Article

Enhancing English Education Through AI: Advancing Pedagogical Practices

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Abstract

Artificial Intelligence integration in the field of education has transformed pedagogical strategies into innovative ways that improve customized learning and the way instruction is delivered. The research delves into the attitudes and experiences of teachers in English department of Cagayan State University Piat Campus toward the incorporation of AI into their teaching strategies. It observes how AI-led instruction-based approaches contribute to the interaction and performance of learners and derives some challenges and opportunities for incorporating AI into instructional systems. Using a qualitative approach, it is gathered through semi-structured interviews with faculty members that perceived benefits of AI in enhancing student engagement and personalized experiences. Some of the most significant drawbacks for successful implementation of AI include insufficient training, lack of technological infrastructure, and ethical concerns. The study emphasizes the importance of proper training, infrastructure development, and balanced integration of AI to optimize its potential in English education, thus providing valuable insights for policy formulation and practice enhancement in similar academic settings.

Keywords: English Education, Pedagogy, Technological Infrastructure, AI-Led Instruction

Introduction

Integrating artificial intelligence (AI) into higher education has opened new possibilities for transforming teaching and learning processes. In English instruction, AI-powered applications provide opportunities for personalized learning, adaptive instruction, and real-time feedback, which can significantly enhance student engagement and performance (Holmes et al., 2021). For institutions like Cagayan State University Piat Campus (CSU Piat), adopting AI in teaching practices is increasingly relevant as educators and learners navigate a global shift toward digital and data-driven education. However, while AI tools present significant benefits, they also bring challenges. Data privacy, ethical concerns, the digital divide, and inadequate teacher training complicate implementation, especially in resource-constrained contexts (Luckin, 2017; Zawacki-Richter et al., 2019). For English teachers, who must balance content delivery with fostering critical communication skills, the challenge lies in integrating AI in ways that support pedagogy without replacing essential human elements of instruction. Thus, examining educators' perceptions, opportunities, and challenges in AI integration and its impact on student engagement and learning effectiveness becomes crucial for informing institutional strategies and faculty development programs that will maximize AI's potential in higher education.

A growing body of literature highlights the transformative potential of AI in education, particularly in enhancing language learning. Research shows that AI enables personalized instruction by tailoring materials to individual learners' needs. Intelligent tutoring systems and adaptive platforms can identify strengths and weaknesses, offering exercises suited to specific proficiency levels and learning styles (Woolf, 2021). This personalization is critical in language education since learners acquire English at different paces and with diverse strategies. Chen et al. (2020) demonstrated that AI-powered platforms adjust vocabulary difficulty, grammar exercises, and reading comprehension tasks, creating student-centered environments that improve learning efficiency. Beyond learner benefits, AI also helps teachers enhance instructional effectiveness. Through AI-driven analytics, educators can track student performance in real time, identify areas needing intervention, and provide targeted feedback (Roll & Wylie, 2016). Holmes et al. (2021) similarly noted that AI tools such as automated writing evaluators and chatbots augment teacher capacity by delivering immediate feedback, allowing teachers to focus on higher-order learning tasks. Moreover, studies have shown that AI fosters student engagement by encouraging active participation through dialogue systems and interactive platforms. Xu and Warschauer (2020) observed that automated feedback and interactive features

in AI tools motivated students to sustain participation, promoting self-directed and continuous learning.

Despite these promising contributions, literature also documents substantial challenges. Concerns over ethical issues such as data privacy, algorithmic transparency, and potential bias in AI systems continue to pose barriers to widespread adoption (Williamson & Eynon, 2020). The digital divide and unequal access to technology and digital literacy remain significant obstacles, especially in developing countries with limited infrastructure and connectivity (van Deursen & van Dijk, 2019). Zawacki-Richter et al. (2019) also emphasized the lack of teacher training as a critical barrier, noting that educators struggle to meaningfully incorporate AI into their pedagogy without adequate preparation and professional development. These challenges highlight the need for AI integration strategies that are both technologically sound and socially and institutionally supportive.

