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Artificial Intelligence (AI) in Educational Management: Applications and Challenges

Abstract

Because of its potential to improve the quality, accessibility, and effectiveness of educational systems worldwide, the incorporation of artificial intelligence (AI) into educational management has drawn the attention of numerous academics in the field. This study examines the uses and challenges of AI in educational management. The study uses resources such as Google Scholar, ResearchGate, ScienceDirect, and Scopus to synthesise material published between 2023 and 2025, employing a scoping review approach. According to the findings, the use of AI in educational management can improve student performance and engagement, automate repetitive tasks, facilitate data-driven decision-making, increase administrative efficiency, improve the quality and efficiency of management work, personalise learning experiences, support equity and inclusivity in education, optimise resources, and facilitate communication and engagement. Nevertheless, its use is hampered by issues like data privacy and security breaches, the digital divide, ethical concerns, high implementation costs, a lack of technical know-how, infrastructure constraints, a lack of AI-integrated curricula, restricted access to technology, and resistance to change. This review highlights the critical need for a more thorough understanding of AI in educational management and identifies key topics, gaps, and future research objectives in the fragmented literature. Future research should examine flexible approaches to integrating AI into educational administration, emphasising the value of ongoing studies in this area.

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1. Introduction

Artificial intelligence (AI) has emerged as a dynamic force with the potential to reshape social interactions, particularly in education (Perpetua, Johnson, Nkiru, Ebere, and Ughamadu, 2025). The term "AI" is difficult to define and can refer to sophisticated computer functions. Marvin Minsky made significant contributions to the AI field, demonstrating that OpenAI's ChatGPT, especially the ChatGPT-4 version, is a remarkable illustration of AI's potential and shows how robots can have natural conversations with people (Stefania-Andreea, 2024). Furthermore, in 1956, John McCarthy coined the term AI in the Dartmouth Artificial Intelligence Conference. The conference officially launched the area of artificial intelligence (Dogan and Arslan, 2025). McCarthy defined AI as the creation of robots that can carry out operations like learning, planning, and problem-solving that normally call for human intelligence (Chui, 2025). According to Dai, Thomas, and Rawolle (2025) expert systems, machine learning, neural networks, deep learning, and other methods are all included under the general "umbrella" concept of AI. Ndalu (2025) describes AI as how robots that are made to understand, learn, reason, and make judgments might mimic human intelligence.

Due to its potential to revolutionise the teaching and learning processes, artificial intelligence (AI) integration in education has gained significant attention in the current academic debate (Stefania-Andreea, 2024). Ajuwon, Animashaun, and Chiekezie (2024) stated that while technology generally refers to digital platforms, data management systems, and communication tools, AI in the educational context encompasses applications like intelligent tutoring systems, predictive analytics, and automated administrative tools. In order to enhance learning outcomes and administrative efficiency, AI technologies, including machine learning algorithms and natural language processing, are being integrated into educational tools and systems (Jantanukul, 2024). Cognitive functions, including thinking, seeing, reasoning, learning, analysing, problem-solving, creating experiences, assessing, and making judgments, are all replicated by AI. AI is quite likely to become a common management tool given these characteristics. Management is intimately related to the idea of AI. Teachers' performance can be objectively evaluated and improved with the use of AI tools in performance management.

According to Yilmaz, Koç, Tekin, Altun, and Aydin (2025), AI is anticipated to improve educational management's efficiency, decision-making, and resource management. The planning, organising, coordinating, directing, and monitoring of school operations, as well as the efficient use of the human and material resources at their disposal to achieve the goals of educational institutions, are all components of education management, according to Okeke (2023). In order to accomplish the intended educational goals and objectives, educational management is the process of organising, planning, directing, and controlling the resources and activities within an educational institution (Ndalu, 2025). Curriculum planning, teacher preparation, student evaluation, and school financing are just a few of the many tasks involved. For educational institutions to operate successfully and efficiently and give pupils a high-quality education, educational management is crucial (Igbokwe, 2024).

With an emphasis on raising the standard and effectiveness of education, the integration of AI and educational management seeks to transform the way that talent is developed. In order to change the current situation of prioritizing skills over abilities in education, AI is being used to improve data collection and processing, upgrade education management information systems, create a more open, equitable, and inclusive learning environment, foster autonomous learning and personalized learning, improve critical thinking, foster innovative thinking methods, collaborate with peers to explore problems, and improve students' practical abilities and levels (Xing, 2023). AI speeds up digital transformation in education management by tackling enduring issues such as operational inefficiencies, a lack of data-driven decision-making, and dispersed stakeholder interaction (Firdaus, Riyadi, Hamin, David, and Nugroho, 2024).

