Artificial Intelligence in Education: A Threat for Teaching

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ABSTRACT

The increasing integration of artificial intelligence (AI) in higher education has significantly reshaped instructional delivery, creating both opportunities and challenges for teaching and learning. This study examines the role, adoption, and implications of AI-driven technologies within contemporary educational environments, with particular focus on teachers' perceptions and classroom practices. Employing a mixed-method research design, data were collected from thirty purposively selected teachers using a researcher-developed questionnaire. Quantitative findings revealed the use of AI-powered tools such as ChatGPT, educational games, chatbots, Grammarly, and YouTube videos in instructional processes. Qualitative analysis, guided by Braun and Clarke's six-step thematic approach, highlighted key advantages of AI integration, including enhanced personalized learning, improved student engagement, and the availability of virtual instructional support. However, the findings also underscore notable limitations, such as reduced human interaction, concerns over digital literacy, and issues related to technological access and institutional readiness. Furthermore, the study critically examines ethical considerations surrounding AI adoption, including data privacy, academic integrity, and algorithmic bias. Overall, the study provides a comprehensive synthesis of empirical evidence and practical insights, emphasizing that while AI serves as a valuable pedagogical tool, its effective implementation requires careful management to mitigate potential risks and ensure equitable and responsible use in education.

Keywords: *Artificial Intelligence, Higher Education, Instructional Delivery, Teaching and Learning, Educational Technology, Ethics*

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INTRODUCTION

Artificial intelligence (AI) is increasingly redefining the landscape of higher education by transforming how knowledge is generated, delivered, and evaluated. Historically, the integration of information technology into classroom practice has enhanced learning by expanding students' sensory engagement, particularly through visual and auditory means, thereby enriching the overall teaching learning process. Such technologies have enabled more dynamic instructional approaches compared to traditional classrooms, where improvements in teaching quality are often constrained by limited responsiveness to individual student needs and learning difficulties.

However, the emergence of AI represents a more profound paradigm shift, moving beyond conventional digital tools toward intelligent, adaptive, and data-driven systems that can autonomously support, personalize, and optimize learning experiences. In this context, AI is no longer merely a supplementary instructional aid but a transformative force reshaping pedagogical models, institutional strategies, and knowledge production processes (Qu, 2025; Jeong, 2025).

The growing prominence of AI in education is closely aligned with global trends in digital transformation and the pursuit of knowledge economies. International organizations such as UNESCO (2023) emphasize the potential of AI to address persistent educational challenges, foster innovation in teaching and learning practices, and accelerate progress toward inclusive and equitable quality education. Across higher education institutions, AI-driven applications including intelligent tutoring systems, generative AI tools, and learning analytics platforms are being deployed to enhance instructional delivery, support educators, and facilitate individualized learning pathways. Initiatives such as the integration of AI and robotics into university curricula further illustrate how institutions are preparing students for emerging technological landscapes (Dramnesc et al., 2025). Moreover, AI has demonstrated significant potential in specialized domains such as clinical training and language education, where it enhances comprehension, skill acquisition, and academic performance (Shodiyeva, 2026; Rahman, 2026). These developments underscore the expanding role of AI as a catalyst for educational innovation and improved learning outcomes.

Despite these advancements, the rapid evolution of AI technologies presents a range of complex challenges that extend beyond technical implementation. Issues of equity and access remain particularly salient, as disparities in digital infrastructure and technological literacy continue to limit the effective adoption of AI in many developing contexts (Álvarez-Sánchez & Castro-Mazanett, 2026). Furthermore, the readiness of educators to integrate AI into their teaching practices varies significantly, influenced by factors such as professional training, institutional support, and ethical awareness (Aguilar-Cruz & Salas-Pilco, 2025). The broader socio-economic implications of AI, including shifts in labor market demands and the reconfiguration of required competencies, further highlight the need for higher education systems to adapt proactively (Chemlal & Benomar, 2024; Liutkevičius et al., 2024). Without careful planning and inclusive strategies, the integration of AI risks exacerbating existing inequalities rather than alleviating them.

In addition to structural and institutional concerns, the adoption of AI in education raises critical ethical and pedagogical questions. Challenges related to data privacy, algorithmic bias, transparency, and academic integrity necessitate robust governance frameworks to ensure responsible use. There is also increasing concern regarding the potential over-reliance on automated systems, which may undermine critical thinking, creativity, and the human dimensions of teaching and learning. Emerging conceptual frameworks, such as the AI Mirror Architecture, advocate for reflective and human-centered approaches that align technological innovation with ethical accountability and educational values (Reiter, 2025). Particularly in resource-constrained and conflict-affected settings, effective leadership, coherent policies, and context-sensitive implementation strategies are essential to ensure that AI contributes to sustainable and inclusive educational development (Hayat, 2025).

Against this backdrop, there is a pressing need for comprehensive scholarly examination of the role of AI in higher education. Although existing literature has explored various dimensions of AI integration, there remains a lack of consolidated understanding regarding its overall impact on teaching effectiveness, student learning outcomes, and institutional practices. This study therefore undertakes a systematic review of the use of artificial intelligence among higher education teachers, with particular attention to both its opportunities and limitations within tertiary classrooms. Specifically, the objectives of this review are to examine the extent to which AI is adopted in instructional practices among higher education educators, to evaluate the influence of AI-driven technologies on teaching effectiveness and student learning outcomes, to identify the key challenges and constraints associated with AI integration in educational settings, and to analyze the ethical and policy considerations necessary to ensure the responsible, equitable, and sustainable use of AI in higher education. Through a critical synthesis of current scholarship, this study aims to contribute to a deeper understanding of how AI can be effectively leveraged to enhance educational quality while mitigating its associated risks.