Although international scholarship on AI in education is extensive, research within the Philippine higher education context, particularly in English instruction, remains limited. Most existing studies in the country emphasize educational technology applications in STEM disciplines, with less attention given to language learning (Magsambol, 2020). Within state universities and colleges (SUCs), little empirical evidence exists on how AI influences English teaching, particularly on regional campuses such as CSU Piat. This gap leaves educators and policymakers without sufficient data to design policies, faculty development programs, and institutional support structures tailored to language instruction. Addressing this gap, the present study provides empirical insights into educators' experiences with AI integration in English teaching, examining its potential and barriers. Doing so contributes to the broader discourse on AI-enhanced pedagogy in Philippine higher education and offers practical implications for building sustainable and inclusive AI adoption strategies.

Research Objectives

1. To explore the perceptions and experiences of English educators at Cagayan State University Piat Campus in integrating AI tools into their pedagogical practices.
2. To examine the impact of AI-driven instructional strategies on student engagement and learning outcomes in English education.
3. To identify the challenges and opportunities faculty encounter in adopting AI technologies within the English education curriculum at Cagayan State University, Piat Campus.

Research Methodology

This study employed a qualitative research design to capture in-depth perspectives on the integration and perception of artificial intelligence (AI) within cultural and social contexts. A qualitative approach was deemed most appropriate as it allows for a rich, interpretive understanding of how individuals construct meaning around AI, rather than limiting findings to numerical generalizations. Specifically, semi-structured interviews were chosen as the primary data collection method because they provide flexibility for probing participants' responses while maintaining a consistent set of guiding questions. This method allowed participants to freely express their attitudes, experiences, and concerns, while allowing the researcher to explore emerging issues in greater depth.

To ensure that a broad range of perspectives was represented, the study used purposive sampling, deliberately selecting individuals who varied across race, gender, age, educational attainment, and socio-economic background. This sampling strategy ensured diversity and inclusivity, enabling the study to examine how different aspects of identity shape perceptions of AI. A total of 20 participants were recruited, representing a cross-section of students, professionals, and community members from diverse cultural contexts. Including participants from varied social locations enriched the analysis by highlighting how identity markers influence access to technology, trust in AI systems, and expectations regarding its role in daily life.

The interviews were conducted over six weeks, either face-to-face or via secure online platforms, depending on participants' availability and preference. Each interview lasted between 45 minutes and one hour and followed a flexible guide covering topics such as perceived benefits of AI, fears and concerns, cultural attitudes, and the influence of media portrayals. Special attention was given to how cultural narratives, such as portrayals of AI in films, news outlets, and social media, shape individual and collective understandings of its potential risks and opportunities. All interviews were audio-recorded with participants' consent and transcribed verbatim for analysis.

The study adopted thematic analysis for data analysis following Braun and Clarke's (2006) six-phase framework. This process involved familiarization with the data, generating initial codes, identifying patterns, reviewing and refining themes, defining categories, and producing the final report. Through this method, recurring themes emerged around cultural ideologies (e.g., collectivist vs. individualist orientations), identity factors such as race and gender, and structural influences like

socio-economic status. These themes provided insights into how cultural and social factors mediate AI adoption, shaping enthusiasm and resistance toward its integration into daily life.

Ethical considerations were central to the research process. Participants received an informed consent form outlining the study's purpose, procedures, risks, and benefits. Participation was strictly voluntary, and individuals were free to withdraw at any point without penalty. To protect confidentiality, pseudonyms were assigned, and all identifying information was removed from transcripts. Data was stored securely in password-protected files; only the researcher could access the raw materials. Efforts were also made to minimize potential discomfort by ensuring that interview questions were respectful, non-intrusive, and sensitive to participants' cultural backgrounds. The study upheld academic integrity by adhering to these ethical principles while safeguarding participant rights and privacy.

This methodology ensured a rigorous and ethically sound exploration of AI perceptions within cultural and social contexts. By combining diverse perspectives with systematic thematic analysis, the study provided a nuanced understanding of how identity, cultural narratives, and societal structures influence attitudes toward AI adoption.