The improvement of educational institutions through the use of these technologies to optimise various aspects of administration, from resource management to student support services, demonstrates the significance of incorporating AI and technology into educational management (Ajuwon, Animashaun, and Chiekezie, 2024). In educational management, AI can be used to improve decision-making, expedite administrative procedures, customise learning opportunities, and raise overall academic results. Administrative duties like scheduling, student enrollment, and record-keeping, for example, can be automated by AI-powered systems, relieving administrators of some of their workload and boosting productivity. Educational administrators may make data-driven decisions about curriculum design, resource allocation, and student support services thanks to AI's ability to evaluate vast amounts of data and produce insightful information (Chukwudi, Aniekan, and Imoh, 2024).

Therefore, it is crucial to do research on the integration of AI in educational management. AI is a potent instrument that has the potential to revolutionise educational management, especially in light of the growing efforts of educational institutions to maximise operational efficiency, enhance educational results, and offer tailored learning experiences (Sain, Sain, and Serban, 2024). By identifying and analysing challenges such as budgetary constraints, infrastructure requirements, and resistance to adopting new technology, this study will offer educational managers a comprehensive understanding of the challenges to AI application. Thus, the goal of this study is to add to the expanding corpus of knowledge by investigating the potential applications of artificial intelligence in educational management as well as the difficulties associated with such implementations.

An overview of educational management and artificial intelligence

Because of its potential to improve the quality, accessibility, and effectiveness of educational systems around the world, the incorporation of artificial intelligence (AI) into educational management has drawn the attention of numerous academics in the subject. Ndalu (2025) investigates how AI might be used to solve important issues in educational administration. The study evaluates the effects of AI-driven management systems on educational results and determines best practices for integrating AI in educational settings by doing a thorough analysis of the body of existing literature. Results show that by facilitating data-driven decision making, lowering operational inefficiencies, and advancing fairness and inclusion in education, artificial intelligence (AI) has the potential to greatly improve the efficacy of educational management. Therefore, the responsible and successful integration of AI into educational management should be ensured by legislators, educational leaders, and technology developers. Yilmaz, Koç, Tekin, Altun, and Aydin (2025) want to examine how AI helps with collaboration, communication, planning, organizing, and decision-making in educational settings. The paper evaluates the benefits and drawbacks of AI-driven management methods by methodically evaluating recent literature. The results demonstrate how AI may improve administrative work, improve communication, and support data-driven decision-making. However, obstacles including the digital gap, data privacy concerns, and ethical considerations continue to be major obstacles to widespread use.

Using a forward-looking methodology and a thorough analysis of the scientific literature, Machkour and Abriane (2025) investigate how artificial intelligence (AI) can revolutionize educational institution management by streamlining decision-making, increasing administrative effectiveness, and customizing learning paths via the analysis of massive datasets. The inherent limits of AI are emphasized, particularly its incapacity to mimic crucial human abilities like empathy, intuition, motivating leadership, and a sophisticated comprehension of human relationships. Therefore, even while artificial intelligence (AI) has many benefits for educational administration, it cannot completely replace the crucial job of the human educational director.

Ogunode and Gregory (2025) looked at the use of artificial intelligence (AI) in educational administration as well as potential issues with its implementation. The study came to the conclusion—based on secondary

data gathered from print and online sources—that the use of AI in educational administration can result in improved security and safety, efficient communication and engagement, efficient data analysis and decision-making, efficient school administration, resource optimization, and student support and intervention. The study also noted that issues that could likely impact the use of AI in educational administration include bias and discrimination, a lack of interpretability and transparency, breaches of data privacy and security, issues with ethical and legal guidelines, a lack of technical expertise and resources, job displacement and a lack of interoperability and compatibility, high maintenance costs, power outages, and erratic internet services.

The use of artificial intelligence (AI) to improve administrative efficacy at Rivers State Universities is examined by Jamaica and Tagbo (2025). The Artificial Intelligence in Educational Management for Enhanced Administrative Effectiveness in Rivers State Universities Questionnaire (AIEMAERSUQ), a structured questionnaire with a 5-point Likert scale, was used to gather data. According to the research, artificial intelligence (AI) techniques including machine learning, natural language processing (NLP), and automated scheduling systems greatly enhance university administrative procedures, decision-making, and resource management.

Perpetua, Johnson, Nkiru, Ebere, and Ughamadu (2025) investigate the use of AI in secondary school management and educational planning, looking at its applicability, state of implementation, and related difficulties. AI-driven technologies offer chances to automate administrative duties, customize learning experiences, and support data-driven decision-making as secondary schools in Nigeria deal with growing demands for high-quality instruction and efficient administration. However, despite its potential, obstacles including inadequate infrastructure, worries about data privacy, algorithmic biases, and reluctance on the part of administrators and teachers to change have made it difficult to fully integrate AI into Nigeria's secondary school system.

Dogan and Arslan (2025) investigate how artificial intelligence (AI) is revolutionizing school administration and leadership. They look at how AI may boost administrative effectiveness, improve digital pedagogy, tailor learning experiences, and improve decision-making. The paper also addresses the difficulties and moral dilemmas—such as prejudice and transparency—that arise when integrating AI into educational leadership. The review suggests methods for putting AI tools into practice that support educational objectives and foster accountability and equity in order to overcome these problems.

