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EXPLORING THE ADOPTION AND INTEGRATION OF AI-POWERED TOOLS IN SCHOOL ADMINISTRATION IN ENUGU STATE NIGERIA: CHALLENGES, BENEFITS AND BEST PRACTICES

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Abstract
This paper explores the adoption and integration of AI-powered tools in school management and administrative tasks in secondary schools. The paper further examined AI-powered tools application on school management, benefits and best practices for successful integration of AI tools on school management and administrative tasks. Based on the findings from both print and online publication, the paper concluded that AI-powered tools can lead to effective and efficient data collection, data analysis, problem solving, decision making, streamlined parents, teachers and students communicate; students enrollment and registration, resource planning and optimization, enhancing security and safety. Based on the problems, the researcher recommended among other things effective adoption and implementation of AI-Powered tools in school should ensure that it serves as tools for enhancing education rather than replacing human interaction.

Keywords: Artificial Intelligence, AI-Powered Tools, School Administration, Administrative Task and Management Task.

Introduction

In a world rapidly evolving towards digitization, AI has become one of the most important tools reshaping school management and administrative tasks; from improving students' assessment to personalizing learning experiences. Artificial Intelligence (AI) has further become an integral part of our lives, revolutionizing various industries and sectors. From healthcare to transportation, AI has proven its capabilities in enhancing efficiency, streamlining processes, and making informed decisions. Now, it is making its way into the realm of education, specifically in school administration and management.

Artificial Intelligence (AI) entails a digital technology that possess the capacity to undertake tasks that otherwise would have been undertaken using human intelligence. It is a branch of computer science that focuses on creating intelligent machines capable of performing tasks that typically require human intelligence (Russell & Norvig, 2020). It involves the development of algorithms and models that enable computers to analyze data, learn from it, and make informed decisions or predictions through application of AI powered tools (Goodfellow, Bengion & Courville, 2016).

AI-powered tools encompasses various technologies such as machine learning, natural language processing, computer vision, and robotics. These technologies enable AI systems to process and understand vast amounts of data, recognize patterns, and adapt their behavior accordingly. Akpan and Essien (2025) described them as a broad spectrum of technologies such as data analytics, machine learning, and automation which have the capability to considerably impact on decision-making processes in educational institutions for educational purposes. Machine learning, a subset of AI powered tools, plays a key role in enabling computers to learn from data without explicit programming.

By using algorithms and statistical models, machine learning algorithms can analyze data, identify patterns, and make predictions or take actions based on the identified patterns. Cubio (2025) asserted that these AI tools have potential to make learning more personalized for students, help teachers save time and support both decision in schools by use of computer. Computer vision involves teaching computers to interpret and understand visual information, such as images and videos. By using techniques such as image recognition and object detection, AI systems can analyze visual data and extract meaningful insights by use of natural language processor.

Natural language processing (NLP) focuses on enabling computers to understand and interpret human language (Jurafsky & Martin, 2023). It involves the development of algorithms that

can process and analyze text or speech, extract meaning, and generate appropriate responses. Siciliano and Khatib (2016) pointed out that robotics is another aspect of AI that combines hardware and software to create intelligent machines capable of performing physical tasks. These machines can interact with their environment, make decisions, and perform actions based on their programming and sensory inputs.

The capabilities of AI go beyond what traditional computing systems can achieve. AI systems can process and analyze massive amounts of data in real-time, identify complex patterns and trends, make accurate predictions, and automate tasks that previously required human intervention. Understanding the capabilities of AI is crucial in comprehending its potential impacts on school administration and management. Holmes, Bialik and Fadel (2023) asserted that by harnessing the power of AI, educational institutions can streamline administrative tasks, improve efficiency, and make data-driven decisions that enhance the overall educational experience. But there seems to be non-existence of adopting and integrating AI-Powered tools in school curriculum and administration of secondary school in Enugu State of Nigeria, despite the fact that the Executive Governor has introduced Smart School programme in the State.

AI Tools for School Management and Administration

There are numerous AI tools deployed for school management and administration. Smith (2021& 2022) outlined several applications of AI in educational management to include:

1. Personalized learning: AI can be utilized to create customized learning paths for individual students, based on their strengths and weaknesses, learning styles, and interests.
2. Intelligent tutoring systems: AI-powered tutoring systems aid the provision of real-time feedback to students, adapt to their individual learning needs, and track their progress.
3. Student performance prediction: AI algorithms can facilitate the analysis of data on students' performance, attendance, and other factors to predict which students may be at risk of falling behind and intervene early.
4. Automated grading: AI can be adopted in grading multiple-choice and short-answer questions, freeing up teacher time for other tasks.
5. Learning analytics: AI can assist teachers in analyzing students' data to identify trends and patterns, evaluate the effectiveness of teaching methods, and make data-driven decisions.
6. Chatbots and virtual assistants: AI-powered chatbots and virtual assistants can provide students with instant answers to common questions, freeing up teachers and administrators to focus on more complex tasks.
7. Campus safety: AI-powered surveillance systems can detect unusual behavior and potential threats, alerting campus security personnel in real-time.
8. Recruitment and admissions: AI can be adopted in the analysis of applicant data and identification of candidates who are most likely to succeed in a given programme.
9. Financial aid and student services: AI can facilitate the automation of institutions' financial aid applications, identify students who may be eligible for scholarships or other forms of aid, and provide personalized support to students.
10. Curriculum development: AI can be used to analyze trends in the job market and identify the skills and knowledge that students will need in the future, informing the development of new curricula and programmes.