Results and Findings of the Study

Perceptions and Experiences of English Educators

The integration of artificial intelligence (AI) in English language teaching presents a complex landscape of opportunities and challenges, as revealed by the perceptions and experiences of educators. On one hand, teachers recognize the advantages of AI in pedagogy, highlighting its capacity to personalize instruction, provide real-time feedback, and automate routine tasks, allowing them to focus on creative and critical aspects of teaching. They observe that AI fosters higher student participation and engagement levels, as lessons become more adaptive and responsive to learners' needs. On the other hand, educators also identify significant challenges and barriers in adopting AI tools, including inadequate training, lack of infrastructure, connectivity issues, and concerns about data privacy and the possible displacement of human teachers. Despite these obstacles, the findings illustrate that AI has already begun to reshape pedagogical practices and student engagement, encouraging more interactive and data-driven approaches that improve classroom dynamics and learning outcomes. Together, these themes provide a nuanced understanding of how AI integration is perceived by educators, revealing both its transformative potential and the pressing issues that must be addressed for sustainable implementation.

Perceived Advantages of AI Integration in Pedagogy

This theme focuses on the various benefits that English teachers perceive when integrating AI tools into their teaching practices. Teachers view AI as a resource that makes teaching more effective, and students learn better. AI tools make learning more personal by customizing content to meet the needs of individual students, adjusting to their learning pace, and giving immediate feedback. These tools also allow educators to handle many students more effectively because routine activities such as grading, attendance tracking, and content delivery can be automated. Therefore, the creative and critical components of teaching, including curriculum development and student engagement, are better covered.

Educator G: *"AI tools allow me to provide individualized learning experiences for each student, which makes my lessons more effective and engaging."*

Educator C: *"Student involvement and participation are much higher when working with AI-based services. They are delivered in a manner that easily responds to every student's learning needs and preferences."*

Challenges and Barriers in AI Implementation

Explanation and Interpretation: This theme explores the obstacles teachers face as they incorporate AI in their classroom activities. Problems encountered include teacher education and preparation, a lack of proper technology infrastructure, and an unwillingness to embrace new changes. Many of these teachers would find themselves unequipped and inadequately trained to handle AI resources adequately. Other challenges include limited internet access, old hardware, and data privacy and security concerns. Some educators are also worried about the displacement of their roles and the long-term implications of AI on the teaching profession.

Educator D: *"There is a steep learning curve, and without proper training, it is difficult to integrate AI tools effectively into my teaching."*

Teacher L: *"Technical problems like slow internet connectivity and outdated computers prevent me from using AI-based tools regularly in the classroom."*

Teacher F: *"Some colleagues are concerned that AI will substitute human teachers and reduce the individual touch in the teaching process."*

Impact on Pedagogical Practices and Student Engagement

Elucidation and Interpretation: This theme illustrates how AI adoption has changed pedagogical practice and impacted learners' engagement. AI has introduced more interactive and data-driven approaches to education, fostering an environment

where students can actively participate and collaborate. Educators report that AI tools help them create a more dynamic classroom atmosphere, where real-time feedback and adaptive learning paths maintain student interest and improve academic performance. The data generated by AI also helps to give insights into students' progress, enabling educators to change their strategies and address the learning gaps properly.

Educator G: *"AI has revolutionized my teaching by making it more interactive and engaging, which has positively impacted student participation and interest."*

Educator I: *"Student engagement through AI has really increased, and then there should be a balanced combination of traditional ways with the aid of technology."*

Every theme elaborates on the various dimensions of AI integration from educators' perspectives. It thereby offers a rich understanding of the advantages and disadvantages they face in this evolving educational landscape.

The Impact of AI-Driven Instructional Strategies

The integration of artificial intelligence (AI) in English language teaching is reshaping classroom dynamics by influencing student engagement and learning outcomes and presenting new challenges for educators and learners. Findings from this study reveal three major themes that capture the varied dimensions of AI adoption in English instruction. First, AI-driven strategies have been found to enhance student engagement, making lessons more interactive, adaptive, and motivating through features such as gamification, real-time feedback, and individualized learning paths. Second, using AI improves learning outcomes by providing personalized instruction that addresses students' weaknesses, strengthens comprehension, and accelerates language acquisition. Finally, despite these benefits, teachers and students experience problems using AI-based instructional methods, including limited access to technology, a lack of training, overdependence on digital tools, and occasional inaccuracies in feedback. These themes offer a holistic picture of how AI is transforming English teaching, highlighting its potential to support learner-centered education while underscoring the need for balance, support, and careful implementation.