The contemporary uses of AI in education, such as chatbots, adaptive systems, and predictive analytics, are examined by Kakungulu (2025). It also draws attention to difficulties like budgetary limitations, moral dilemmas, and the possibility of data bias. The study emphasizes how important it is to incorporate ethical frameworks and promote professional growth in order to guarantee fair and efficient AI deployment. Finally, it looks at upcoming trends, highlighting how AI might revolutionize stakeholder interaction, resource allocation, and innovation while preserving the human element in decision-making.

Through content analysis, Okonkwo (2024) seeks to clarify the numerous ideas, advantages, and disadvantages of artificial intelligence (AI) in the administration of the educational system. gathered information from the literature using the Google Scholar search engine, which indexes most research articles globally. Some of the paper's important findings demonstrate how AI has helped with efficient educational management and enhanced teaching and learning procedures, which calls for more funding and sufficient technology facilities.

Using a mixed-methods approach that combined a systematic literature review and case analysis across two institutions, Firdaus, Riyadi, Hamin, David, and Nugroho (2024) examines the dual role of AI-driven ecosystems in enhancing institutional agility and strengthening stakeholder interactions within diverse educational contexts. The literature review identified key AI applications, such as predictive analytics, adaptive learning, and real-time resource management, as crucial in enabling institutions to effectively

respond to dynamic educational needs. Case studies showed quantifiable improvements, such as a 25% reduction in decision-making time and a 30% increase in administrative efficiency through chatbot integration. Nevertheless, issues like digital literacy gaps, infrastructure limitations, and algorithmic biases underscore the need for ethical governance and inclusive strategies.

In his research on the use of AI in educational management, Prakash (2024) looks at how practices related to student enrollment, engagement, retention, learning facilitation, and cost effectiveness might be investigated. Nevertheless, the study's negative aspects also disparage ethical obligations, disregarded biases, and the urgent need to have employees involved in regular training and development sessions.

The benefits and drawbacks of implementing AI in academic management are examined by Sain, Sain, and Serban (2024), who concentrate on highlighting the opportunities, difficulties, and moral dilemmas related to its application. A mixed-methods research design integrated focus groups and qualitative interviews with quantitative surveys and analysis of institutional performance data. The results show that AI optimises resource allocation, expedites administrative work, and greatly increases operational efficiency. AI also has a positive effect on learning outcomes, which results in observable improvements in student engagement and performance. However, obstacles like a lack of funding, a lack of technical know-how, and opposition to change were noted, in addition to moral issues with algorithmic prejudice and data privacy.

The possibilities, difficulties, and solutions related to the incorporation of AI in the field of education are examined by Feng and Li (2024). AI is transforming the conventional educational landscape with its many advantages, including global access to shared educational resources, automated educational management, and tailored learning experiences. Its implementation does, however, come with a number of serious difficulties, including worries about data privacy, the growing digital gap, and the changing role of educators. This study highlights the necessity of strategic steps to ensure the ethical and fair use of AI in education by analysing both opportunities and difficulties.

The various uses of AI-powered tools in educational planning, administration, and monitoring are examined by Chukwudi, Aniekan, and Imoh (2024). One such usage is the creation of AI models for these objectives using large-scale algorithms. The study also discusses the difficulties in integrating AI-powered technologies in educational planning, administration, and supervision, as well as the roles that administrators play in AI-based school management. Techniques for conquering these obstacles are discussed. AI integration in educational planning, administration, and supervision has the ability to transform educational management, provide school managers with the skills they need in the AI era, improve curriculum development, boost resource administration, and support program oversight.

In order to better serve the requirements of educators and students, Ajuwon, Animashaun, and Chiekezie (2024) examine the vital role that AI and technology play in optimising resource allocation, personalising learning experiences, and streamlining administrative procedures. Administrators can effectively manage student records, monitor academic achievement, and identify at-risk pupils thanks to AI-powered tools that support data-driven decision-making. Adopting AI and technology in school administration is not without its difficulties, though. To guarantee moral and fair use, concerns including data privacy, cybersecurity, and the possibility of algorithmic bias must be properly addressed. Institutions must also spend money on staff training and assistance so they can use these cutting-edge tools efficiently.

Igbokwe (2023) wants to investigate the advantages and difficulties of using AI in school administration. Using a systematic review methodology, the study looks at the literature on artificial intelligence in school management. According to the report, artificial intelligence (AI) offers a number of benefits, such as increased student engagement, learning customisation, and cost effectiveness. But there are a number of drawbacks to AI as well, including moral dilemmas, possible prejudices, and the need to retrain workers.

According to the study's findings, artificial intelligence (AI) has a huge potential to enhance educational administration, but its application requires prudence and care.

