
Trials and triumphs of Teachers in Using AI in Instruction

Jemboy R. Hermogenes, MAED¹, James L. Paglinawan, PhD²

¹Teacher III, Department of Education, Miaray National High School, **Philippines**

²Professor, College of Teacher Education, Central, Mindanao University, **Philippines**

DOI - <http://doi.org/10.37502/IJSMR.2025.81021>

Abstract

This study explored the trials and triumphs of teachers in using artificial intelligence (AI) in instruction at Miaray National High School, Danggagan, Bukidnon. With the Philippine Department of Education's establishment of the Education Center for AI Research (E-CAIR) in 2025, AI integration has become a national priority, yet teachers continue to confront varied experiences influenced by local contexts. Employing a qualitative case study design, the research gathered data from teachers actively using AI tools and analyzed their responses using Braun and Clarke's (2006) thematic analysis. Findings revealed three major themes on the reasons for AI use: instructional efficiency and time optimization, enhanced student engagement, and personalized learning support. However, teachers also faced significant trials, including infrastructure limitations, technical skill gaps, and ethical concerns related to content accuracy and student misuse. Despite these challenges, teachers recognized several triumphs, such as promoting independent learning, motivating students, and improving instructional innovation. The study also highlighted teachers' recommendations centered on the guided and reflective integration of AI beginning with simple tools, aligning AI use with instructional goals, and promoting responsible and ethical practices. The findings emphasize the necessity of continuous professional development, strengthened digital infrastructure, and robust institutional policies to ensure equitable and ethical AI adoption. Ultimately, the study concludes that AI, when integrated purposefully and reflectively, can empower teachers, enrich student learning, and transform instructional practices in the digital age.

Keywords: Artificial intelligence, instructional effectiveness, digital literacy, ethical practice, reflective pedagogy, educational technology.

1. Introduction

The rapid advancement of artificial intelligence (AI) has transformed educational settings worldwide, presenting both opportunities and challenges for teachers at all levels. In the Philippines, the national government has prioritized the responsible and ethical integration of AI in education, as evidenced by the Department of Education's (DepEd) recent initiatives. The launch of the Education Center for AI Research (E-CAIR) in 2025 marks a significant milestone, aiming to drive innovation in basic education through AI-powered solutions and to align with the country's broader digital transformation agenda. This national push is complemented by policy guidance from agencies such as National Economic Development Authority, which emphasizes unified strategies and ethical governance frameworks for AI adoption in education.

At the regional and local levels, the impact of these national directives is increasingly visible. For instance, in Northern Mindanao, the integration of AI into classroom practice has sparked vigorous debates about its implications for teaching quality, student engagement, and ethical considerations. This local development reflects a growing recognition of AI's potential to enhance instruction, personalize learning, and support administrative functions, while also highlighting persistent challenges such as infrastructure gaps, teacher readiness, and the need for sustained professional development.

The significance of this study lies in its focus on the lived experiences of educators as they traverse the complexities of AI integration. Teachers are not only early adopters but also critical mediators who mold how AI tools are used to support student learning. Their successes and struggles provide valuable insights into the conditions necessary for effective and equitable AI adoption. Understanding these experiences is crucial for informing policy, designing relevant professional development, and ensuring that AI serves as a tool for empowerment rather than exclusion.

The purpose of conducting this study is to systematically examine the actual experiences, challenges, and successes of teachers in integrating AI into their instructional practice, from national reforms down to local realities. By foregrounding both the obstacles and breakthroughs encountered by educators, this study seeks to inform policy makers, school leaders, and education stakeholders about the contextual factors affecting AI adoption. Moreover, it aims to identify best practices and actionable recommendations that can guide future professional development initiatives, curriculum modifications, and resource allocations, ultimately supporting teachers in harnessing AI for improved educational outcomes.