Enhancement of Student Engagement through AI-Driven Strategies

This theme discusses how AI-driven instructional strategies promote student engagement in the teaching of English. AI helps make learning more interactive and adaptive for every student, hence more attentive. Features like gamification, adaptive learning paths, and real-time feedback help keep students interested and lead to active

participation in lessons. The same technologies open scopes for autonomous pacing in pursuing other contents, thus creating a sense of autonomy and motivation.

Teaching Profession E: *"AI-based learning applications motivate the learners, as they create customized exercises that keep them continuing in the learning process."*

Student A: *"I feel more involved in my English classes because the AI tools make learning fun and help me understand topics better through interactive exercises."*

Enhanced Learning Outcomes through Personalized Instruction

This theme explains and interprets how AI-based approaches enhance learning outcomes by providing personalized learning. AI-based tools analyze student performance data and align lessons to a student's level and learning style so that the student learns and receives what is needed for their weaknesses. Such an approach identifies weaknesses in individual students, which can be addressed accordingly for more efficient and effective learning. Consequently, better comprehension, retention, and application of the English language skills are common among the students.

Educator C: *"The AI tools have significantly improved my students' understanding of complex grammatical concepts through the personalized feedback given."*

Student B: *"I can improve my English faster because the AI tools give me exercises that fit my learning pace and difficulty level."*

Problems Encountered in Using AI-Based Instructional Methods

This theme deals with the challenges faced in implementing AI-driven instructional strategies in English education. Although there are many benefits, there are challenges for teachers and learners, such as a lack of access to technology, a lack of training on AI tools, and over-reliance on technology. Other concerns include the quality and accuracy of AI-generated feedback and balancing traditional teaching methods and AI integration to ensure holistic learning.

Teacher F: *"AI tools are helpful, but I am worried that students become too dependent on them and lose the ability to think critically without technological aid."*

Student C: *"Sometimes the AI tools do not understand my answers or misinterpret my mistakes, which gets frustrating and confusing."*

Each theme offers an encompassing analysis of how AI-driven instructional strategies impact student engagement and learning outcomes, while spotlighting both the benefits and challenges of AI integration into the English learning process.

Obstacles and Prospects Faced by Faculty

Integrating artificial intelligence (AI) into English education at Cagayan State University Piat Campus reveals a landscape shaped by pressing challenges and promising opportunities. Faculty members reported that technological and infrastructural issues remain a significant barrier to seamless adoption, with outdated computer systems, unreliable internet connectivity, and a lack of technical support frequently hindering classroom implementation. At the same time, pedagogical and training concerns emerged as another critical factor, as many instructors felt unprepared to effectively integrate AI into their teaching due to limited exposure, insufficient workshops, and the need for continuous professional development to match the rapid pace of technological change. Despite these challenges, educators acknowledged AI's opportunities for improved teaching and learning, particularly its ability to personalize instruction, automate routine tasks, and create more interactive and engaging learning experiences. Together, these themes highlight the dual nature of AI integration, showing that while structural and pedagogical barriers must be addressed, the potential of AI to transform English instruction remains significant when supported with the right resources and training.

Technological and Infrastructural Obstacles in the Adoption of AI

This theme concerns the technological and infrastructural issues facing instructors in integrating AI technologies into the curriculum for English education. Such multilevel obstacles include outmoded computer systems, poor internet connectivity, and a lack of specialized technical support to keep the AI tools in proper working condition and resolve malfunctions. Such limitations can impede the seamless integration of AI, reduce the effectiveness of teaching and learn processes. In addition, inconsistency in the availability of technology among departments or campuses may exacerbate the issue, creating disparities in how AI tools are adopted and utilized.