Ananyi and Somieari-Pepple's (2023) goal is to investigate the cost-benefit analysis of integrating artificial intelligence into school administration from the viewpoint of leadership. This investigation reveals remarkable success stories from various educational settings, demonstrating the revolutionary potential of AI. AI is a flexible tool that may empower teachers and pupils, as evidenced by success stories from South Africa, Rwanda, Nigeria, Kenya, and Ghana. Planning is necessary due to technical complexity, and transparent data management is required due to ethical considerations. Apprehension can be reduced by investing in teacher development and addressing opposition to change through educated communication. It is morally necessary to guarantee that AI benefits everyone equally. Educational leaders must embrace AI's promise to transform education as more and more AI-driven success stories surface. These tales show how AI will empower students, assist teachers, and promote educational equity in the future. This study provides insights into the prospects and problems of implementing AI in education by looking into the theoretical underpinnings, conceptual frameworks, cost implications, and potential advantages.

In the realm of educational management, Xing (2023) investigates the use cases of artificial intelligence in enhancing teacher training and development, student learning and assessment, and education management and supply. In order to construct the transformation and innovation of artificial intelligence, improve the quality and efficiency of school education management work, and promote high-quality development of education, this study proposes to support the development of new infrastructure for education management, dual empowerment of education and technology, support the reshaping of future forms of education through artificial intelligence, strengthen the cultivation of professional talents in artificial intelligence, attach importance to ethical issues in the application of artificial intelligence in education management, stimulate teachers' high-level thinking and initiative, and lead the next generation of educational artificial intelligence innovation.

From the viewpoint of the educator, Vashista, Gugnani, Bala, and Kumar (2023) examine how AI affects management education and what it means for students and educational institutions. Teachers at management schools and other institutions were interviewed as part of the study's qualitative research technique. The findings demonstrate how teachers see AI's influence on management education. Educators believe AI can enhance decision-making, teaching, and student involvement. They also stress how important it is to humanise AI, ethical issues, and critical thinking in the classroom. According to the report, teachers must get ongoing training and professional development in order to effectively integrate AI into management education. This study clarifies the opinions of management educators regarding the effects of AI. It offers a forum for discussions, policy formation, and strategic planning to harness AI's promise while preserving high standards of instruction and human interaction in management learning settings.

In order to boost operational efficacy and efficiency, Indriastuti, Sahib, and Nuraini (2023) intend to develop and apply a responsive management model that makes use of artificial intelligence. Case studies, system prototype development, and literature analysis were all used in the study process. The study's findings demonstrate advancements in scheduling, resource management, and flexibility in response to the shifting needs of higher education. Artificial intelligence integration speeds up decision-making, improves resource management effectiveness, and, all things considered, offers a solid basis for handling the intricate dynamics of the higher education sector. According to the study's findings, artificial intelligence has a lot of promise for use in the administration of higher education. By increasing operational efficiency, the resulting adaptive model helps educational institutions better respond to the requirements of their students and the dynamics of their surroundings.

Siminto, Akib, Hasmirati, and Widianto (2023) investigate how incorporating AI into education administration might enhance the efficacy, efficiency, and caliber of higher education students' educational

experiences. The research methodology encompasses the application of artificial intelligence (AI) technology in higher education decision-making as well as a comparison of traditional education administration systems with AI-powered systems. The findings demonstrate how artificial intelligence can be used to enhance prediction, data analysis, adaptation, and personalisation skills in curriculum administration, student performance assessment, and the delivery of learning materials that are suited to each student's needs. Learning may be personalised thanks to artificial intelligence. Furthermore, resource management and administrative procedures are now more efficient thanks to the application of artificial intelligence in administration. Universities can enhance the educational experience of students and maximise administrative effectiveness by skillfully implementing artificial intelligence technologies, better equipping them for problems in the future.

2. Research Method

In order to compile the literature on the use and difficulties of AI in educational management, this study uses a scoping review methodology. As a form of knowledge synthesis, scoping reviews map the data on a topic and identify key concepts, theories, sources, and knowledge gaps using a methodical process (A. C. Tricco et al., 2018). The importance of the currently published articles that could serve as meta-synthesis data was investigated in the study. This study looks at publications about the use of AI in educational administration.

The following electronic databases were thoroughly and methodically searched as part of the search strategy: Google Scholar, ResearchGate, ScienceDirect, and Scopus. Only keyword combinations like AI, applications of AI in educational management, and difficulties of AI in educational management or administration were included in the search terms. Because of the recent surge in interest and study on AI in educational management, the search was limited to peer-reviewed journal papers published in English between 2023 and 2025. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were followed in the selection of studies (A. C. Tricco et al., 2018).

Only papers that satisfy the predetermined criteria address the research goals. This selection procedure makes use of the following standards. First, international journals use the open-access publication mechanism. Second, the articles have concentrated on identifying and characterising the major themes and patterns in the literature pertaining to the uses and difficulties of AI in educational management. These articles have mostly been published in the past three years. The papers cover the pertinent bibliographic information, study features, applications of AI in the context of educational management, problems of AI in educational management, and important findings. Figure 1 describes the aspects of the scoping review.

