Exploring Teaching Strategies among Filipino Pre-Service Teachers in Inclusive Classroom Settings in Eastern Visayas

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ABSTRACT:
The integration of Artificial Intelligence (AI) in education is increasingly shaping teaching strategies in inclusive classrooms, yet research on how Filipino pre-service teachers use AI in these settings remains limited, particularly in regions with varying technological access such as Eastern Visayas. This study employed a qualitative case study with ten pre-service teachers, anchored in the Digital Literacy Framework, to determine ethical, cultural, and pedagogical implications of AI use in inclusive teaching. Findings revealed that AI functions as a collaborative teaching ally, helping teachers overcome creative blocks, provide instant feedback, engage students interactively, and streamline lesson preparation. AI also supports student-centered teaching for diverse learners, enhances creativity, and improves instructional efficiency. Challenges included internet connectivity, cultural sensitivity of AI-generated content, and overreliance on technology. Opportunities highlighted AI's role in personalized learning, creative lesson planning, and enhancing instructional strategies. The study contributes to SDG 4 and SDG 9, and recommends AI-supported training and tailored tools for pre-service teachers in inclusive classrooms.

Keywords: Inclusive Education, Teaching Strategies, Filipino Pre-Service Teachers, Artificial Intelligence in Education, Eastern Visayas.

INTRODUCTION

The integration of Artificial Intelligence (AI) in education has become a transformative development, reshaping traditional teaching methods and opening new opportunities for enhancing learning experiences. AI tools—such as personalized learning systems, automated assessment platforms, and content generation technologies—are increasingly incorporated into teaching strategies, supporting teachers in delivering culturally responsive, student-centered, and efficient instruction (Kovalchuk et al., 2025). This study explores how Filipino pre-service teachers integrate AI into their teaching strategies during their internships, emphasizing its impact on lesson planning, student engagement, and teaching efficiency in inclusive classroom settings (Takona, 2024). In the Philippines, the Commission on Higher Education (CHED) has consistently encouraged the adoption of digital technologies in teacher education programs. The CHED

Memorandum Order No. 1, series of 2019, known as the "Policy on the Integration of ICT in Teacher Education Programs," calls for developing ICT literacy among future educators, enabling pre-service teachers to integrate modern technologies—including AI—ethically, responsibly, and in culturally appropriate ways. Despite these guidelines, limited research has examined how pre-service teachers apply AI in real classroom contexts, particularly in regions with varied technological access such as Eastern Visayas (Vilbar & Gonzaga, 2025).

This study aligns with SDG 4: Quality Education, which emphasizes inclusive and equitable learning for all, and SDG 9: Industry, Innovation, and Infrastructure, which promotes innovative educational practices. Grounded in the Digital Literacy Framework (Feerrar, 2019), the research examines the competencies Filipino pre-service teachers require to effectively integrate AI into teaching strategies, while also exploring both the benefits and challenges of AI integration. By highlighting AI's role in supporting lesson planning, interactive learning, and student-centered instruction, this study contributes to understanding how technology can enhance teaching strategies in inclusive classrooms, particularly in regions with varying access to digital tools.

This study explored the integration of Artificial Intelligence (AI) into the teaching strategies of Filipino pre-service teachers in inclusive classroom settings in Eastern Visayas during the School Year 2025–2026. Specifically, it determine how AI was integrated into teaching strategies, its influence on teaching practices, the challenges encountered, and the opportunities that emerged from its use in inclusive classrooms.

METHODOLOGY

Research Design

This study employed a descriptive single case study qualitative research design to explore the integration of Artificial Intelligence (AI) into the teaching strategies of Filipino pre-service teachers during their internship in inclusive classroom settings. This design allowed an in-depth analysis of how AI tools were applied in inclusive classrooms, including the challenges and opportunities experienced by pre-service teachers.

Research Locale

The study was conducted at a state university in Eastern Visayas that prepares pre-service teachers for inclusive classroom settings. The institution provides both theoretical knowledge and practical teaching experiences in an academic environment. Its location and commitment to equitable education made it ideal for exploring AI integration within the region's socio-cultural and technological contexts.

Research Participants

The study involved ten (10) Filipino pre-service teachers who had integrated Artificial Intelligence (AI) into their teaching strategies during their internships in inclusive classroom settings. All participants were officially enrolled for the School Year 2025–2026 and had completed their internship at the time of the study.