Faculty Member A: *"Our campus infrastructure is not entirely equipped to support AI technologies, which limits our ability to use these tools effectively in our teaching."*

Faculty Member K: *"The frequent internet disruptions make it difficult to rely on AI tools for consistent classroom activities, affecting the overall learning experience."*

Faculty Member C: *"Technical problems in the AI software happen quite frequently. Without a quick response, they tend to hamper our teaching activity considerably.*

Pedagogical and Training Issues

Discussion and Interpretation: This theme discusses the pedagogical challenges that the faculties face and how there is an urgent need for proper training to ensure

that they use AI technologies properly while teaching. Many teachers may feel unprepared to adapt to AI tools' teaching methods, primarily because they lack familiarity and experience with how such technologies should be used. Moreover, the speed of change in AI requires continuous professional development. Training programs should not only target the technical basics of AI tools but also help educators understand their pedagogical implications so that they align their adoption with curriculum objectives and outcomes.

Faculty Member D: *"Structured workshops should be provided, specifically with teaching and learning content to be used with AI tools."*

Faculty Member E: *"The training currently does not suffice. We need practical hands-on activities and continuous facilitation to feel more confident working with the AI technologies."*

Faculty Member F: *"Knowledge on how AI can be assimilated into planning and assessment strategies is critical; without proper facilitation, we may employ the tools ineffectively."*

Opportunities for Improved Teaching and Learning

Explanation and Interpretation: This theme highlights the vast opportunities AI technologies offer to enhance teaching methodologies and student learning experiences. AI can provide personalized learning experiences by adapting to students' needs, fostering a more inclusive and supportive educational environment. It can also automate routine tasks, such as grading and administrative duties, allowing educators to focus more on student engagement and creative teaching strategies. This way, AI may introduce new means of content delivery and assessment through interactive learning modules and adaptive testing, making the learning process much more dynamic and engaging.

Faculty Member H: *"By automating grading and administrative tasks, AI frees up time for us to focus on developing better teaching materials and providing individualized support."*

Faculty Member I: *"The application of AI provides a whole new avenue of interactive and adaptive learning that may bring English education into a more fun and practical engagement.*

Every theme exhaustively expounds on the complex challenges, and the exciting opportunities faculty members encounter in adapting AI technologies. Such insights deepen one's understanding of the factors shaping AI integration and how they create different windows for teaching and learning at Cagayan State University Piat Campus.

Discussion of Results and Findings

The findings of this study reveal a complex and multifaceted view of how English educators at Cagayan State University Piat Campus perceive and experience the integration of artificial intelligence (AI) in their teaching practices. Across the three major clusters of themes, perceptions and experiences, instructional impacts, and faculty obstacles and prospects, there emerges a consistent pattern: while AI is broadly recognized for its transformative potential in pedagogy and student learning, its integration is hampered by structural, pedagogical, and cultural barriers that must be addressed for sustainable and equitable adoption.

One of the most salient findings is that educators perceive clear advantages of AI integration in pedagogy. Teachers emphasized that AI tools allow for individualized instruction, customization of content, and immediate feedback that addresses student needs in real time. It aligns with international studies, which highlight AI's role in promoting learner-centered instruction and reducing repetitive workloads for teachers (Holmes et al., 2021; Woolf, 2021). The teachers' testimonies underscore that automation of routine tasks such as grading, attendance tracking, and assignment distribution frees educators to devote more time to higher-level teaching functions, including curriculum design and fostering student engagement. These findings resonate with global literature, suggesting that AI integration not only enhances instructional efficiency but also transforms the pedagogical role of teachers from knowledge transmitters to facilitators of dynamic learning environments.

At the same time, the study highlights substantial challenges and barriers to AI implementation. Educators pointed to insufficient training, outdated technological infrastructure, unreliable internet connectivity, and concerns over data privacy and teacher displacement as major obstacles. These concerns mirror findings from Zawacki-Richter et al. (2019) and Williamson & Eynon (2020), which argue that successful AI integration requires more than technological deployment; it also demands adequate professional development and institutional preparedness. The anxieties expressed by educators regarding the potential displacement of human teachers reflect broader societal debates about AI's implications for labor, suggesting the importance of positioning AI as a complementary rather than a substitutive tool in education.