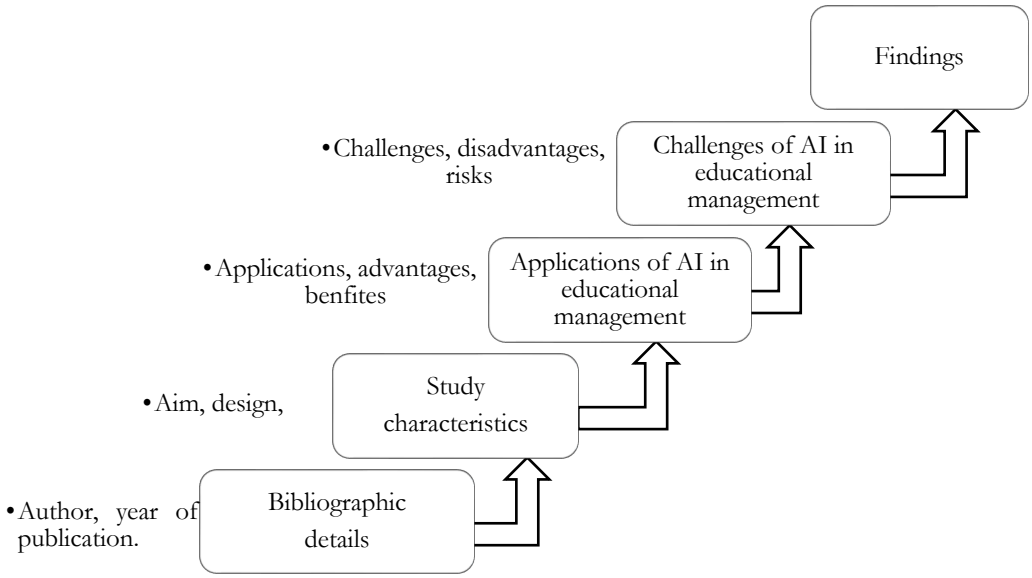

Figure 1. Relevant aspects of the scoping review

The key ideas gleaned from the data were used in the thematic analysis to create an extensive list of topics. According to A. C. Tricco et al. (2018), the results were presented in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) criteria.

3. Research Results

The findings are analysed to ensure they align with the study's objectives. Publish software was used to do a preliminary analysis of the information gathered. The four steps of the PRISMA flow diagram—identification, screening, eligibility, and inclusion —were adhered to while choosing research papers.