A growing body of literature highlights the importance of examining both the challenges and successes of AI integration in education. In the Philippine context, Villarino (2025) investigated the adoption and ethical implications of AI tools among rural college students, revealing that while AI applications like ChatGPT can stimulate engagement and creativity, significant barriers remain, including infrastructure limitations and ethical concerns. Mediodia (2025) explored the perceptions of primary teachers in Iligan City, finding that while teachers generally view AI positively for its potential to enhance enjoyment and reduce workload, confidence in advanced technological skills remains low, emphasizing the need for ongoing support and training. Mangubat and Paglinawan (2025) examined high school science teachers' experiences, highlighting both the instructional benefits of AI tools and the persistent challenges related to infrastructure, training, and academic integrity.

In international context, Wang et al., (2024) conducted a systematic review demonstrating that AI in education can enhance problem-solving and collaboration skills, but its effectiveness depends on teacher training and ethical safeguards. Su (2023) found that AI-assisted environments in early childhood education can motivate learning and stimulate interest, if teachers are equipped with the necessary skills and support. The 2025 AI Index Report by Stanford HAI (2024) offers a comprehensive, data-driven perspective, noting that while AI adoption in education is accelerating globally, disparities in access, policy clarity, and teacher preparedness continue to shape outcomes.

Through situating the trials and triumphs of teachers within both national policy developments and global research, this study aims to provide a nuanced understanding of the

factors that enable or hinder effective AI integration in instruction. Such an understanding is essential for crafting responsive policies, designing targeted professional development, and ultimately ensuring that AI serves as a catalyst for educational improvement across diverse contexts.

Objectives of the Study

This research aimed to provide a comprehensive understanding of the trials and triumphs experienced by teachers in using AI in instruction, at Miaray National High School, Miaray, Danggagan, Bukidnon, Danggagan District of the Division of Bukidnon. Specifically, this study sought to answer the following questions:

1. What are your reasons for using AI in instruction?
2. What are the trials you encounter in using AI in instruction?
3. What are your perceived triumphs in using AI in instruction?
4. What are your recommendations to those teachers using AI in instruction?

2. Methodology

A qualitative case study approach was utilized to thoroughly examine the trials and triumphs of teachers in using AI in instruction at Miaray National High School. This case study design enabled an in-depth and contextualized exploration of the lived experiences, interactions, and meaning making of teachers within a distinct institutional environment. The chosen site, Miaray National High School in the Danggagan District, Division of Bukidnon served as the focal context for understanding how Junior High School teachers integrate AI tools into their instructional practices amid varying levels of technological readiness, administrative support, and resource availability.

The study participants consisted of seven Junior High School teachers, comprising a diverse group in terms of age, gender, length of service, subject specialization, and digital competency levels. This demographic diversity ensured a broad representation of perspectives and experiences regarding AI integration in classroom instruction. Participant selection employed purposive sampling, targeting teachers who actively used AI tools in lesson planning, assessment, or instruction. Additional criteria included at least one year of teaching experience and willingness to participate in reflective discussions about their AI integration practices.

Data collection was conducted through semi-structured interviews designed to foster open, reflective, and experience-based responses. The interview guide consisted of broad, thematic questions such as: (1) What are the reasons for using AI in instruction, (2) What are the trials encounter in using AI in instruction, (3) What are the perceived triumphs in using AI in instruction, and (4) What are the recommendations to those teachers using AI in instruction.

Thematic Analysis, as developed by Braun and Clarke (2006), was employed to systematically analyze the qualitative data and identify patterns or themes reflecting the teachers' trials and triumphs. This six-phase analytic process encompassed data familiarization, coding, theme generation, reviewing, defining, and writing-up, maintaining a transparent and iterative flow throughout. Data saturation was achieved when additional interviews yielded no new codes or relevant themes—indicating that the collected data sufficiently captured the range of experiences needed to answer the research questions. Techniques to ensure trustworthiness included member checking, where participants validated the accuracy of transcribed

statements; peer debriefing, to refine interpretations and reduce researcher bias; and reflexive journaling, which maintained awareness of the researcher's assumptions and positionality.

