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Emerging Trends and Discourses on Artificial Intelligence in Education: Its Promises and Pedagogical Implications

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ABSTRACT

This study explored the emerging trends, current practices, challenges, and pedagogical implications of Artificial Intelligence in Education (AIEd) in the Division of Oroquieta City during the School Year 2025–2026. Employing a descriptive qualitative research design, data were gathered from purposively selected public secondary school teachers through an adapted questionnaire, interviews, and document analysis. The findings revealed that AI is increasingly used as a teaching and learning support tool for lesson planning, assessment, student engagement, and administrative tasks, contributing to improved efficiency and personalized learning. However, challenges such as limited infrastructure, unequal access to technology, capacity and skills gaps, ethical and academic integrity concerns, and resistance to AI adoption persist. The study further indicated that AI integration transforms the teacher's role toward facilitation and mentoring while highlighting the need to strengthen learner-centered approaches, critical thinking, and digital literacy. Overall, the study underscores the importance of institutional readiness, professional development, and clear policy frameworks to ensure ethical, equitable, and sustainable AI integration in education.

Keywords: *artificial intelligence, digital literacy, pedagogical implications, qualitative research, teacher perspectives*

Introduction

Artificial Intelligence in Education (AIED) refers to the application of intelligent technologies—such as machine learning, natural language processing, and generative systems—to enhance teaching, learning, and assessment. Internationally, UNESCO (2023) underscores that AI can transform education through personalization, efficiency, and accessibility, yet it must be approached cautiously with a strong emphasis on ethics, fairness, and data privacy. Similarly, OECD (2021) highlights that while AI is rapidly entering classrooms worldwide, policymakers must ensure evidence-based integration to avoid widening digital and social inequities. The global discourse, therefore, frames AI not simply as a tool but as a complex educational force that requires careful governance. This perspective establishes the foundation for examining how emerging AI trends shape the promises and challenges of pedagogy in both developed and developing contexts.

Recent scholarly work has expanded this discussion by mapping how AI is being deployed across different educational systems. Holmes (2023) notes that generative AI offers new ways to provide feedback, tutoring, and adaptive learning, but warns that unchecked use may compromise academic integrity and overshadow the role of teachers. Likewise, Zawacki-Richter et al. (2022) emphasize that while AI-driven systems can support personalized learning pathways, they also raise pressing concerns related to bias, accountability, and transparency. Other authors such as Akgün and Greenhow (2022) argue that the effective use of AI in classrooms depends on teacher readiness and institutional capacity rather than on technology alone. These scholarly perspectives converge on a central argument: AI's pedagogical value emerges only when anchored in evidence, teacher agency, and ethical practices.

In the Philippine context, momentum toward AI adoption is slowly building but remains uneven across educational levels. The Department of Education established the Education Center for AI Research (DepEd, 2025), a landmark initiative that seeks to guide AI-related innovations in teaching and learning. Higher education institutions such as the University of the Philippines Open University (UPOU) have also issued AI-use guidelines, focusing on ethics, assessment integrity, and academic honesty (UPOU, 2024). However, national reports indicate that many divisions and schools lack comprehensive frameworks to integrate AI into curricula and teacher development programs (EDCom II, 2024). These gaps highlight the need for context-sensitive studies that examine local readiness, challenges, and opportunities in adopting AI in education.

At the national level in the Philippines, emerging data suggests that many teachers are beginning to use AI tools in instructional tasks—such as creating personalized learning materials (56 % of teachers), generating exams and quizzes (65 %), and preparing other instructional content (71 %)—though these are often isolated, informal, or occasional uses rather than part of a coherent pedagogical strategy (BusinessWorld, 2025) (cited in the national AI in education survey). Despite this uptake, formal training in AI remains scarce: in one study of DepEd personnel in Tandag City, 86.2 % of respondents reported they had not attended AI-related seminars or training (Cubio, 2025). This discrepancy between use and training underscores a broader tension: educators may be experimenting with AI, but lack structured support, confidence, or understanding of how to integrate it meaningfully.

