unbiased evaluations. This will also help to provide instant feedback to students. Similarly, AI can be leveraged for personalized learning pathways. AI can be used to create customized learning plans tailored to individual students' needs, abilities, and learning styles. Arya (2024) noted that personalized learning experiences facilitated by adaptive learning systems use AI to tailor educational content and instructional approaches to individual student needs, enhancing engagement and learning outcomes. Fullan (2023) explained that adaptive learning technologies analyze student performance data to provide customized learning paths, thereby addressing diverse learning styles and needs more effectively. Furthermore, automated scheduling tools can create optimized class schedules by considering various constraints such as teacher availability and classroom capacity, leading to more efficient use of resources and improved scheduling accuracy (Pope, 2020). These technologies reduce manual processing and errors, thus enhancing overall administrative efficiency.

AI-powered systems can also be utilized to track student attendance, reducing administrative tasks and improving accuracy. This supports the submission of Ajuwon, et al (2024) that automated attendance systems using facial recognition or biometric data streamline the process of tracking student presence, thereby minimizing administrative errors and saving time.

AI-enhanced teacher support: AI-powered tutoring systems can be leveraged to provide one-on-one support to students, freeing up teachers to focus on more complex tasks. AI-driven tools and technologies can enhance student engagement by providing interactive and personalized learning experiences. For example, AI-based platforms offer real-time feedback and interactive content, which can increase student motivation and participation (Nwoye et al, 2024). Additionally, Fullan (2023) noted that technologies such as learning management systems (LMS) and educational apps facilitate continuous communication between students and educators, contributing to improved student retention and success. AI-driven tools can also be used to assist teachers with tasks such as lesson planning, curriculum development, and student assessment. Again, AI can be leveraged to analyze teacher performance data and provide personalized recommendations for professional development and growth (Bali et al, 2024). According to Culican (2024), AI algorithms can scan large data to tap into the gaps thus creating content that is interesting and trendy. AI can also be used for making content including textbooks, personalized learning materials, and interactive courses according to the target audience. AI tools enable the development of educational material that is based on natural language processing capabilities thus ensuring material that is consistent, concise, and grammatically correct

AI-powered student support: AI-powered chatbots and virtual assistants can be used to provide students with instant support and guidance on academic and administrative matters. Tahir (2024) noted that AI enables delivery of contents more efficiently and flexibly by substituting classroom instruction and providing support for students to learn from anywhere in the world at any time. Students can be provided with mental health and wellness support, such as stress management and anxiety reduction techniques using AI-powered tools. They can be provided with personalized career guidance and counseling, helping them make informed decisions about their future. AI systems can flag students who may need additional support before they fall significantly behind

(Ajuwon et al, 2024). This proactive approach allows educators to implement targeted interventions, potentially reducing dropout rates and improving overall student success.

AI-driven infrastructure: AI can be leveraged in facilities management. For instance, AI-powered sensors and monitoring systems can be used to optimize facilities management, including energy consumption, maintenance scheduling, and space utilization. AI-driven tools can be used to monitor and manage school networks and cybersecurity systems, ensuring the safety and security of student data. Also, AI-powered systems can be leveraged to optimize school transportation routes, schedules, and logistics, improving safety and reducing costs.

Challenges of Utilizing Artificial Intelligence in Educational Planning and Management of Secondary Schools in Nigeria

Despite the promises that AI adoption holds for educational planning and management in secondary schools, some challenges are preventing educational institutions from fully adopting it in their processes and operations. Some of these challenges include:

Data privacy and security concerns: One significant challenge is ensuring the protection of student information and compliance with regulations such as the Family Educational Rights and Privacy Act (FERPA) in the United States and the General Data Protection Regulation (GDPR) in the European Union. As educational institutions increasingly adopt AI technologies, they must handle vast amounts of sensitive data, including personal and academic information about students (Cummings et al., 2021). This raises concerns about the security of data and the potential for breaches. Data protection regulations require that institutions implement robust security measures to protect against unauthorized access and misuse. Compliance with these regulations necessitates comprehensive data management practices, including encryption, secure storage solutions, and strict access controls to prevent data breaches (Igbokwe, et. al., 2024). AI in education presents considerable ethical dilemmas. A significant worry is the collecting and storage of student data by AI systems, which raises critical difficulties with data privacy. AI can enhance the functionality of learning analytics; nevertheless, these systems require substantial amounts of data, including sensitive information regarding students and educators, which raises significant privacy and data protection issues.

Algorithmic bias: One critical challenge in AI adoption is algorithmic bias, which occurs when AI systems produce skewed or unfair results due to biased training data. If AI tools are trained on data that reflect existing social inequalities, they may inadvertently reinforce discrimination in student assessments, admissions, and resource allocation. For instance, an AI-powered grading system trained on past academic records may unintentionally disadvantage students from underprivileged backgrounds.

Resistance to change among educators and administrators: Resistance to change among educators and administrators is another significant challenge in implementing AI and technology. Many educators may be skeptical of new technologies due to concerns about their effectiveness, the potential for increased workload, or fear of being replaced by machines. They may be insufficiently trained in using AI tools in the classroom, hindering their ability to effectively leverage new technology. Educators and administrators may not be familiar with the prompts and commands given to the systems (Arya, 2024).