LITERATURE REVIEW

The development of artificial intelligence has had a profound impact on education and teaching practice. It is changing the teaching methods of teachers and the learning methods of students (Xue and Wang, 2022). The generative AI tool – ChatGPT remarkably perform complex tasks within the field of education has caused mixed feelings among educators, as this advancement in AI seems to revolutionize existing educational praxis (Figure 1). Benefits of ChatGPT include but are not limited to promotion of personalized and interactive learning, generating prompts for formative assessment activities that provide ongoing feedback to inform teaching and learning (Baidoo-Anu and Ansah, 2023). Their study offers recommendations on how ChatGPT could be leveraged to maximize teaching and learning. Policy makers, researchers, educators and technology experts could work

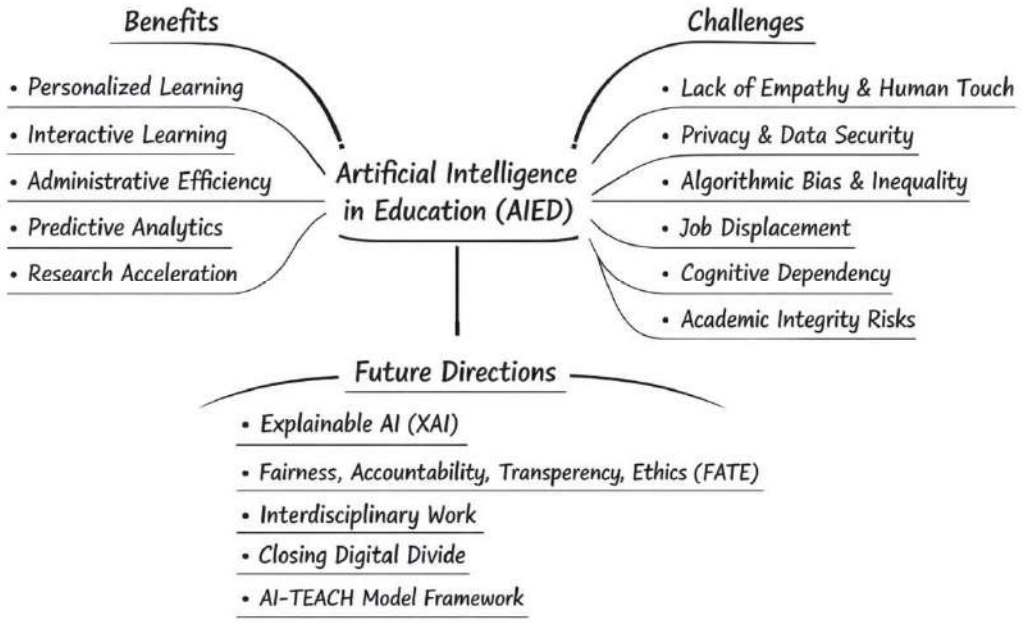

Figure 1: Conceptual Mind Map of Artificial Intelligence in Education (AIED) Source: Author 2026

together and start conversations on how these evolving generative AI tools could be used safely and constructively to improve education and support students' learning. The rapid advancement of artificial intelligence (AI) has significantly influenced education. Its application, including adaptive learning, teaching evaluation, and virtual classrooms, has positively impacted teaching and learning, enhancing both educators' teaching capabilities and students' learning outcomes. However, challenges for AI in education are also anticipated in the future (Huang, *et al.,* 2021).

The integration of artificial intelligence (AI) in education has introduced new prospects and challenges. This review outlines three forms of AI in education: AI-directed, AI-supported, and AI-empowered, each involving distinct roles for AI and learners. These reflect AI's evolution from directing cognitive learning to empowering learners as leaders (Ouyang and Jiao, 2021). The educational effects of emerging technologies on how educational institutions teach and how students learn were investigated in the conceptual review that looks into the advent of using artificial intelligence in teaching and learning in education. The goal of this review is to forecast how artificial intelligence will affect education in the future. It is thought that using artificial intelligence techniques well can raise the standard of instruction and learning. The difficulties associated with incorporating AI in educational settings are discussed. Additionally, the difficulties that students encounter in using artificial intelligence with regard to administration, instruction, learning, and student support (Fahimirad and Kotamjani, 2018).

In a quantitative study, teachers' opinions about GAI and its possible application in the classroom were investigated (Kaplan-Rakowski, 2023). In a validated survey, a representative sample of 147 teachers expressed their opinions about GAI technology, including its potential, integration, use, and drawbacks. Generally speaking, regardless of their method of instruction, the teachers have positive opinions on GAI.

Another study evaluated AI's impact on education, focusing on administration, instruction, and learning (Gwo-Jen Hwang, *et al.,* 2020). The findings indicated extensive AI adoption in education, evolving from computer-based technologies to web-based intelligent education systems and humanoid robots. AI has enabled efficient administrative tasks like grading, improved teaching quality, and personalized learning content, enhancing the overall learning experience (Chen *et al.,* 2020).