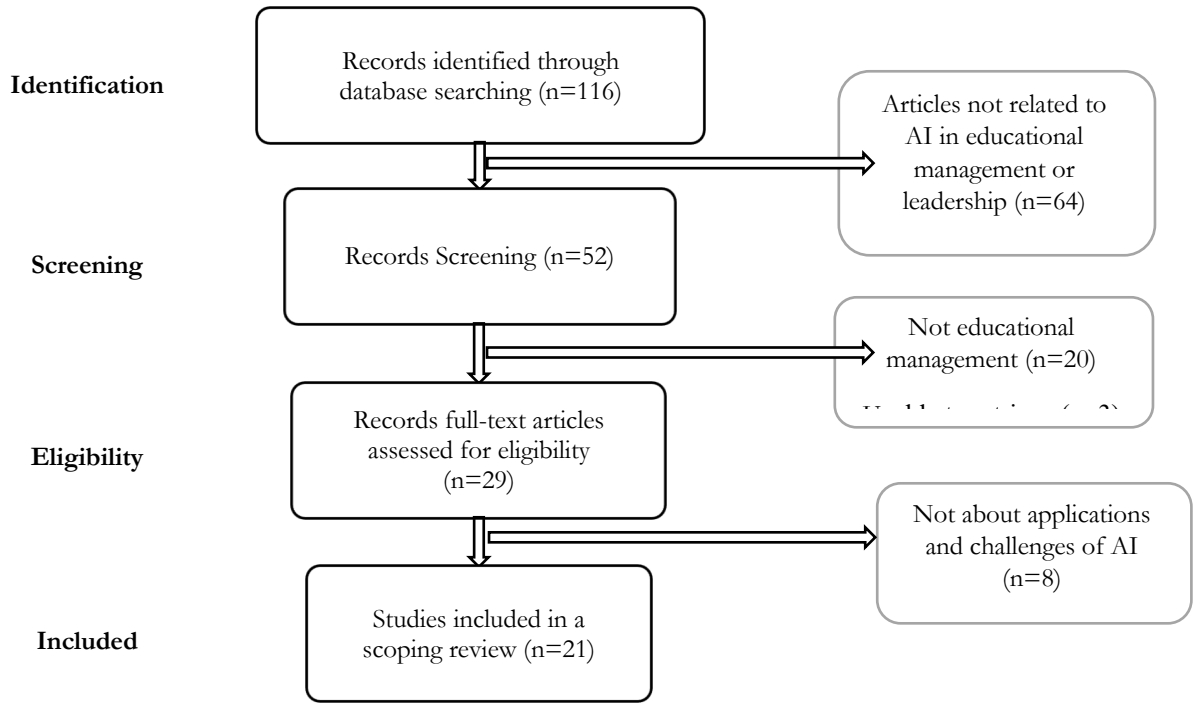

Figure 2. Flow chart of the study

The methodological procedure used to find, evaluate, and include papers for a scoping literature review concentrating on the uses and difficulties of AI in educational management is depicted in Figure 2. The identification part of this method starts with a thorough search across multiple databases, including Google Scholar, ResearchGate, ScienceDirect, and Scopus, which yielded 116 entries. A database search was conducted as the initial phase in the article screening process, yielding 116 papers from Google Scholar (n = 66), ResearchGate (n = 40), ScienceDirect (n = 9), and Scopus (n = 1).

Following a careful analysis of the data found throughout the screening procedure, 52 papers were retained in the original pool. During this polishing stage, 64 papers that were deemed irrelevant to educational leadership or management were removed. 29 full-text publications were evaluated during the eligibility phase since three of them could not be obtained, and 20 of them were not educational management. Eight of these were evaluated, but they were rejected for a number of reasons, such as not being relevant to the study's topic or failing to address the challenges and applications of AI in educational management.

The findings ultimately led to the inclusion phase, a crucial stage when 21 studies were judged appropriate for the scoping review. By following strict inclusion and exclusion criteria, this exacting and systematic technique guarantees the integrity of the research process and improves the trustworthiness of the findings.

To ascertain the applications and challenges of AI in school administration, a scoping literature study of pertinent publications was carried out. Table 1 provides a brief discussion of the twenty-one papers that were ultimately included.

Table 1. Summary of the literature on the Key findings of AI in educational management

No	**Year**	**Author(s)**	**Key findings**	
			Key applications	**Key challenges**
1	2025	Ndalu, U. J.	- Enabling data-driven decision making, - Reducing operational inefficiencies, - Promoting inclusivity and equity.	- Limited access to technology, - Shortage of AI expertise, - High costs of AI implementation. - Lack of AI-integrated curriculum.
2	2025	Machkour, B., & Abriane, A.	- Optimizing decision-making processes, - Enhancing administrative efficiency, - Personalizing educational pathways.	- Resistance to change and organizational complexity.
3	2025	Ogunode, N. J., & Gregory, D. M.	- Data analysis and decision making, - Effective school administrative, - Resource optimization, - Student support and intervention, - Streamlined communication.	- Bias and discrimination, - Lack of transparency, - Data privacy and security breaches, - Inadequate technical expertise, - High cost of maintenance, - Power problem and internet services.
4	2025	Yilmaz, A., Koç, A., Tekin, M. Z., Altun, R., & Aydin,M.	- Optimize administrative tasks, - Streamline communication, - Data-driven decision-making.	- Ethical concerns, - Data privacy issues, - Digital divide.
5	2025	Jamaica, N., J, & Tagbo, S.	- *Improving administrative processes,* - Facilitate *decision-making,* - *Resource management.*	- Data privacy, - Ethical considerations.
6	2025	Perpetua, U. N., Johnson, U. C., Nkiru, U. O., Ebere, A. C, & Ughamadu, U.	- Automating administrative tasks, - Personalizing learning experiences, - Data-driven decision-making.	- Infrastructural deficits, - Data privacy concerns, - Algorithmic biases, - Resistance to change.
7	2025	Dogan, M., & Arslan, H.	- Enhance decision-making, - Personalize learning experiences, - Improve digital pedagogy, - Increase administrative efficiency.	- Bias and transparency
8	2025	Kakungulu, S.J.	- Automating routine tasks, - Enhancing decision-making processes, - Personalized learning experiences.	- Financial constraints, - Ethical considerations, - Potential for data bias.