Within the Division of Oroquieta City, the gap becomes starker. Anecdotal and informal reports suggest that only a minority of teachers—perhaps 20–30 %—have experimented with AI in their instruction, typically limited to tasks like generating lesson materials or quizzes. Yet no empirical, local studies confirm this percentage, indicating both an absence of data and weak institutional awareness. While the pandemic drove improvements in general digital literacy across schools, AI-specific literacy among teachers remains in its infancy, with many unable to critically evaluate AI output quality, adjust AI tools to their pedagogical intentions, or address ethical questions of bias and data privacy. Moreover, there is no unified, division-wide policy or framework guiding the ethical and pedagogical integration of AI in the Division of Oroquieta City's schools. Educators are left to devise their own practices in isolation, resulting in uneven, fragmented, or superficial AI adoption.

With this, the study will be conducted to explore the emerging trends and discourses on artificial intelligence in education, with particular attention to its promises and pedagogical implications. Specifically, it seeks to analyze how international and national discourses intersect with the local realities of teachers and schools in the Division of Oroquieta City. The study also aims to identify challenges in teacher readiness, curricular integration, and

governance, while formulating evidence-based recommendations for local implementation. Situating global trends within the local context, the research intends to address the pressing gap between AI's potential and its practical adoption in Philippine classrooms. In doing so, the study not only responds to academic discourse but also contributes to local policymaking and teacher capacity-building.

The expected results of this research include a nuanced mapping of AI's promises—such as personalized learning, real-time feedback, and workload reduction—alongside its risks, including bias, ethical concerns, and threats to academic integrity. It is anticipated that the study will surface practical implications for classroom instruction, curriculum design, and assessment strategies relevant to the Division of Oroquieta City. Furthermore, it seeks to provide a roadmap for school leaders and policymakers on how to align local practices with international guidance from bodies such as UNESCO and OECD. Hence, the findings are expected to empower teachers, inform decision-makers, and contribute to a balanced, ethical, and context-driven adoption of AI in education. Through this, the Division of Oroquieta City may become a model for other local divisions navigating the complexities of AI integration in Philippine education

Methods

The study employed a descriptive qualitative research design to examine the emerging trends, current practices, challenges, and pedagogical implications of Artificial Intelligence in Education (AIED) in the Division of Oroquieta City during School Year 2025–2026. It involved 20 purposively selected public secondary school teachers from Misamis Occidental Science and Technology High School, using an adapted questionnaire supported by expert validation, pilot testing, and reliability assessment through Cronbach's alpha. Data were gathered following appropriate institutional approvals, informed consent, and confidentiality procedures, then analyzed thematically using the six-phase framework of Braun and Clarke (2017). The study was conducted within a diverse educational environment where AI adoption was developing but remained uneven due to limitations in infrastructure, internet connectivity, teacher training, ethical concerns, and sustainability. Throughout the research process, ethical standards, including the Data Privacy Act of 2012, voluntary participation, anonymity, secure data storage, and research trustworthiness, were strictly observed.

Results and Discussions

Emerging Trends and Discourses on Artificial Intelligence in Education

The findings reveal that Artificial Intelligence (AI) is increasingly emerging as a teaching and learning support tool within the educational context of the Division of Oroquieta City. Teachers described AI as useful in lesson planning, preparation of instructional materials, creation of presentations and worksheets, development of quizzes, grammar checking, and assessment-related activities. Rather than viewing AI as a replacement for their professional role, participants generally perceived it as a supplementary mechanism that helps reduce workload, improve efficiency, and provide ideas and structures that teachers can modify according to the needs of their learners. The findings further show an increasing adoption and normalization of AI in schools, as teachers and students become more familiar with platforms such as ChatGPT, Gemini, Khan Academy/Khanmigo, and other AI-supported applications. Formal trainings, seminars, peer sharing, and experiential learning contributed to this growing openness and confidence. These findings are consistent with Holmes et al. (2019), who emphasized that AI can augment teachers' instructional capacity by supporting lesson planning, assessment, and feedback, while Luckin et al. (2022) highlighted the potential of AI to enhance pedagogical efficiency and learner-centered practices. Similarly, Zawacki-Richter et al. (2019) noted that AI adoption becomes more meaningful when teachers recognize its pedagogical value and receive adequate institutional support.