In another study, (AIED) applications were focused which involve using AI technologies in educational settings to enhance teaching, learning, and decision-making processes. It addresses the interdisciplinary nature of AIED, proposing a framework to guide researchers with diverse backgrounds in conducting AIED studies. The review emphasized the need for AI systems to prioritize explainability, human-in-the-loop process, and careful data

handling. The findings also contribute to the design of AI system storyboards. And offer practical implications for maximizing positive impacts while minimizing negative ones (Seo *et al.,* 2021). This review provides a comprehensive review of empirical studies on artificial intelligence in education. A total of 40 empirical studies were thoroughly reviewed, employing bibliometrics, content analysis, and categorical meta-trends analysis. The review highlights AIEd technologies and applications, their prove and potential benefits for education, and bridges the gap between AI technological innovations and educational applications. This review offers practical examples and insights for both technological experts and educators, along with rich discussions on practical implications and future AIEd necessitates addressing AI ethics and privacy concerns, emphasizing interdisciplinary and trans - disciplinary collaborations for large-scale, longitudinal research and development efforts (Baker 2000; Zhang and Aslan, 2021).

This review examines the use of AI in education across the globe with an emphasis on its possible effects in developing nations. Examples of AI's application in education are provided, and the pressing need to close the digital and social divide is discussed. In the first section, cases from different nations are examined to show how AI can enhance learning outcomes. In the second section, learners are better prepared for a future driven by AI through a new curriculum and the development of AI capabilities through training and education (Pedro *et al*., 2019; Akgun and Greenhow, 2022).

This review speculates on future of research in Artificial Intelligence and Education (AIED) based on three uses of models of educational processes: as scientific tools, as components of educational artifacts, and as bases for the design of educational artifacts. It emphasizes the need for an evolution of theories and models to study collaborative learning situations, integration of computer-based learning systems into schools, and the utilization of models as bases for design of educational technologies (Figure 1). The review provides an in-depth analysis of global research developments in applying artificial intelligence techniques to the education sector, highlighting AI's role in teaching and student evaluation. It emphasizes that AI is fundamental in NLP – enabled intelligent tutors' system, fostering skills such as self-reflection, addressing complex questions, resolving conflicting statements, generating creative queries, and decision-making abilities (Malik *et al*., 2019).

In a study that examined the integration of AI technologies into key educational domains of learning, teaching, assessment, and administration, the results identify 13 roles of AI technologies in education domains, 7 learning outcomes of AIED, and 10 major challenges, shedding light on the current focus of AIEd research and offering suggestion for future directions (Chiu *et al*., 2023). The review papers further serves as a framework to inform ethical AIED and encourage future impact studies in the field (Nguyen *et. al*., 2022). This paper addresses the emerging concerns about Fairness, accountability, Transparency, and Ethics (FATE) in AI-supported educational interventions. It argues that explainable AI (XAI) is crucial in education but requires a distinctive approach. Additionally, the study reveals that lawyers and jurists focus on the legal aspects of AI in education, foreseeing potential future problems, while engineers view AI as a tool to enhance the quality and benefit of education for all (Gocen and Aydemir, 2020; Khosravi, *et.al.,* 2022). Dissatisfied with initial digital learning environments, the agenda has been to design alternatives and study their implementation. The central inquiry revolves around the nature of machine intelligence, its constraints, and its potential in education. The review offers conceptual insights and outlines results from experimental implementations. A key finding suggests that while artificial intelligence will not replace the role of a teacher due to fundamental differences between machine and human intelligence, it has the potential to transform education in ways that paradoxically make it more human, not less (Cope *et al,* 2020).

The Paradox of Artificial Intelligence in Education Pedagogical Frontier or Systemic Threat?

The integration of Artificial Intelligence in Education (AIED) represents a transformative epoch that fundamentally restructures pedagogical methodologies to meet the demands of a dynamic, technology-driven world (Siddiqui et al., 2025). While this transition offers exciting possibilities such as expanded access to resources and improved efficiency, it simultaneously introduces profound systemic problems that challenge the development of critical thinking, creativity, and democratic values (Katz, 2024). Scholars note that while the idea of building intelligent machines has existed for centuries, the 21st-century wave of AIED has created a unique tension between hyped expectations and critical voices viewing it as a threat (Humble & Mozelius, 2022). This review synthesizes current scholarship to evaluate the dualistic nature of AI, framing it as both a sophisticated instructional tool and a multifaceted threat to the professional foundations of the teaching profession.

AI as a Force Multiplier: Pedagogical Tools and Enhancements

Current research identifies AI as a powerful supportive resource capable of enhancing the efficiency and personalization of the learning process (Alwaqdani, 2025; Jamal, 2023; Jiménez, 2024). A primary benefit is the capacity for personalized learning, where AI analyzes granular data on individual student performance to architect bespoke strategies and materials tailored to

specific strengths and weaknesses (Baidoo-Anu & Ansah, 2023; Siddiqui et al., 2025). Beyond individualization, AI facilitates administrative decoupling by automating high-frequency, low-complexity tasks such as assignment grading and scheduling, which allows educators to reinvest their intellectual capital into creative lesson planning and direct student engagement (Mondal et al., 2023). Furthermore, the use of predictive analytics enables teachers to identify latent trends in student achievement, fostering well-informed decisions regarding curriculum design and targeted interventions. This technological suite is often augmented by AI-powered chatbots and virtual assistants that provide synchronous, 24/7 support infrastructures for students, creating a more responsive and interactive learning environment (Baidoo-Anu & Ansah, 2023; Jamal, 2023). Additionally, AI tools accelerate the scholarly research cycle by automating literature reviews and data analysis, potentially leading to more rapid and innovative academic discoveries (Tammets & Ley, 2023).