9	2024	Okonkwo, C.E.	- Data management and integration, - Decision-making, - Personalized learning.	- Inadequate financial support, - Data privacy and security, - Inadequate infrastructure.
10	2024	Firdaus, P. M., Riyadi, S., Hamin, H., David, D., & Nugroho, H.	- Predictive analytics, - Adaptive learning, - Real-time resource management, - Reduction in decision-making time - Administrative efficiency.	- Digital literacy gaps, - Infrastructure limitations, - Algorithmic biases.
11	2024	Prakash, R.	- Customized Learning, - Evaluation based on competence, - Automation.	- Ethical bindings, - Biases.
12	2024	Sain, Z. H., Sain, S. H., & Serban, R.	- Improves operational efficiency, - Streamlines administrative tasks, - Optimizes resource allocation, - Student performance and engagement.	- Financial limitations, - A scarcity of technical expertise, - Resistance to change, - Ethical concerns, - data privacy, - Algorithmic bias.
13	2024	Feng, T., & Li, Q.	- Personalized learning experiences, - Automated educational management, - Global access to educational resources,	- Data privacy, - Digital divide.
14	2024	Chukwudi, U. M., Aniekan, U. R., & Imoh, S. G.	- Streamline administrative processes, - Enhance decision-making, - Personalize learning experiences, - Improve overall educational outcomes.	- Ethical concerns, - Technical complexity, - Resistance to change, - Lack of understanding, - Cost.
15	2024	Ajuwon, O. A., Animashaun, E. S., & Chiekezie, N.R.	- Automating routine tasks, - Streamlining processes, - Optimizing resource allocation, - Personalized learning experiences, - Data-driven decision-making, - Increased student engagement.	- Data privacy, - Cybersecurity, - Potential for algorithmic bias, - Resistance to change.
16	2023	Igbokwe, I. C.	- Improving student engagement, - Personalization of learning.	- Ethical concerns, - Potential biases, - Need for re-skilling the workforce.
17	2023	Ananyi, S. O., & Somieari-Pepple, E.	- Personalization learning, - Streamlining administrative operations.	- Technical challenges, - Resistance to change.
18	2023	Xing, C.	- Quality of management work, - Quality development of education.	- Consider diverse datasets, - Algorithm transparency.
19	2023	Vashista, N., Gugnani, P., Bala, M., & Kumar, A.	- Enabling individualized learning, - Intelligent tutoring, - Data-driven decision-making, - Automation, - Simulation.	- Ethical considerations, - Presence of algorithmic biases.
20	2023	Indriastuti, F., Sahib, A., & Nuraini, R.	- Decision-making process, - Efficiency of resource management.	- Financial investment required, - Ethical issues.
21	2023	Siminto, S., Akib, A., Hasmirati, H., & Widianto, D. S.	- Improve the ability of prediction, - Data analysis, - Personalization, - Student performance evaluation, - Provision of learning resources.	- Privacy and ethics, - Technical skill limitations, - Algorithm transparency, - infrastructure costs, - Change in organizational culture.

Table 1 above identified key findings from reviewing recent literature related to the applications and challenges of AI in educational management. The subheadings below illustrate the core points of these applications and challenges of AI in educational management.

4. Discussion

Applications of AI in educational management

It is imperative that artificial intelligence (AI) be included in educational management, and numerous research have concluded that the following are examples of how AI is being used in educational management:

1. **Automating routine tasks:** Scheduling, grading, and record-keeping are just a few of the administrative duties that educational institutions must perform. Many of these chores can be automated by AI, giving teachers more time to concentrate on instructing and assisting pupils.
2. **Enabling data-driven decision making:** AI algorithms can analyse student performance, attendance, and engagement levels to learn more and forecast future events. Teachers can use this information to help them identify children who are having difficulty, create focused interventions, and make data-driven decisions about curriculum and instructional design. Educational management can benefit from intelligent decision assistance from AI, which can help them make more precise and scientific decisions by forecasting students' learning development and suggesting teacher training, among other things.
3. **Enhancements in student performance and engagement**: In order to identify which students may be at risk of falling behind and to take early action, AI systems can evaluate data on student performance, attendance, and other variables.
4. **Enhancing administrative efficiency:** Jobs like scheduling, registering for classes, and maintaining student information can be aided by AI. Teachers can spend more time instructing because of this technology's ability to expedite and streamline administrative procedures.
5. **Improve the quality and efficiency of management work:** Learning management systems (LMS), automated administrative tools, and predictive analytics are important technologies and techniques. Every one of these AI-powered solutions is essential to raising the effectiveness and calibre of learning environments. In educational administration, predictive analytics has emerged as a crucial instrument. It entails analysing historical data using complex algorithms to find trends that can guide decisions in the future. Finding kids who are at risk is one of the main uses of predictive analytics. AI systems can identify students who might want extra help before they fall far behind by looking at data like attendance records, academic achievement, and engagement levels. The incorporation of AI technologies has led to a substantial evolution in learning management systems (LMS). A variety of features are available on contemporary LMS platforms that are intended to improve the learning environment. These technologies enhance communication between students and teachers, track student progress, and organise and deliver educational information. Personalised learning experiences are made possible by the incorporation of AI into LMS platforms, which modify recommendations and content according to each student's performance and preferred method of learning. AI-driven learning management systems, for example, can offer customised learning pathways, recommend additional resources, and modify difficulty levels to suit the needs of each learner.
6. **Personalise learning experiences:** By evaluating information about each student's learning preferences, interests, and passions, AI may create learning experiences that are customised and suited to their needs. This may help students have a better grasp of challenging sustainability as well as the knowledge and abilities needed to contribute to a more sustainable future, related topics.
7. **Promoting inclusivity and equity in education:** Through the provision of assistive technologies for students with disabilities, AI tools promote inclusive education. Additionally, language translation programs support instruction in multilingual environments.
8. **Resource optimisation**: To guarantee efficiency, AI optimises the distribution of resources such as workers, classrooms, and educational materials.