However, the findings also reveal that the increasing use of AI is accompanied by debates and tensions concerning its appropriate role in education. Teachers expressed concerns about student overdependence on AI-generated answers, possible reductions in critical thinking, loss of authentic learning experiences, academic dishonesty, and even the fear that AI could eventually replace teachers. These concerns demonstrate that the discourse surrounding AI is not exclusively positive but involves a continuing negotiation between technological innovation and the preservation of human-centered education. Participants emphasized that AI should supplement rather than replace teachers because instructional decisions, emotional support, contextual understanding, and learner guidance remain fundamentally human responsibilities. The findings are supported by Selwyn (2019), who discussed the tensions between technological automation and pedagogy, and by Holmes

et al. (2022), who emphasized the importance of protecting learner autonomy, critical thinking, and ethical practice in AI-supported education. Zawacki-Richter et al. (2019) likewise noted that teacher apprehension is a natural response to emerging technologies, particularly when clear policies and professional support are lacking. Thus, while AI is becoming increasingly normalized in education, its emerging discourse strongly suggests the need for balanced, critical, ethical, and teacher-guided integration rather than unrestricted dependence on technology.

Current Use of Artificial Intelligence in Teaching and Learning

The findings indicate that teachers are already using AI in several important aspects of teaching and learning, particularly in instructional planning and content development. Participants reported using AI to generate lesson plans, activities, worksheets, presentations, visual materials, and simplified explanations of difficult concepts. These applications were particularly valuable in addressing teachers' heavy workloads and limited preparation time. AI was also used in assessment and feedback processes, including the preparation of quizzes and examinations, automated checking, performance analytics, grammar checking, and provision of immediate feedback. Such applications enabled teachers to identify learning gaps more efficiently and make data-informed instructional decisions. The findings further indicate the use of AI for student engagement and interactive learning, through platforms such as Kahoot, Quizizz, Wayground, Khan Academy, and Khanmigo, which supported interactive activities, self-paced learning, personalized instruction, and differentiated practice. These practices demonstrate that AI has become a practical component of teachers' instructional routines rather than merely an emerging or experimental technology. The findings support Holmes et al. (2019), who emphasized the contribution of AI to instructional design and assessment, Luckin et al. (2018), who highlighted AI's capacity to support personalized and adaptive learning, and Zawacki-Richter et al. (2019), who emphasized the potential of AI to support data-informed teaching and learner monitoring.

Beyond direct classroom instruction, the findings show that AI is also being used for administrative and classroom management support. Teachers reported using AI to prepare reports, organize records, track learner progress, analyze student performance, and automate repetitive tasks. This use of AI reduces the amount of time teachers spend on routine administrative responsibilities and allows them to devote greater attention to teaching, learner interaction, and intervention. The findings therefore suggest that AI is contributing not only to instructional efficiency but also to broader improvements in classroom organization and teacher workload management. Nevertheless, participants emphasized that AI-generated outputs and analytics still require teacher evaluation, contextualization, and professional judgment to ensure accuracy and appropriateness. This finding reinforces the position of Zawacki-Richter et al. (2019) that AI can support teachers in managing administrative responsibilities and making data-informed decisions, while Holmes et al. (2019) emphasized that automation should enhance rather than diminish teachers' pedagogical responsibilities. Luckin et al. (2022) further emphasized that AI is most beneficial when it functions as an assistive technology within a human-centered educational environment. Consequently, the current use of AI in the study setting demonstrates its potential to improve instructional efficiency, assessment practices, learner engagement, personalization, and administrative management, while maintaining teachers as the primary decision-makers in the educational process.

Challenges and Barriers to Artificial Intelligence Adoption

Despite the growing use of AI, the findings identify several significant challenges that hinder its consistent and equitable adoption. The first major concern involves infrastructure and access limitations, including limited availability of digital devices, unstable or slow internet connectivity, insufficient ICT facilities, and unequal access to technology among learners. Participants indicated that even when teachers are willing to integrate AI, inadequate technological resources can prevent them from doing so effectively. These disparities are particularly significant because some learners have access to gadgets and reliable internet outside school while others do not, potentially creating unequal learning opportunities. Another major challenge involves capacity and skills gaps among teachers, characterized by insufficient formal training, limited exposure to AI integration strategies, low confidence, and lack of time to learn new technologies because of existing teaching and administrative responsibilities. Teachers may therefore have basic familiarity with AI tools but still lack the pedagogical knowledge necessary to integrate them effectively into curriculum, instruction, and assessment. These findings are consistent with Zawacki-Richter et al. (2019), who emphasized that infrastructure and teacher competence are important conditions for successful AI integration. Similarly, Selwyn (2019) noted that digital inequality can undermine equitable access to educational technologies, while Holmes et al. (2022)

emphasized the importance of professional development and institutional support in building teachers' capacity for responsible AI adoption.