The Existential and Systemic Threats to the Teaching Profession

Despite these advancements, a significant body of literature identifies AI as a potential disruptor that poses acute risks to the traditional educational landscape (Humble & Mozelius, 2022; Mathew & Isaac, 2025). A fundamental concern involves the inherent inability of AI to replicate the emotional intelligence, empathy, and "human touch" provided by human educators, upon which a holistic education depends (Nikitina & Ishchenko, 2024). From an ethical perspective, the implementation of AI necessitates gathering vast amounts of student data, raising severe privacy concerns and the risk of unauthorized entry or security lapses (Okulich-Kazarin et al., 2024; Pikhart & Al-Obaydi, 2025).

Moreover, AI algorithms are susceptible to "inheriting" biases from their training data, which can result in discriminatory outcomes that reinforce existing inequalities and impact marginalized groups (Karan & Angadi, 2023; Tariq, 2024). There are also deep-seated professional anxieties regarding job displacement, particularly for roles involving administrative or repetitive pedagogical functions, raising complex moral and financial questions (Alwaqdani, 2025; Nikitina & Ishchenko, 2024; Roubini, 2023). Finally, critics warn of "cognitive dependency," where an over-reliance on automated solutions may hinder the development of independent problem-solving and critical thinking skills in both students and teachers (Funmi & Qian, 2020; Mathew & Isaac, 2025).

Academic Integrity and Institutional Sustainability

The literature highlights a critical tension within higher education where the advancement of technology threatens to undermine academic integrity (Rodrigues et al., 2025). Bibliometric analyses reveal that while AI tools can act as detectors for plagiarism, there is a dearth of academic literature on how AI can proactively support integrity. Within regional contexts, such as Nigeria, the misuse of AI for assessments is highlighted as a primary threat to originality. Scholars further argue that AI poses a threat to the "democratic imagination," influencing how future generations engage with information and participate in civic life (Katz, 2024). To address these challenges, researchers propose structured frameworks such as the AI-TEACH Model, which advocates for an integration strategy centered on transformative learning, ethical AI practices, and holistic development (Siddiqui et al., 2025).

METHODOLOGY

This study adopted a systematic and integrative review methodology to examine the role of artificial intelligence (AI) as both a tool and a potential threat in teaching and learning. Unlike primary empirical studies that employ mixed-method designs, review-based research synthesizes existing literature to provide a comprehensive and critical understanding of a research problem (Chen et al., 2020; Chiu & Xia, 2023). The approach used in this study is consistent with prior reviews in AI in education, which emphasize structured literature synthesis to identify trends, challenges, and research gaps (Huang et al., 2021; Chen et al., 2022).

Research Design

The study utilized a qualitative-dominant integrative review design, incorporating elements of systematic review procedures to ensure rigor, transparency, and reproducibility (Table 1 and Figure 2). This design enables the combination of theoretical, empirical, and conceptual studies to generate a holistic understanding of AI applications in education (Fahimirad & Kotamjani, 2018; Ouyang & Jiao, 2021). The review also draws on interdisciplinary perspectives, reflecting the evolving and multifaceted nature of AI in education (Cope et al., 2020; Hwang et al., 2020).

Search Strategy and Data Sources

A comprehensive literature search was conducted across major academic databases including Scopus, Web of Science, Google Scholar, IEEE Xplore, and ScienceDirect, which are widely used in AI and education research (Zhang & Aslan, 2021; Xue & Wang, 2023). Keywords used in the search included combinations of: *"artificial intelligence in education," "AI in teaching and learning," "AI tools for teachers," "AI threats in education," "generative AI in education,"* and *"educational technology and AI."*

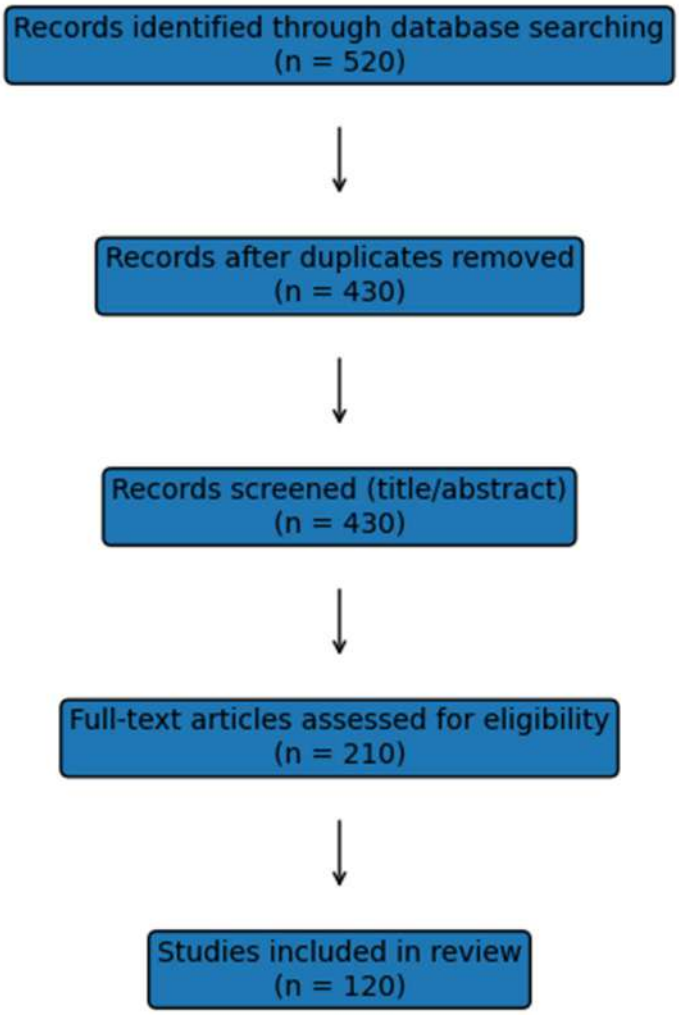

Figure 2: Flow Diagram of Study Selection Process

Table 1: Included Studies (Sample – Journal Style)