3. Results and Discussion

Table 1. Reasons for using AI in instruction

Emerging Theme	Responses	Participants
Instructional Efficiency and Time Optimization	Teachers use AI to streamline lesson planning, material preparation, and assessment, significantly saving time and reducing workload.	P1, P2, P4
Enhanced Student Engagement and Interactive Learning	AI fosters more engaging, visually appealing, and interactive classroom experiences through dynamic presentations and game-based learning tools.	P1, P2, P3
Personalized and Inclusive Learning Support	AI enables teachers to monitor student progress, provide timely feedback, and create diverse instructional materials catering to various learning styles.	P5, P6, P7

Enhancing Teaching Efficiency and Student Engagement through AI Integration

The integration of artificial intelligence (AI) in education is fundamentally transforming how teachers deliver instruction and how students engage with learning. Based on the responses of teachers, the theme “Enhancing Teaching Efficiency and Student Engagement through AI Integration” is strongly supported by their experiences. Teachers consistently report that AI streamlines lesson planning, instructional material preparation, and assessment, which significantly saves time and reduces workload. For example, participants noted that AI allows them to create lesson plans and instructional materials more efficiently, freeing up valuable time that can be redirected toward improving instructional quality and providing individualized support to students. This efficiency is not limited to preparation; AI also automates routine tasks such as grading and progress tracking, enabling teachers to focus on more meaningful interactions with their students.

Moreover, AI is credited with promoting more engaging and interactive classroom experiences. Teachers highlighted how AI-powered tools help them design visually appealing presentations, incorporate educational games, and develop dynamic learning activities that keep students actively involved. These tools not only make lessons more interesting but also cater to different learning preferences, ensuring that students remain motivated and attentive. The use of AI-driven platforms and intelligent tutoring systems provides immediate feedback and personalized guidance, which further enhances student engagement and learning outcomes.

Another significant benefit of AI integration is its capacity to support personalized and inclusive learning. Teachers use AI to monitor student progress, provide timely feedback, and create diverse instructional materials that address various learning styles and needs. This personalized approach ensures that each student receives instruction tailored to their strengths

and areas for improvement, promoting equity and inclusivity in the classroom. AI-driven analytics also help teachers identify students who may be struggling, allowing for timely interventions and targeted support.

The implications of these findings are far-reaching. First, they highlight the need for ongoing professional development to equip teachers with the skills necessary to effectively integrate AI tools into their practice. Second, they highlight the importance of investing in digital infrastructure to ensure that all students and teachers have access to AI-enhanced educational resources. Third, they call for the development of ethical guidelines and policies to address issues

such as data privacy and responsible AI use, ensuring that the benefits of AI are realized without compromising the safety and rights of students and educators. Importantly, while AI offers substantial advantages, it should be viewed as a complement to, rather than a replacement for, the human educator's role in promoting critical thinking, creativity, and collaboration.

According to Villarino (2025), AI adoption in rural Philippine higher education resulted in positive perceptions about its role in enhancing learning, despite existing infrastructural challenges. Likewise, Lacuna (2025) emphasized the significant impact of AI on lesson planning and personalized learning support among pre-service teachers. In parallel, Dapiroc (2025) demonstrated that AI-assisted instruction in science education notably increased both student engagement and understanding. Internationally, Prestoza and Banatao (2024) showed that passion-driven AI pedagogy improved student engagement and academic outcomes in Filipino schools. Furthermore, Yu (2024) documented the effectiveness of AI-driven personalized learning systems in boosting student motivation. Lastly, Létourneau (2025) conducted a comprehensive review of intelligent tutoring systems worldwide, finding that AI tools providing immediate feedback and adaptivity significantly improved learning outcomes when combined with sound pedagogical methods. Taken together, these studies affirm that AI integration when supported by appropriate infrastructure, teacher training, and well-designed instructional strategies substantially enhance teaching efficiency and enriches student engagement.