Infrastructural deficits: Insufficient access to technology, including Personal Computers (PCs) and tablets, hinders the effective deployment of AI-driven educational tools. The inconsistent supply of electricity and inadequate internet access in numerous schools provide significant

obstacles, impeding the effective utilization of AI apps and hampering student's educational advancement.

Issue of inclusion and ease of accessibility: This is because many individuals do not have equal access to technology which can create a disadvantageous position for such individuals. For example, many students in Nigeria do not have access to a smartphone or internet connection which can put them in a disadvantageous position compared to those who have such facilities. Besides the socio-economic status of students, geographical location can also be a factor in access to AI-based education. This hinders the utilization of AI in educational planning and management of secondary schools in Nigeria (Awofiranye, 2024).

Dehumanizing the learning experience: A decreased dependence on teachers for instance, is a challenge since AI despite its capacity cannot replace the need for human teachers. The teacher's role is important not only for education but also for shaping the students' careers. Therefore, AI brings a challenge as a decreased dependence on teachers means a decreased focus on students' moral and personality development (Adlawan, 2024).

Inability of students to explore their full potential: This is because if students start depending too much on AI-based education, it will limit their critical abilities including thinking, logic, and memory which is a big drawback. In other words, students will be depending too much on machines which can hinder their learning and making full use of their potential (Awofiranye, 2024).

Cost factor: This is another challenge and cannot be ignored. Provision of the initial outlays for software and cloud support is very costly for educational systems. Again, the costs for continuous employee training are expensive. Also, ongoing training of the AI system be costly if organizational processes change. Since there are several technology options, hence it is a difficult decision to restrict the potential options to a few.

Strategies to curb the challenges of Utilizing Artificial Intelligence in Educational Planning and Management of Secondary Schools in Nigeria

Some of the strategies for curbing the challenges of utilizing artificial intelligence in Educational Planning and Management of secondary schools in Nigeria include:

Implementing robust data protection measures: Addressing data privacy challenges requires implementing robust data protection measures, ensuring fairness and transparency in AI systems. Additionally, institutions must obtain informed consent from students and parents regarding the collection and use of personal data. The integration of robust procedures must be implemented to safeguard student privacy, guaranteeing the secure management of sensitive information.

Targeted training and professional development programs: Overcoming the resistance to change among educators and administrators involves addressing these concerns through targeted training and professional development programs that emphasize the benefits of AI and technology and demonstrate how these tools can enhance rather than replace human roles. Providing support and resources to help educators and administrators adapt to new technologies is essential for successful implementation. This includes offering hands-on training, creating opportunities for feedback, and fostering a culture of collaboration where technology is viewed as an aid rather than a threat. Programs that provide training and support for staff can help overcome resistance and ensure that technology is used effectively to enhance educational outcomes.

Pilot testing and iterative refinement: Challenges such as algorithmic biases must be addressed through pilot testing, professional development, and iterative refinement (Ajuwon et al, 2024). By learning from both successes and setbacks, educational institutions can enhance their

administrative practices and improve educational quality, ultimately creating more efficient and effective learning environments. To mitigate bias, continuous auditing of AI algorithms, diversity in training data, and human oversight in AI-driven decisions are necessary.

Adequate funding: Provision of adequate funds to take care of the cost of the initial outlays for hardware, software and cloud support and other ICT accessories needed for optimal management of secondary school operations and processes is critical. Sufficient provision of funds will also ensure regular continuous employee training. This will make employees better equipped and prepared to leverage AI in school operations and processes.

Adequate reorientation of students: Students need to be reoriented. They need to be sensitized and made to understand that AI should enhance or complement their efforts. Therefore, they are not supposed to depend too much on AI-based tools as this may limit their critical abilities. They should see AI tools as complementary or else it will hinder their learning and prevent them from maximizing their potentials.

Conclusion

The integration of AI into the planning and management of secondary schools in Nigeria holds immense potential for transforming the education sector. By automating administrative processes, enhancing personalized learning, and providing data-driven insights, AI can improve efficiency and learning outcomes. However, challenges such as infrastructural deficits, data privacy concerns, and resistance to change must be addressed through targeted policies, professional training, and gradual AI adoption strategies. With a strategic and ethical approach, AI can revolutionize secondary education in Nigeria, ensuring a more efficient, inclusive, and innovative learning environment.

Recommendations

1. It is recommended that educational planners develop a national AI-in-Education framework that mandates the integration of AI into secondary school curricula while setting ethical guidelines for AI use in planning, teaching, learning, and management. This framework should include policies on teacher training, student data protection, and equitable AI adoption across all regions.
2. It is recommended that school managers deploy AI-powered school management systems to streamline administrative tasks such as automated student attendance tracking, AI-assisted timetable scheduling, and predictive analytics for academic performance monitoring, ensuring data-driven decision-making.
3. Students should actively engage with AI-powered adaptive learning platforms like uLesson and PrepClass, which offer personalized study plans and real-time feedback, enabling them to improve their understanding of complex subjects at their own pace.
4. Teachers should incorporate AI-driven assessment tools such as automated grading systems and intelligent tutoring assistants to provide instant, personalized feedback to students, helping to identify learning gaps and improve instructional strategies.
5. It is recommended that education stakeholders (government, NGOs, and the private sector) establish a national AI education fund to support the procurement of AI-enabled educational tools, provide internet access in underserved schools, and sponsor AI literacy programs for students and teachers, ensuring inclusive and sustainable AI integration in Nigeria's secondary schools.

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