Author(s)	Year	Focus Area	Method	Key Contribution
Chen et al.	2020	AI in Education Review	Review	Comprehensive overview of AI applications
Chiu & Xia	2023	AI Opportunities & Challenges	Systematic Review	Identified research gaps and future directions
Ng et al.	2023	AI in Teaching & Learning	Review	Trends in AI integration (2000–2020)
Kaplan-Rakowski et al.	2023	Generative AI	Empirical	Teachers' perceptions of AI tools
Chounta et al.	2022	Teacher Perceptions	Empirical	AI as instructional support
Ouyang & Jiao	2021	AI Paradigms	Conceptual	Three paradigms of AI in education
Fitria	2021	AI Tools in Teaching	Review	Practical classroom applications
Huang et al.	2021	AI Review	Review	Interdisciplinary AI applications
Hwang et al.	2020	AI Challenges	Conceptual	Research issues and directions
UNESCO	2023	Policy & Ethics	Report	Guidelines for AI in education
Shah	2023	Future of AI	Book	Ethical and pedagogical implications
Okulich-Kazarin et al.	2024	AI Threats	Empirical	Sustainability concerns
Humble & Mozelius	2022	AI Risks	Review	Threat vs promise debate
Algabri et al.	2021	Personalization & Risks	Review	Dual nature of AI
Rodrigues et al.	2025	Academic Integrity	Bibliometric	AI and assessment challenges
Shodiyeva,	2026	Clinical training and language education	Practical Review	Enhances comprehension

The search strategy was informed by established review frameworks in AI education research to ensure adequate coverage of both foundational and emerging studies (Chen et al., 2020; Chiu & Xia, 2023). Additional sources such as policy reports and institutional guidelines were also included to provide contextual and practical insights (UNESCO, 2023; U.S. Department of Education, 2023).

Inclusion and Exclusion Criteria

To ensure relevance and quality, the following inclusion criteria were applied:

- Peer-reviewed journal articles, conference papers, and scholarly book chapters focusing on AI in education
- Studies addressing AI applications, opportunities, challenges, or ethical implications in teaching and learning
- Publications between 2000 and 2026, capturing both foundational and contemporary developments in AI (Baker, 2000; Chen et al., 2022)
- Empirical, theoretical, and review studies relevant to both K-12 and higher education contexts

Exclusion criteria included:

- Studies not directly related to educational applications of AI
- Non-scholarly sources lacking academic rigor
- Articles focusing solely on technical AI development without educational implications

These criteria align with best practices in systematic review studies in educational technology research (Ng et al., 2023; Sarwari, 2025).

Study Selection Process

The study selection process followed a multi-stage procedure involving identification, screening, eligibility, and inclusion, consistent with systematic review protocols (Chiu & Xia, 2023). Initially, a large pool of articles was identified through database searches. Duplicates were removed, followed by title and abstract screening to assess relevance. Full-text reviews were then conducted to ensure alignment with the study objectives.

This structured process ensured that the final dataset included high-quality and relevant studies reflecting diverse perspectives on AI in education, including teacher perceptions, pedagogical applications, and ethical considerations (Chounta et al., 2022; Kaplan-Rakowski et al., 2023).

Data Extraction and Analysis

Data were extracted and organized based on key themes, including:

- AI as a tool for teaching and learning
- AI-driven personalization and adaptive learning
- Efficiency, automation, and assessment
- Ethical concerns, risks, and threats in education

A thematic analysis approach was employed to identify recurring patterns, relationships, and emerging trends across the literature (Flogie & Aberšek, 2022). This approach is widely used in educational research to synthesize qualitative findings and generate conceptual insights (Delgado et al., 2020; Malik et al., 2019). The analysis also incorporated comparative and critical synthesis, allowing for the examination of both opportunities and threats associated with AI integration in education (Algabri et al., 2021; Humble & Mozelius, 2022). This dual perspective is essential for understanding the complex and sometimes contradictory nature of AI in teaching and learning (Cirillo, 2025; Okulich-Kazarin et al., 2024).

Quality and Ethical Considerations

To ensure the credibility and reliability of the review, only high-quality and peer-reviewed sources were included. Ethical considerations related to AI in education such as data privacy, algorithmic bias, and responsible use were also critically examined, as emphasized in prior studies (Akgun & Greenhow, 2022; Nguyen et al., 2023). Furthermore, this review acknowledges broader systemic issues such as digital divide, access to AI technologies, and policy implications, which influence the adoption and impact of AI in education globally (Álvarez-Sánchez & Castro-Mazanett, 2026; Jeong, 2025).