Table 2. Trials encountered in using AI in instruction

Emerging Theme	Responses	Participants
Infrastructure and Access Issues	Unstable or low internet connectivity disrupting AI tools; paid subscriptions limiting access.	P1, P3, P6
Technical and Skill Challenges	Difficulty learning and properly using new AI platforms; lack of familiarity affecting effective integration.	P4
Ethical and Pedagogical Concerns	Concerns over AI content accuracy; student misuse of AI for copying; over-reliance hindering critical thinking.	P2, P5, P7

Barriers to Effective AI Integration Due to Technical, Pedagogical, and Ethical Challenges

Barriers to effective AI integration in instruction are multifaceted, as highlighted by participants who identified technical, pedagogical, and ethical challenges. For instance, infrastructure and access issues—such as unstable or low internet connectivity and the requirement for paid subscriptions—were reported by several participants (P1, P3, P6), illustrating how unreliable digital infrastructure and financial constraints can disrupt AI tool usage in classrooms. These findings align with Philippine studies like Distor (2021), who underscored resource allocation issues and a shortage of AI experts as major obstacles, and Vesna et al. (2024), who noted limited connectivity and outdated technology in rural areas as key barriers to AI adoption. Moreover, recent literature discusses the paradox of promoting advanced AI tools while many students lack basic internet access, further reinforcing the challenge of infrastructure.

Additionally, technical and skill-related difficulties were mentioned by participant P4, who struggled to learn and effectively use new AI platforms, reflecting a broader issue of digital literacy and educator readiness. This concern is consistent with international research by Novianti (2025), which highlighted unequal access and low digital literacy as substantial barriers, and Jose and Jose (2024), who reported that lack of training and over-reliance on AI present significant global challenges. These studies reinforce the importance of ongoing professional development to support teachers in meaningful AI integration.

Ethical and pedagogical concerns were raised by participants P2, P5, and P7, who expressed worries about AI-generated content accuracy, student misuse for copying, and the risk of over-dependence on AI compromising critical thinking. Similarly, Krishna (2024) explored the dual aspects of AI's impact, emphasizing the need for balanced integration and ethical safeguards. Research consistently warns that unchecked AI use may lead to academic dishonesty, reduced creativity, and biased educational outcomes.

Taken together, these converging barriers suggest that successful AI integration requires a multifaceted approach. Addressing infrastructure gaps is crucial to ensure reliable AI access for all students and teachers. Simultaneously, investing in teacher training to enhance digital literacy and confidence is equally important. Furthermore, developing ethical guidelines and pedagogical frameworks is essential to protect academic integrity and foster critical thinking, rather than promoting passive reliance on technology. Without such comprehensive support, the potential of AI to personalize learning and improve educational outcomes may remain unrealized, particularly in resource-constrained environments.

Table 3. Perceived triumphs in using AI in instruction

Emerging Theme	Responses	Participants
Enhanced Student and Motivation	AI increases student engagement, motivation, and active involvement in class discussions, leading to improved learning outcomes and curiosity.	P1, P3, P6

Personalized and Independent Learning	AI enables teachers to provide personalized learning experiences, helping students become more confident and independent in their learning journey.	P4, P5
Instructional Efficiency and Innovation	AI supports teachers in managing time better, delivering efficient content, and generating innovative ideas to address diverse learner needs.	P2, P7

Empowering Teaching and Learning through AI-Driven Engagement and Personalization

The theme of Empowering Teaching and Learning through AI-Driven Engagement and Personalization is clearly evident in the teachers' responses, who experienced firsthand the transformative impact of AI in their classrooms. Firstly, teachers revealed that AI tools not only streamline lesson planning and assessment but also enhance student engagement and facilitate personalized learning experiences. For example, participants noted that AI enables them to develop interactive presentations, monitor student progress effectively, and tailor instruction to meet individual student needs, which in turn fosters greater motivation, curiosity, and independent learning. However, these benefits are optimized only when AI integration is intentional, accompanied by clear pedagogical goals and ongoing reflective practice.