School Administration and Management

School administration is the management of schools' daily operations including overseeing finance, staff and facilities while developing curriculum and ensuring a safe learning environment. Administration is the process of managing and organizing the activities, resources and responsibilities within an organization such as school system to achieve specific goals and objectives efficiently. On the other hand, school management involves controlling and coordinating the efforts of the people working in educational system in properly and efficient manner to ensure that the goals of education

are achieved at minimum cost. Onyali (2022) stated that management is a task of getting results through other people's efforts.

Administrative Tasks in School Administration

AI is revolutionizing school administration by automating routine tasks, optimizing resource allocation, and enhancing communication and collaboration among stakeholders. Administrative Tasks are operational and focuses on maintaining day-to-day business functions. These tasks are often routine and support the broader goals set by management. Quunh Anh (2023) enumerated Administrative tasks to include:

- **Documentation:** filling reports, maintaining records and handling correspondence.
- **Scheduling:** organizing meetings managing calendars and coordinating appointments.
- **Communication:** Handling emails, phone calls and internal memos
- **Data entry and record-keeping:** Updating database and ensuring accuracy.
- **Logistics support:** managing office supplies, travel arrangement and facilities.
- Compliance ensuring adherence to company policies and legal regulations. For instance an administrative assistant organizes a manager's schedule or prepares meeting minutes.

Management Tasks in School Administration

Management tasks and administrative tasks are both essential for smooth operation of an organization but they differ in scope, focus and level of responsibility. Management tasks are strategic and involving planning, organizing, leading and controlling resources to achieve organizational goals. These tasks are typically performed by managers and leaders at various levels (top, middle and frontline managers). Jagreet (2025) stated that management process involves planning, organizing directly and controlling human and material resources to achieve the institution's academic goals.

Benefits of AI-Powered Tools in School Administration

One of the primary benefits of AI in school administration is its ability to streamline administrative tasks. AI-powered systems can handle numerous administrative responsibilities, freeing up valuable time for educators and administrators to focus on more critical aspects of their work. Holmes, Bialik and Fadel (2023) outlined benefits of AI-powered tools to include:

Students' enrollment and registration. AI tool can automate the student enrollment process by analyzing application data, verifying required documents, and generating student IDs (Stone, 2025). This not only reduces administrative burden but also ensures accuracy and efficiency in the enrollment process.

Communication and correspondence. AI chatbots can handle routine inquiries from students, parents, and staff, providing instant responses and assistance. These chatbots can be programmed to answer frequently asked questions, provide information about school events, and even offer basic guidance on academic matters. According to Jagreet (2025), AI Chatbots Communication and engagement facilitates effective communication among students, parents, teachers and administrative staff.

Personalized learning. AI-powered adaptive learning platforms can assess individual student progress, identify areas of strength and weakness, and provide personalized learning recommendations. This enables educators to tailor instruction to meet the unique needs of each student, enhancing learning outcomes. Abdelsalam (2025) asserted that every student learns differently and AI is making it easier to cater to individual needs. The author added that by integrating AI into school management systems, educators can create personalized learning paths for students.

Effective Integration of AI-Powered Tools in School Administration

The effective integration of AI tools in school administration and management holds immense potential for transforming education and enhancing the learning experience. The future of AI in school administration and management is promising. Abdelsalam (2025) stated that emerging technologies like machine learning and natural language processing will further refine administrative task from enrollment management to student engagement. AI has potential to enhance teacher-student

relations and provide predictive analytic for long term planning. Abdelsalam (2025) asserted that integrating AI-Powered tools in school administration involves:

Robotics in education

According to Ouyang and Xu (2022), the integration of robotics in education will increase, enabling interactive and engaging learning experiences. AI-powered robots can assist teachers in the classroom, provide personalized instruction, and facilitate hands-on learning, fostering creativity and critical thinking skills.

Professional development and training

Educators and administrators should receive training and professional development opportunities to enhance their understanding of AI and its applications in education. This will enable them to effectively leverage AI tools and technologies for improved teaching, learning, and school management. According to Gocen *et al* (2025), leaders may direct staff towards new AI tools for self-training, innovative platforms like antenna harness AI to analyze classroom videos and offer targeted feedback, enabling teachers to refine their instructional methods.

Conclusion

AI tools are becoming increasingly prevalent in industries and now escalating into schools, offering a wide range of capabilities and application in teaching and learning environment. In conclusion, though, AI have the potential to transform how we work, communicate and interact with technology, it is important to view AI as a supportive tool that complements rather than replaces human expertise. The researcher was further of the opinion that effective implementation and adoption of the use of AI- powered tools in secondary schools, should ensure that it serves as tools for enhancing education rather than replacing human interaction.

Recommendation

Based on the problems, the researcher recommended that AI-powered tools should be adopted and implemented in secondary schools to meet the Gen Z age of demanding educational curriculum.

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