Synthesis of Findings

The final stage involved integrating findings across studies to develop a comprehensive understanding of AI as both a pedagogical tool and a potential threat. This synthesis highlights the balance between innovation and risk, emphasizing the need for ethical frameworks, teacher preparedness, and policy regulation (Shah, 2023; Schiff, 2021). The review also incorporates insights from emerging research on generative AI, teacher professional development, and future educational transformation, ensuring that the study reflects current trends and future directions in AI-enhanced education (Qu, 2025; Rahman, 2026; Shodiyeva, 2026).

RESULTS AND DISCUSSION

Artificial Intelligence (AI) practices among teachers in higher institutions can significantly impact the educational

landscape. One of the main advantages of using AI in the classroom is that it can give students a more customized educational experience. Furthermore, it provides a wealth of opportunities for students to learn and explore more. But it also threatens moral concerns like data privacy and confidentiality. Below are the themes that emerged from the teachers' responses in incorporating AI in their teaching practices.

AI as a Tool in Teaching Provides

Artificial intelligence (AI) has become a transformative force in education, offering innovative tools that enhance teaching effectiveness and student learning experiences. The integration of AI into educational systems supports adaptive, data-driven, and learner-centered pedagogies, positioning it as a critical component of modern instructional design (Ng et al., 2023; Tang, 2024; Sarwari, 2025). Scholars argue that AI not only improves classroom practices but also contributes to teacher professional development by fostering new models of digital competence and instructional innovation (Tammets & Ley, 2023; Jamal, 2023). One of the most significant contributions of AI in education is personalized learning. AI systems can analyze students' performance data, learning styles, and behavioral patterns to design customized instructional materials. This individualized approach enhances engagement and improves academic outcomes by addressing learners' specific needs (Fitria, 2021; Baidoo-Anu & Ansah, 2023). Studies further show that AI-powered platforms enable adaptive learning environments where students can progress at their own pace, thereby improving comprehension and retention (Niu et al., 2022; Zhou & Hou, 2025). Such personalization is particularly effective in language learning and diverse classroom contexts, where learners exhibit varying levels of proficiency (Kyrpa et al., 2024).

AI also improves efficiency and automation in teaching practice. Routine tasks such as grading, attendance management, and scheduling can be automated, reducing teachers' administrative burden and allowing them to focus on more meaningful instructional activities (Owan et al., 2023; Mondal et al., 2023). This shift enhances productivity and enables educators to dedicate more time to lesson planning, student interaction, and research (Jiménez, 2024). Additionally, AI contributes to innovative pedagogical models such as AI-enabled teaching frameworks, which integrate intelligent tools into curriculum design and delivery (Siddiqui et al., 2025).

Another major advantage is data-driven decision-making. AI systems can process large datasets to identify patterns in student performance, predict learning outcomes, and inform instructional strategies. This allows educators to implement targeted interventions and continuously improve teaching effectiveness (Kyrpa et al., 2024; Tang, 2024). Moreover, AI enhances assessment practices by providing more accurate, consistent, and scalable evaluation methods (Owan et al., 2023). The use of AI-powered chatbots and virtual assistants further enhances the teaching and learning process. These tools provide real-time support, answer students' queries, and facilitate interactive learning experiences beyond the classroom (Chounta et al., 2022). They also contribute to increased accessibility, ensuring that students receive continuous academic support regardless of time and location (Niu et al., 2022). AI also plays a crucial role in enhancing research and knowledge production. Educators can use AI tools to conduct literature reviews, analyze complex datasets, and generate insights more efficiently, thereby accelerating academic research and innovation (Jiménez, 2024). Furthermore, AI tools support interdisciplinary teaching, particularly in social sciences and humanities, by enabling new forms of content delivery and analysis (Kyrpa et al., 2024).

Despite these benefits, the effectiveness of AI as a teaching tool depends largely on teachers' perceptions and readiness to adopt such technologies. Research indicates that while many educators recognize the potential of AI, they also face challenges related to skills, training, and ethical considerations (Chounta et al., 2022; Alwaqdani, 2025). Nevertheless, when properly implemented, AI serves as a powerful complement to traditional teaching methods, enhancing both instructional quality and learning outcomes (Nikitina & Ishchenko, 2024).

AI can be a Threat in Teaching

While artificial intelligence offers numerous advantages in education, it also presents significant challenges that may undermine teaching and learning processes if not carefully managed. The literature consistently highlights AI as a dual-edged phenomenon simultaneously a source of innovation and a potential threat to educational values and practices (Humble & Mozelius, 2019; Humble & Mozelius, 2022; Cirillo, 2025).

One of the most prominent concerns is the absence of human touch in AI-driven education. Teaching is fundamentally a human-centered activity that relies on empathy, emotional intelligence, and interpersonal relationships. AI systems, despite their sophistication, cannot replicate these qualities, which are essential for holistic student development (Wogu et al., 2018; Mullan et al., 2024). The reduction of teacher-student interaction may lead to a depersonalized learning experience, limiting students' emotional and social growth (Amonova et al., 2023; Skavronskaya et al., 2023).

Another critical issue is privacy and data security. AI systems require extensive data collection, including sensitive student information, raising concerns about surveillance, misuse, and unauthorized access. Weak regulatory frameworks and inadequate data protection

mechanisms further exacerbate these risks (Pedro et al., 2019; Tariq, 2024). Ensuring data privacy remains a significant challenge in the widespread adoption of AI in education (Karan & Angadi, 2023).