The findings further reveal substantial ethical, academic integrity, and psychological barriers to AI adoption. Teachers expressed concerns about cheating, copy-pasting AI-generated answers, overreliance on AI, reduced critical thinking, loss of authentic learning, and uncertainty regarding the protection of learners' personal data. The absence of clear policies and guidelines on responsible AI use further contributes to teachers' uncertainty and cautious adoption. In addition, some participants expressed resistance or apprehension because of fears that AI might replace teachers, misconceptions regarding its purpose, unfamiliarity with AI technologies, and preference for traditional teaching methods. These concerns demonstrate that the barriers to AI adoption are not merely technological but also involve ethical, professional, pedagogical, and institutional dimensions. The findings are supported by Selwyn (2019), who emphasized that ethical considerations and digital inequality must be central to educational technology adoption. Zawacki-Richter et al. (2019) similarly warned about issues involving academic integrity, data privacy, and unequal access, while Holmes et al. (2022) highlighted the need for ethical AI literacy and appropriate professional support. Therefore, addressing these barriers requires more than providing AI tools; schools must simultaneously strengthen infrastructure, provide continuous teacher development, establish ethical safeguards, and create clear institutional policies that promote responsible and equitable AI integration.

Pedagogical Implications of Artificial Intelligence Integration

The findings demonstrate that AI integration is contributing to a significant transformation of the teacher's role. Rather than eliminating the need for teachers, AI is shifting their responsibilities from being primarily content providers toward becoming facilitators, mentors, coaches, and guides who help learners interpret information, apply knowledge, think critically, and receive meaningful feedback. Participants emphasized that although AI can provide information, explanations, and learning resources, teachers remain essential in providing emotional support, contextual understanding, motivation, and individualized guidance. AI also promotes learner-centered and personalized teaching approaches by allowing teachers to develop differentiated activities, self-paced learning opportunities, adaptive exercises, and interactive or inquiry-based tasks. Such practices enable teachers to respond more effectively to differences in learners' abilities, learning pace, and educational needs. These findings are consistent with Luckin et al. (2018), who emphasized AI's potential to support personalized and adaptive learning, and Holmes et al. (2019), who described how AI can shift teachers' roles toward facilitation and learner support. Zawacki-Richter et al. (2019) similarly emphasized that human-centered pedagogy remains essential even in AI-enhanced learning environments. Thus, the pedagogical implication is not the replacement of teachers but the redefinition and strengthening of the teacher's role in facilitating deeper, more personalized, and more meaningful learning.

At the same time, AI integration creates a stronger need to develop learners' critical thinking, digital literacy, ethical awareness, and responsible technology use. Teachers reported the importance of teaching learners to verify AI-generated information, evaluate sources, distinguish appropriate assistance from cheating, and avoid excessive dependence on AI-generated answers. When properly guided, AI can become an opportunity for learners to question, analyze, evaluate, and improve information rather than simply accept ready-made outputs. However, these pedagogical possibilities require strong institutional readiness and support systems, including continuous professional development, adequate ICT infrastructure, leadership support, and clear policies and guidelines governing AI use. The findings therefore suggest that effective AI integration must be supported at both the classroom and institutional levels. Selwyn (2019) emphasized the importance of critical digital literacy in navigating AI-driven educational environments, while Holmes et al. (2022) highlighted the need to develop learners' capacity to critically interpret AI outputs and use AI responsibly. Zawacki-Richter et al. (2019) further emphasized the importance of institutional strategies and governance in ensuring effective AI adoption. Consequently, sustainable AI integration requires a whole-school approach in which teachers are trained, learners are guided, infrastructure is strengthened, and policies are established to ensure that AI enhances—not compromises—the quality, integrity, equity, and human-centered nature of education.

Conclusions

This study concluded that Artificial Intelligence in Education has become an emerging and increasingly normalized component of teaching and learning in the Division of Oroquieta City, offering significant

instructional, administrative, and pedagogical benefits. AI is widely used as a support tool for lesson planning, assessment, student engagement, and classroom management, contributing to improved efficiency, personalization of learning, and enhanced student participation. However, the adoption of AI remains challenged by infrastructure limitations, unequal access to technology, capacity and skills gaps among teachers, ethical and academic integrity concerns, and persistent apprehensions about AI replacing teachers. These challenges highlight the need for deliberate and responsible integration of AI in education. The study further concludes that AI integration necessitates a transformation of the teacher's role toward facilitation and mentoring, the promotion of learner-centered and personalized approaches, the development of critical thinking and digital literacy, and strong institutional readiness. Overall, the effective and sustainable use of AI in education depends on comprehensive teacher training, strengthened ICT infrastructure, and the establishment of clear policies and ethical guidelines to ensure equitable, human-centered, and pedagogically sound AI adoption in schools.