The results also indicate that AI has already begun to reshape pedagogical practices and enhance student engagement. Teachers observed that the introduction of AI has led to more interactive, adaptive, and data-driven lessons that foster greater participation and collaboration. Students reported feeling more motivated and

involved when lessons incorporated AI tools, echoing the findings of Xu and Warschauer (2020), who noted that gamification, adaptive learning paths, and real-time feedback heighten learner engagement. Moreover, using data analytics to track student progress allows educators to make more evidence-based adjustments in their teaching strategies, aligning with the shift toward data-driven decision-making in higher education. Nevertheless, the findings also caution against overreliance, as students noted frustrations with inaccurate AI feedback and teachers emphasized the need to balance traditional pedagogies with technological tools to maintain holistic learning.

Faculty perspectives further revealed that technological and infrastructural obstacles remain significant barriers to seamless AI integration. Limited access to updated devices, inconsistent campus infrastructure, and poor internet connection hinder consistent implementation. These findings are consistent with van Deursen and van Dijk (2019), who argue that technological inequality reinforces the digital divide, resulting in uneven opportunities for AI-enhanced instruction. Additionally, pedagogical and training issues emerged strongly, as many faculty members reported insufficient exposure to AI tools and inadequate support from training programs. It supports Luckin's (2017) view that continuous professional development is crucial to help educators understand the technical aspects of AI and grasp its pedagogical implications for curriculum alignment, assessment, and student outcomes.

Despite these challenges, educators recognized substantial opportunities for improved teaching and learning by adopting AI. Teachers noted that AI can support inclusivity by adapting to diverse learner needs and promote efficiency by automating administrative tasks. They also acknowledged AI's potential to enrich classroom dynamics through interactive modules and adaptive assessments. These positive experiences reflect the global discourse on AI's transformative role in creating student-centered learning ecosystems (Chen et al., 2020; Holmes et al., 2021). Recognizing these opportunities suggests that, with the right investments in infrastructure and professional development, CSU Piat could leverage AI to enhance teaching quality and learning outcomes.

Therefore, the findings underscore the dual nature of AI in English language education: it offers powerful tools for engagement, personalization, and efficiency, but its promise cannot be realized without addressing systemic barriers in infrastructure, training, and policy. This study contributes to the growing body of literature emphasizing that AI adoption must be situated within localized educational contexts, where cultural attitudes, resource availability, and institutional readiness shape both opportunities and challenges. For CSU Piat and similar higher education institutions

in the Philippines, sustainable AI integration requires a balanced approach that combines technological innovation with capacity building, equity-focused policies, and pedagogical sensitivity.

Conclusion

The study reflects a two-edged sword experience by the Cagayan State University Piat Campus faculty members in integrating AI technologies into the English education curriculum. The faculty members perceive the enormous opportunities that AI offers, including personalization in learning, increasing the engagement of students, and automation of some administrative tasks. These innovations may enhance the educational outcome and change traditional teaching methods.

However, faculty members are significantly challenged regarding technology and infrastructure, lack proper training, and need continuous professional development. Inadequate hardware, unreliable internet, and a lack of prompt technical support all challenge the easy integration of AI tools. Furthermore, pedagogical adaptation in AI also calls for a comprehensive training program.

Recommendations

1. Upgrade the technology infrastructure to enable high-speed internet access, the latest computing devices, and strong support systems required to support AI effectively in the organization.
2. Provide professional development workshops and training sessions to enable faculty to utilize AI for teaching purposes and technical applications. This will prepare the faculty for effective usage of AI tools while teaching.
3. Establish dedicated technical support teams to assist faculty in troubleshooting and maintaining AI tools, ensuring minimal disruption to the teaching process.
4. Encourage a balanced approach where AI technologies complement traditional teaching methods. This ensures that while leveraging AI's benefits, the human elements of teaching, such as critical thinking and personalized mentorship, are maintained.
5. Develop mechanisms to enable regular feedback from the faculty and the students themselves toward the constant revision and enhancement of AI integration strategies to better benefit the education community.