The issue of algorithmic bias also poses a serious threat. AI systems are trained on datasets that may contain inherent biases, leading to discriminatory outcomes and reinforcing existing inequalities in education (Algabri et al., 2021; Pikhart & Al-Obaydi, 2025). Such biases can negatively impact marginalized groups, raising concerns about fairness, equity, and inclusivity (Katz, 2024).

Concerns regarding job displacement further contribute to the perception of AI as a threat. The automation of administrative and instructional tasks may reduce the need for certain roles within the education sector, creating uncertainty among educators (Mathew & Isaac, 2025). Broader discussions on the societal impact of AI suggest that technological advancements could disrupt labor markets, including the education sector (Roubini, 2023). However, some scholars argue that AI is more likely to augment rather than replace teachers, although this transition may still require significant adaptation (Kwiatkowski, 2025).

Another important challenge is over-dependency on technology, which may hinder the development of critical thinking and problem-solving skills. When students rely excessively on AI tools for answers and solutions, they may struggle to develop independent cognitive abilities (Funmi & Qian, 2020; Shah, 2023). This dependency risks reducing deep learning and intellectual engagement.

Additionally, AI raises concerns about academic integrity and authenticity. The increasing use of generative AI tools makes it easier for students to produce assignments without genuine understanding, thereby challenging traditional assessment methods (Rodrigues et al., 2025; Ballantine et al., 2024). These developments necessitate the redesign of assessment strategies to ensure authenticity and fairness.

Broader philosophical and societal concerns also emerge, including the potential impact of AI on democratic values, critical pedagogy, and educational sustainability (Katz, 2024; Okulich-Kazarin et al., 2024). Some scholars warn that unregulated AI adoption could undermine the foundational goals of education by prioritizing efficiency over critical and reflective learning (Schiff, 2021). In response to these challenges, researchers emphasize the need to reframe AI as an opportunity rather than a threat through responsible implementation and ethical governance (Skavronskaya et al., 2023; Amonova et al., 2023). This includes developing policies that address privacy, bias, and equity, as well as promoting digital literacy among educators and students (Table 2 and Figure 3). While AI has the potential to revolutionize education, its risks cannot be overlooked. Addressing issues related to human interaction, data security, bias, employment, and academic integrity is essential to ensure that AI enhances rather than undermines teaching and learning (Humble & Mozelius, 2022; Cirillo, 2025).

AI in Education Studies by Theme over Time

Figure 4 offers a compelling visualization of the evolving scholarly discourse surrounding artificial intelligence in education (AIED). It reflects a systematic and integrative review methodology that synthesizes peer-reviewed literature from 2018 to 2026, categorizing studies into three thematic roles: AI as a pedagogical tool, AI as a systemic threat, and AI as a dual-role entity embodying both promise and peril. This temporal and thematic mapping reveals not only the trajectory of academic interest but also the shifting epistemological concerns that have shaped the field. In the early years (2018–2020), the literature predominantly framed AI as a transformative tool for enhancing teaching and learning. Studies such as Fahimirad and Kotamjani (2018) and Chen et al. (2020) emphasized the utility of AI in automating administrative tasks, supporting adaptive learning environments, and improving instructional efficiency. This period was marked by optimism and a techno-centric orientation, where AI was viewed as a solution to pedagogical limitations and a catalyst for innovation. Baidoo-Anu and Ansah (2023) further reinforced this narrative by showcasing ChatGPT's potential to personalize learning and facilitate formative assessment. However, beginning in 2021, the literature began to reflect a more nuanced understanding of AI's role in education. Scholars like Ouyang and Jiao (2021) introduced paradigms such as AI-directed, AI-supported, and AI-empowered learning, which acknowledged the evolving relationship between AI systems and human agency. Cope et al. (2020) and Siddiqui et al. (2025) advanced this dual perspective by arguing that while AI can enhance educational outcomes, it also raises profound ethical and philosophical questions. The AI-TEACH model proposed by Siddiqui et al. (2025) exemplifies this integrative approach, advocating for transformative learning grounded in ethical AI practices. From 2023 onward, the literature reveals a marked increase in studies that critically examine AI as a systemic threat. Humble and Mozelius (2022) and Mathew and Isaac (2025) warned of AI's potential to erode the professional foundations of teaching, undermine academic integrity, and foster cognitive dependency. Katz (2024) introduced the concept of the "democratic imagination," arguing that AI could reshape civic engagement and information literacy in ways that challenge democratic values. These concerns are echoed in studies addressing algorithmic bias (Karan and Angadi, 2023), data privacy (Okulich-Kazarin et al., 2024), and ethical accountability (Nguyen et al., 2022; Akgun and Greenhow, 2022).

Figure 4 also highlights the emergence of interdisciplinary and policy-oriented research, particularly

Table 2: Artificial Intelligence in Education: Opportunities and Threats in Teaching.