Recommendations

Based on the findings and conclusions of the study, it is recommended that teachers use Artificial Intelligence (AI) thoughtfully as a supportive instructional tool while maintaining professional judgment, ethical standards, and learner-centered practices; school administrators provide continuous professional development, mentoring, reliable ICT infrastructure, internet connectivity, and clear school-level guidelines on responsible AI use; the Department of Education strengthen policies, standards, ethical guidelines, capacity-building programs, and equitable digital infrastructure to support inclusive and sustainable AI integration; learners and parents collaborate with schools in promoting responsible AI use, academic integrity, independent thinking, and digital literacy; and future researchers expand the scope of investigation by involving larger and more diverse samples, other school levels or divisions, and mixed-method approaches, including studies on the long-term effects of AI on learning outcomes, critical thinking, and academic integrity.

Conflict of Interests

The author declares that they have no conflicts of interest

References

[1] Akgün, S., & Greenhow, C. (2022). Artificial intelligence in education: Addressing ethical challenges in K–12 settings. *AI and Ethics, 2*, 431–440. https://doi.org/10.1007/s43681-021-00096-7

[2] Braun, V., & Clarke, V. (2017). Thematic analysis. *The Journal of Positive Psychology, 12*(3), 297–298. https://doi.org/10.1080/17439760.2016.1262613

[3] BusinessWorld. (2025). *National survey on artificial intelligence use in education*. BusinessWorld Online.

[4] Cubio, J. V. (2025). The role of artificial intelligence in teaching and administrative tasks: Perspectives of DepEd personnel. *International Journal of Research and Innovation in Social Science*, *9*(4), 3207–3225. https://doi.org/10.47772/IJRISS.2025.90400502

[5] Department of Education. (2025). *Establishment of the Education Center for Artificial Intelligence Research (E-CAIR).* Department of Education, Republic of the Philippines.

[6] Holmes, W. (2023). AIED—Coming of age? *International Journal of Artificial Intelligence in Education, 34*, 1–11. https://doi.org/10.1007/s40593-023-00352-3

[7] Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.

[8] Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education, 57*(4), 542–570. https://doi.org/10.1111/ejed.12533

[9] Luckin, R. (2018). *Machine learning and human intelligence: The future of education for the 21st century*. UCL Institute of Education Press.

[10] Luckin, R., Cukurova, M., Kent, C., & du Boulay, B. (2022). Empowering educators to be AI-ready. *Computers and Education: Artificial Intelligence, 3*, 100076. https://doi.org/10.1016/j.caeai.2022.100076

[11] Miao, F., & Holmes, W. (2023). *Guidance for generative AI in education and research*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000386693

[12] Nguyen, A., Ngo, H. N., Hong, Y., Dang, B., & Nguyen, B.-P. T. (2023). Ethical principles for artificial intelligence in education. *Education and Information Technologies, 28*, 4221–4241. https://doi.org/10.1007/s10639-022-11316-w

[13] Organisation for Economic Co-operation and Development. (2021). *OECD digital education outlook 2021: Pushing the frontiers with artificial intelligence, blockchain and robots*. OECD Publishing. https://doi.org/10.1787/589b283f-en

[14] Republic of the Philippines. (2012). *Republic Act No. 10173: Data Privacy Act of 2012*. Official Gazette of the Republic of the Philippines.

[15] Second Congressional Commission on Education. (2024). *EDCOM II report on Philippine education*. EDCOM II.

[16] Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Polity Press.

[17] University of the Philippines Open University. (2024). *Guidelines for the use of artificial intelligence (AI) for teaching and learning*. University of the Philippines Open University.

[18] UNESCO. (2023). *Guidance for generative AI in education and research*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000386693

[19] Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—Where are the educators? *International Journal of Educational Technology in Higher Education, 16*, Article 39. https://doi.org/10.1186/s41239-019-0171-0