References

[1] Belarga, B., Guiquing-Clemente, B., Tulawie, A., Alih, C., Caban, R., & Manois, F. R. (2025). From page to praxis: The role of regional literature in shaping culturally grounded teaching methods in HEIs. International Journal on Culture, History, and Religion, 7(SI2), 356–371. https://doi.org/10.63931/ijchr.v7iSI2.206

[2] Butac, S. (2021). Communication satisfaction: A determinant for faculty job satisfaction in state universities and colleges in NCR, 2(1), 286-305.

[3] Butac, S., Manera, A., Gonzales, E., Paller, R., Eustaquio, M. T., & Tandoc, J. J. (2025). Forging global citizens: A comparative study of intercultural pedagogical practices of higher educational institutions in the Philippines. International Journal on Culture, History, and Religion, 7(SI2), 62–79. https://doi.org/10.63931/ijchr.v7iSI2.171

[4] Caliboso, J., Bagalay, B., Santiago, M., Bayan, R., Aguinaldo, I., & Belo, J. (2025). Literary texts as cultural tools: A study on contextualized learning strategies in Philippine higher education. International Journal on Culture, History, and Religion, 7(SI2), 340–355. https://doi.org/10.63931/ijchr.v7iSI2.205

[5] Camiring-Picpican, H., Flores, K., Caban, R., Mohadali, S., Galdonez, D., & Alih, C. (2025). Pedagogical innovations based on Philippine cultural practices: A framework for culturally responsive teaching in higher education. International Journal on Culture, History, and Religion, 7(SI2), 433–451. https://doi.org/10.63931/ijchr.v7iSI2.168

[6] Chen, L., Xie, H., & Han, J. (2020). Personalized learning with AI: Data analytics for education. Springer.

[7] Chen, X., Zou, D., Cheng, G., & Xie, H. (2020). Detecting latent topics and trends in educational technologies over four decades using structural topic modeling: A retrospective of all volumes of Computers & Education, 151, 103855. https://doi.org/10.1016/j.compedu.2020.103855

[8] Dela Cruz, L., Aguinaldo, I., Alzate, L. J., Camero, C., Abiado, K. R., & Gumpal, B. (2025). Fostering intercultural competence through culturally responsive pedagogy: Practices and perspectives in Philippine higher education institutions. International Journal on Culture, History, and Religion, 7(SI2), 36–50. https://doi.org/10.63931/ijchr.v7iSI2.187

[9] Dela Cruz, L., Manera, A., Ramirez, E., Macato, D., Catbagan, R. J. I., & Tulawie, A. (2025). Bridging cultures in the classroom: Analyzing pedagogical approaches that promote intercultural competence in multicultural higher education

settings. International Journal on Culture, History, and Religion, 7(SI2), 242–261. https://doi.org/10.63931/ijchr.v7iSI2.202

[10] Domingo-Alejo, J. (2024). AI-integrated administration tool design with ML technology for smart education system. 2024 4th International Conference on Advanced Computing and Innovative Technologies in Engineering (ICACITE), 1423-1428.

[11] Eustaquio, G. L. (2024). A deep analysis of the implementation of the technical strategy using AI in MBS. 2024 4th International Conference on Advanced Computing and Innovative Technologies in Engineering (ICACITE), 1472-1478. https://doi.org/10.1109/ICACITE60783.2024.10617117

[12] Eustaquio, M. T., Clemente, R., Joaquin, M., Manaois, F. R., Alih, C., & Tulawie, A. (2025). Reimagining pedagogy through cultural narratives: Integrating Philippine literature in higher education classrooms. International Journal on Culture, History, and Religion, 7(SI2), 262–277. https://doi.org/10.63931/ijchr.v7iSI2.203

[13] Eynon, R., & Malmberg, L. (2021). Adapting to AI in education: Barriers and opportunities for teachers. Learning, Media and Technology, 46(2), 134–151.