Category	Benefits to Higher Education & Lecturers	Threats to Teachers & Lecturers
Instructional Design	AI creates personalized learning strategies by analyzing student performance data to address specific strengths and weaknesses (Fitria, 2021; Siddiqui et al., 2025).	AI lacks the emotional intelligence and empathy required for the human interaction that an all-encompassing education depends on (Nikitina & Ishchenko, 2024; Zhou & Hou, 2025).
Operational Efficiency	Automating administrative tasks like grading and scheduling allows lecturers to focus on creative lesson plans and research (Mondal et al., 2023; Jiménez, 2024).	There are significant ethical and financial concerns that AI could result in job displacement for roles involving repetitive or administrative work (Nikitina & Ishchenko, 2024; Roubini, 2023) .
Research & Analytics	AI tools quicken the research process by automating data analysis, literature reviews, and insight generation (Tammets & Ley, 2023; Sarwari, 2025).	Over-reliance on AI can lead to a dependency on technology, potentially hindering the development of critical thinking and problem-solving skills (Funmi & Qian, 2020; Mathew & Isaac, 2025).
Engagement & Support	AI-powered chatbots and virtual assistants provide immediate, 24/7 student support and facilitate interactive learning (Baidoo-Anu & Ansah, 2023; Jamal, 2023).	Algorithms may inherit biases from training data, leading to discriminatory outcomes that reinforce inequalities for marginalized groups (Karan & Angadi, 2023; Tariq, 2024).
Assessment & Integrity	AI enhances educational measurement and assessment through data-driven patterns and trends (Owan et al., 2023; Siddiqui et al., 2025).	Massive data collection for AI raises severe privacy concerns, where inappropriate handling can lead to security lapses and unauthorized entry (Okulich-Kazarin et al., 2024; Pikhart & Al-Obaydi, 2025).

Figure 3: Artificial Intelligence in Education: Opportunities and Threats in Teaching

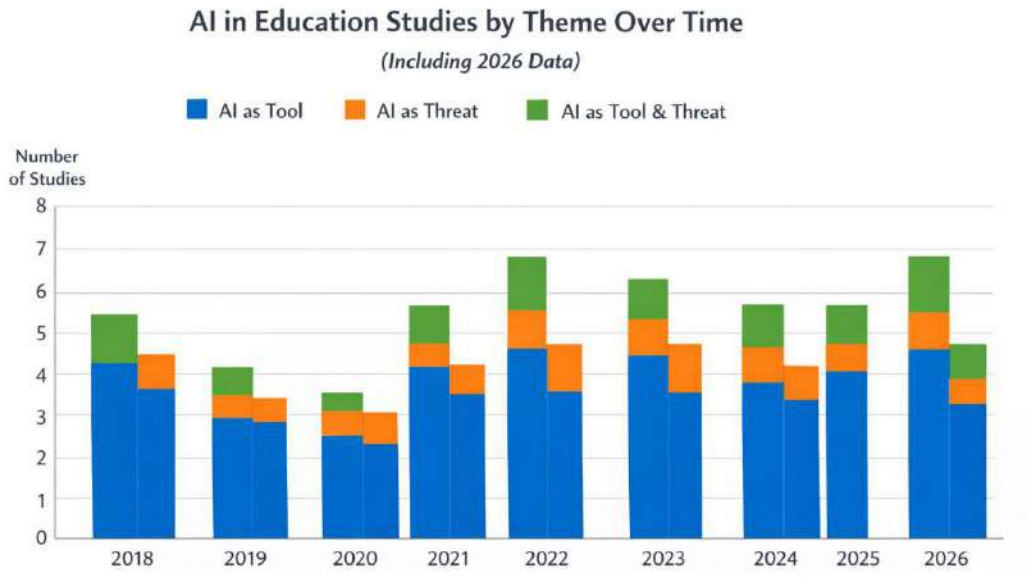

Figure 4: Temporal Distribution of AI in Education Studies by Theme (2018–2026).

in the years 2024 and 2025. Contributions from law, ethics, and educational policy such as those by UNESCO (2023), the U.S. Department of Education (2023), and Álvarez-Sánchez and Castro-Mazanett (2026) reflect a growing recognition of the need for regulatory frameworks and inclusive strategies to guide AI integration. The rise of explainable AI (XAI) and the FATE framework (Fairness, Accountability, Transparency, and Ethics) underscores the shift from technological enthusiasm to responsible innovation. Overall, the (Figure 4) validates the integrative review methodology by revealing thematic shifts, interdisciplinary convergence, and emerging ethical concerns. It demonstrates that the field of AIED is maturing, moving beyond binary framings of AI as either a tool or a threat, toward a more complex understanding of its implications. The balanced distribution of studies in 2025 suggests that scholars are increasingly embracing dual-role perspectives, recognizing that AI's impact on education is contingent upon context, design, and governance. This insight is critical for future research, which must prioritize longitudinal, context-sensitive, and ethically grounded investigations to ensure that AI serves as a force for equitable and transformative education.

Conclusion

The review identified the use and non-use of AI tools among higher education teachers and concluded that even though using AI in the classroom has many benefits for teachers lecturing in higher institutions in terms of efficiency, personalization, and data-driven decision-making, a balanced and moral integration of AI in education requires advancing in issues like job displacement, biases, and privacy concerns. It is critical to see artificial intelligence (AI) as an additional tool to human teachers, enhancing their distinct contributions to the classroom rather than taking their place. The use of Artificial Intelligence among higher education teachers have been a tool rather than a threat as AI helped improve students' learning outcomes through personalized learning. It also provided teachers with efficient instructional delivery as it streamlined the teaching and learning process. AI has been used as a tool in teaching but it can also imply some threats if not properly managed or regulated as it poses ethical challenges in academic work. The integration of AI in higher education presents both opportunities and challenges. Successful implementation requires careful consideration of ethical, privacy, and equity issues, along with effective strategies to address potential resistance and ensure that AI enhances rather than hinders the educational experience.

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