Moreover, the implications of this theme are substantial for both educational policy and practice. To begin with, it underscores the necessity for robust digital infrastructure and equitable access to AI resources, thereby ensuring that all teachers and learners benefit from technology-enhanced education. In addition, it highlights the critical need for comprehensive professional development programs that not only increase teachers' technical skills but also cultivate reflective and ethical AI use. Furthermore, it emphasizes the importance of participatory design involving educators and the establishment of clear institutional policies addressing data privacy, content accuracy, and responsible AI utilization. Consequently, by embracing a guided and reflective approach, educational stakeholders can harness AI's potential to personalize learning, promote engagement, and improve educational outcomes, while simultaneously safeguarding academic integrity and human agency.

Supporting this perspective, recent Philippine literature confirms these findings. For instance, the Department of Education's establishment of the Education Center for AI Research (E-CAIR) in 2025 signals a national commitment to developing AI-driven educational solutions with an emphasis on inclusivity and data-driven reforms. Additionally, a meta-study by Far Eastern University (2025), synthesizing 43 investigations on AI in Philippine education, identified implementation disparities, largely positive student attitudes, alongside challenges including infrastructure deficits, gaps in technical expertise, and ethical concerns. Furthermore, research focusing on AI integration in rural higher education contexts revealed that while students find AI tools helpful and user-friendly, they also express concerns regarding information accuracy, critical thinking, and academic integrity, thus underscoring the imperative for clear institutional AI policies and literacy programs.

Internationally, the U.S. Department of Education (2025) reports that AI holds promise in addressing unfinished learning, alleviating teacher workload, and enabling customized curricular resources, conditional upon robust policy frameworks and professional development initiatives. In addition, a 2025 *Frontiers in Education* study modeled the influence of AI dependence on research skills and self-efficacy among STEM students, concluding that AI's empowering effects are contingent on intentional and reflective integration with strong safeguards for academic integrity and critical thinking. Finally, Ilkou (2025) stressed the critical role of participatory design and comprehensive ethical frameworks in the successful implementation of AI-driven educational solutions in the Philippine context, based on stakeholder engagement and field research. Collectively, these insights reaffirm that effective AI integration necessitates a multifaceted, reflective, and ethically grounded approach to fully realize its transformative potential in education.

Table 4. Recommendations to those teachers using AI in instruction

Emerging Theme	Responses	Participants
Purposeful and Gradual AI Integration	Teachers recommend exploring AI tools gradually, starting with simple features and matching them with teaching goals to build confidence and effectiveness.	P3, P4
Maximizing AI for Instructional Enhancement	Teachers suggest using AI tools (e.g., Classpoint, Canva) to create interactive content, enhance student performance, and maximize free resources.	P1, P6
Responsible and Ethical AI Use	Teachers emphasize the importance of understanding AI's value and risks, reviewing AI outputs, and teaching students responsible and ethical use.	P2, P5, P7

Guided and Reflective Integration of AI Tools to Enhance Instruction and Student Performance

The theme of Guided and Reflective Integration of AI Tools to Enhance Instruction and Student Performance is strongly supported by the recommendations and insights shared by teachers. Participants emphasized that AI should be used purposefully and gradually; specifically, teachers should start with simple tools and features, expanding their use as confidence and skill develop. For example, teachers suggested exploring AI tools like Classpoint and Canva to create interactive presentations and maximize free resources, while also ensuring that AI use aligns with specific teaching goals. Consequently, this approach ensures that AI integration is not haphazard but strategically aligned with instructional objectives, leading to more meaningful student engagement and improved learning outcomes. Furthermore, teachers highlighted the importance of reviewing AI outputs for accuracy and appropriateness, as well as teaching students about the responsible and ethical use of AI. These practices demonstrate a reflective stance whereby educators critically evaluate both the benefits and risks of AI, ensuring that technology serves as a support rather than a substitute for effective pedagogy.

Moreover, the implications of this theme are significant for educational policy and practice. First, it underscores the need for comprehensive professional development that not only builds technical proficiency but also fosters reflective and ethical teaching practices. Teachers must be equipped to critically assess AI tools, align them with curricular goals, and model responsible use for their students. Second, institutional support is essential—clear guidelines, reliable infrastructure, and ongoing mentorship are necessary to promote sustainable and equitable AI integration. Third, continuous assessment and adaptation are required to ensure that AI enhances rather than diminishes core human elements of teaching, such as empathy, creativity, and critical thinking. Collectively, these implications point to a future where AI is a powerful ally in education, provided its integration is guided by thoughtful planning and reflective practice.