[14] Ferranco, M. (2025). Emotional intelligence and culturally grounded leadership: A study of small business owners in San Pedro, Laguna, Philippines. International Journal on Culture, History, and Religion, 7(SI2), 191–202. https://doi.org/10.63931/ijchr.v7iSI2.197

[15] Flores, K., Gadaza, A., Galdonez, D., Pihnuton, J., Soriano, R., & Killip, A. J. (2025). Decolonizing pedagogy: Integrating indigenous knowledge and Philippine historical narratives in higher education curricula. International Journal on Culture, History, and Religion, 7(1), 333–356. https://doi.org/10.63931/ijchr.v7i1.130

[16] Gadaza, A., Manera, A., Caban, R., Alih, C., Tulawie, A., & Picpican, H. (2025). Cultural identity and historical consciousness: A study of Philippine history instruction in tertiary education. International Journal on Culture, History, and Religion, 7(SI2), 19–35. https://doi.org/10.63931/ijchr.v7iSI2.135

[17] Gadaza, A., Manera, A., Santos, S., Alih, C., & Caban, R. (2025). Reviving the past, teaching the future: The role of Philippine cultural heritage in curriculum development of teacher education programs focus. International Journal on Culture, History, and Religion, 7(SI2), 80–97. https://doi.org/10.63931/ijchr.v7iSI2.169

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

[19] Holmes, W., Bialik, M., & Fadel, C. (2021). Artificial intelligence in education: Promises and implications for teaching and learning. Boston: Center for Curriculum Redesign.

[20] Luckin, R. (2017). Towards artificial intelligence–based assessment systems. Nature Human Behaviour, 1(3), 1–3. https://doi.org/10.1038/s41562-017-0055

[21] Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. (2016). Intelligence unleashed: An argument for AI in education. Pearson.

[22] Magsambol, B. (2020, September 21). Education technology in the Philippines: Trends and challenges. Rappler. https://www.rappler.com/technology/features/education-technology-philippines

[23] Manera, A., Dalaten, M. A., Matammu, C., Catungal, M., Prestoza, M. J., & Ligutan-Siplac, G. (2025). Narratives of nationhood: Culturally attuned pedagogies for Filipino literature in a multilingual educational landscape. International Journal on Culture, History, and Religion, 7(SI2), 296–312. https://doi.org/10.63931/ijchr.v7iSI2.158

[24] Navasca, R., Abaquita-Espiritu, J., Calaranan, M., Navasca, M., Tugelida, N. B., & Tamayo, S. (2025). Culturally rooted pedagogies in technical-vocational education: Teaching practices and cultural integration among TVL-TLE instructors and professors in Philippine higher education. International Journal on Culture, History, and Religion, 7(SI2), 372–387. https://doi.org/10.63931/ijchr.v7iSI2.207

[25] Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. International Journal of Artificial Intelligence in Education, 26(2), 582–599. https://doi.org/10.1007/s40593-016-0110-3

[26] San Jose, R. L. (2024). The roadmap for creating and implementing CBS through artificial intelligence. 2024 4th International Conference on Advanced Computing and Innovative Technologies in Engineering (ICACITE), 1461-1466. https://doi.org/10.1109/ICACITE60783.2024.10616692

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

[28] van Deursen, A. J. A. M., & van Dijk, J. A. G. M. (2019). The first-level digital divide shifts from physical access to material access inequalities. New Media & Society, 21(2), 354–375. https://doi.org/10.1177/1461444818797082

[29] Williamson, B., & Eynon, R. (2020). Historical threads, missing links, and future directions in AI in education. Learning, Media and Technology, 45(3), 223–235. https://doi.org/10.1080/17439884.2020.1798995

[30] Woolf, B. P. (2021). Building intelligent interactive tutors: Student-centered strategies for revolutionizing e-learning. Morgan Kaufmann.

[31] Xu, Y., & Warschauer, M. (2020). Young children's online learning during COVID-19: Perspectives of Chinese parents. ECNU Review of Education, 3(4), 547–561. https://doi.org/10.1177/2096531120926162

[32] Zawacki-Richter, O., Baecker, E., & Friedrich, R. (2019). The role of AI in language learning: Emerging trends and prospects. Educational Technology & Society, 22(3), 72–85.

[33] 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, 39. https://doi.org/10.1186/s41239-019-0171-0