9. **Streamlined communication and engagement:** In schools, communication is the exchange of information between staff, students, and parents. All members of the school organisation must have unrestricted access to information. With automated alerts and customised messages, AI can improve communication between students, instructors, parents, and administrators in the classroom. To put it another way, AI offers a way to communicate quickly, easily, and without regard to location. Students can complete their tasks and assignments by interacting with staff via email and/or short messaging services (sms). Similarly, management and employees can use computers to perform their tasks without physically meeting.

Challenges of Application Artificial Intelligence in Educational Management

According to the reviewed papers, there are a number of obstacles to implementing AI in educational management:

1. **Data privacy and security breaches:** Access to vast volumes of data, including private student, professor, and staff information, is necessary for the application of AI in educational administration. This data is susceptible to cyberattacks and other security lapses, which could reveal private information and erode stakeholders' faith and confidence.
2. **Digital divide:** The digital divide that results from unequal access to technology across urban and rural areas makes it difficult for educational managers to guarantee that every student has equal access to AI-driven learning resources and tools nationwide.
3. **Ethical considerations:** Concerns about data privacy, equity, and responsibility are among the ethical issues brought up by the application of AI in education. For instance, privacy and data protection issues may arise when AI systems are trained using student data. AI algorithms with biases may treat particular student groups unfairly, exacerbating already-existing disparities. For AI to be integrated into educational administration in a responsible and equitable manner, these ethical issues must be adequately addressed.
4. **High costs of AI implementation**: One of the biggest obstacles facing many educational institutions is the expense of purchasing, creating, and sustaining AI technologies. Education is frequently underfunded by the government, and private schools may find it difficult to make the required expenditures in AI. Educational management frequently have to put basic necessities ahead of technical advancements like AI due to a lack of resources. This may postpone the use of AI technologies that could improve educational administration and results.
5. **Inadequate technical expertise**: Teachers and administrators with the know-how to incorporate and oversee AI technologies in classrooms are in limited supply. The lack of AI training programs for educational purposes makes it difficult for educational managers to successfully launch and maintain AI projects. It takes a large investment in professional development and training to increase teachers', administrators', and students' ability to use AI successfully, yet this is frequently lacking because of financial limitations and legislative gaps.
6. **Infrastructure limitations:** Adopting AI necessitates significant infrastructure, which not all educational settings may have on hand. This infrastructure includes strong data management systems and qualified personnel.
7. **Lack of AI-integrated curriculum:** Digital literacy and AI concepts, which are crucial for educating pupils for the future, are not properly integrated into the existing curriculum. The difficulty for educational administrators is to update and modify curriculum to incorporate AI-related knowledge while making sure it supports sustainable development objectives.
8. **Limited access to technology**: The technological infrastructure required to successfully adopt AI is lacking in many educational institutions. This includes, particularly in rural places, inadequate access to computers, internet connectivity, and dependable electricity. The use of AI tools in education continues to be a major challenge in the absence of these fundamental components.

9. **Resistance to change:** is another significant obstacle, since administrators and teachers may be reluctant to embrace new technology because they fear losing their jobs or have questions about the efficacy of AI solutions. These worries may make it more difficult to successfully integrate AI. Misconceptions are frequently at the heart of worries about job relocation. It is crucial to convey that AI is meant to enhance, not replace, the skills of instructors. Regular administrative duties can be handled by AI, freeing up teachers to concentrate on individualized instruction and mentoring. These worries can be allayed by providing educators with the necessary training and professional development opportunities to enable them to properly use AI. Stakeholders may oppose the introduction of new technology like AI because they are dubious or worried about how it will affect their jobs. Because of this opposition, it may be challenging to secure support for these tools and successfully incorporate them into current workflows.

5. Conclusion

The study brought attention to the important uses and difficulties of artificial intelligence (AI) in educational management. AI has a lot to offer educational management, according to the results of a scoping review methodology. These include: automating repetitive tasks, facilitating data-driven decision making, improving student performance and engagement, increasing administrative efficiency, improving the quality and efficiency of management work, personalizing learning experiences, fostering inclusivity and equity in education, optimizing resources, and streamlining communication and engagement. Significant obstacles accompany these applications, such as breaches in data privacy and security, the digital divide, ethical issues, high implementation costs of AI, a lack of technical know-how, infrastructure constraints, a lack of curriculum integrating AI, restricted access to technology, and resistance to change.

The urgent need for a more thorough understanding of AI in educational management is highlighted by this review, which also identifies key applications, challenges, and future research directions. By implementing transparent, accountable, and ethically guided AI applications, educational managers can drive positive outcomes that align with institutional goals. This research suggests that the government should allocate adequate funds to education in order to make AI essay implementable, so it's necessary to develop the capacity of teachers, administrators, and students to use AI effectively through comprehensive training programs. Future studies should explore adaptive strategies for implementing AI in educational management, highlighting the significance of ongoing research in this field.

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