Furthermore, recent literature from the Philippines reinforces these findings. For instance, the Department of Education's launch of the Education Center for AI Research (E-CAIR) in 2025 illustrates a national commitment to developing AI-driven solutions that enhance teaching, learning, and school administration, with a focus on inclusivity and data-driven reform. Additionally, Villarino (2025) found that although rural college students in the Philippines perceive AI as helpful and user-friendly, they also express concerns about information accuracy, critical thinking, and academic integrity, thereby highlighting the need for clear institutional policies and AI literacy programs. Likewise, Lacuna (2025) reported that pre-service teachers recognize AI's potential to improve lesson planning and personalized learning but stress the importance of adequate training and ethical guidelines to ensure AI complements rather than replaces human educators.

Internationally, the U.S. Department of Education (2025) noted that AI can help address unfinished learning, alleviate teacher workload, and enable customization of curricular resources, provided its use is supported by strong policy frameworks and professional development. Moreover, Kabanda (2025) emphasized that AI's paradigm-shifting influence in higher education is most effective when pedagogical processes are improved through guided and reflective integration. Additionally, Mediodia (2025) found that the integration of AI tools like ChatGPT in Philippine classrooms significantly enhances personalized learning outcomes but also necessitates careful monitoring and teacher oversight to maintain quality and appropriateness. Therefore, these studies collectively underscore the critical importance of thoughtfully planned, sustained, and ethically guided AI integration in education to maximize benefits and minimize risks.

Conclusion

Based on the findings of the study, the following conclusions are drawn:

- AI integration significantly enhances teaching efficiency and student engagement, enabling teachers to streamline lesson preparation, automate grading, and focus more on interactive and personalized instruction.
- Despite its benefits, technical, pedagogical, and ethical barriers such as poor internet connectivity, lack of digital skills, and concerns about academic integrity hinder optimal AI adoption in classrooms.
- Teachers experience empowerment through AI-driven engagement and personalization, as AI tools foster independent learning, adaptability to student needs, and motivation when integrated thoughtfully with clear pedagogical goals.

- The success of AI integration depends on guided and reflective practices, ensuring that technology complements human teaching, promotes ethical use, and aligns with educational objectives and learning outcomes.

Recommendation

Based on the study's findings, the study has the following recommendations:

- Provide continuous professional development focused on building teachers' digital literacy, pedagogical innovation, and ethical awareness in using AI for instruction.
- Strengthen digital infrastructure and access by improving internet connectivity and ensuring equitable provision of AI resources across schools, especially in rural or under-resourced areas.
- Establish institutional policies and ethical guidelines that govern AI use in education, highlighting accuracy, data privacy, and responsible student engagement with AI tools.
- Encourage reflective and purposeful integration of AI, starting from simple applications and progressively adopting advanced tools that align with curriculum goals and promote active, personalized learning.

Acknowledgements

This period has been a time of profound learning for the researcher, encompassing not only academic and scientific development but also personal growth. The successful completion of this research was made possible through the support, guidance, and inspiration of many individuals, to whom he extends his deepest gratitude.

He sincerely thanks his family and friends for their unwavering encouragement, which served as a source of strength and motivation throughout this journey. Their constant support made the challenges of the research process more bearable and meaningful.

The researcher also extends his appreciation to the teachers Miray National High School, Division of Bukidnon for their invaluable participation. Their cooperation in completing the interview provided essential data that greatly enriched the study's findings.

Profound gratitude is likewise given to Dr. James L. Paglinawan, the subject teacher of this course, for his insightful guidance, academic mentorship, and steadfast support. His expertise and valuable feedback were instrumental in navigating the complexities of the research process.

Above all, the researcher gives thanks to Almighty God for His enduring grace, wisdom, and strength. His divine guidance has been a constant source of inspiration, enabling the researcher to persevere through challenges and achieve this significant milestone.

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