Research Instrument

The research instrument consisted of a semi-structured interview and focus group discussions lasting 30 to 60 minutes. These were conducted in a distraction-free and culturally respectful environment to ensure participant comfort and accuracy of responses. The instrument was validated by three qualitative research experts to ensure that the questions were relevant, appropriate, and aligned with the study's focus on AI integration in inclusive classroom teaching strategies.

Data Gathering Procedure

The data gathering procedure began with obtaining formal permission from the school administration and securing informed consent from the participants. Focus group discussions were then conducted to gather participants' experiences and insights on using AI in their teaching strategies within inclusive classroom settings. Member checking, data saturation, secure data storage, and confidentiality measures were observed to ensure the credibility, completeness, and ethical handling of the data.

Data Analysis

The data analysis followed the six steps of thematic analysis outlined by Braun and Clarke (2019). The researcher transcribed and reviewed the data, generated initial codes, grouped these codes into themes, and reviewed them based on the research objectives and inclusive classroom context. Member checking was conducted, and the final themes were interpreted in relation to the literature and the Digital Literacy Framework.

Ethical Considerations

The study followed strict ethical guidelines to protect the participants' rights, dignity, and well-being. Informed consent, voluntary participation, confidentiality, and the right to withdraw were ensured throughout the research process. Focus group discussions were conducted in a respectful and culturally sensitive manner within inclusive classroom contexts.

Trustworthiness

Trustworthiness was ensured through credibility, transferability, dependability, and confirmability. Member checking was used to allow participants to verify the accuracy of the transcribed data and interpretations. Detailed descriptions, an audit trail, and bias reduction measures strengthened the reliability and validity of the findings in inclusive classroom settings.

Reflexivity

The researcher maintained reflexivity by acknowledging possible biases, assumptions, and personal influence on the research process. Regular self-reflection was practiced during data collection, coding, theme development, and interpretation. This helped ensure that the findings reflected the authentic experiences of participants within inclusive classroom contexts.

RESULTS AND DISCUSSION

Perspectives of Filipino Pre-Service Teachers on the Integration of Artificial Intelligence in Teaching Strategies

This study explores the integration of Artificial Intelligence (AI) in the teaching strategies of Filipino pre-service teachers in Eastern Visayas, focusing on ethical, culturally responsive, and pedagogically sound practices in inclusive classroom settings. The emergent themes are as follows:

Theme 1: A Collaborative Teaching Ally

The integration of Artificial Intelligence (AI) into teaching strategies significantly enhances pre-service teachers' ability to streamline lesson planning, create culturally responsive materials, and design diverse assessments within inclusive classroom settings. By automating repetitive and administrative tasks, AI allows educators to dedicate more time to human-centered interactions with students, fostering deeper engagement, reflective teaching, and improved lesson quality. AI tools support differentiated instruction and help pre-service teachers address the needs of diverse learners, thereby reducing workload while maintaining culturally sensitive and inclusive pedagogical practices (Belloula, 2025). Furthermore, AI's role in content creation and lesson structuring aligns with Karagöl (2025), highlighting its contribution to efficient and ethically informed teaching practices. Significant participant responses include:

Significant response 1: "Technology allows me to quickly draft culturally relevant lesson plans, create varied assessment tasks, and generate rubrics, giving me more time to focus on student interaction." (P1, L15-29)

Significant response 2: "Incorporating AI helps me create personalized lesson plans and assessments, streamlining the content creation process and allowing me to handle my internship's heavy workload more efficiently." (P3, L25-29)

Theme 2: Overcoming Creative Blocks

Artificial Intelligence (AI) has become an essential tool for pre-service teachers to overcome creative blocks during lesson planning in inclusive classroom settings. It provides innovative activity ideas, culturally responsive strategies, and pedagogically aligned suggestions that help educators design lessons efficiently while maintaining alignment with learning objectives. AI supports the creation of engaging, inclusive, and interactive teaching materials, allowing teachers to meet their instructional goals without delays and sustain dynamic classroom environments. As noted

by Shah (2023), AI facilitates rapid lesson plan generation, improving the efficiency of teaching preparations. Significant participant responses include:

Significant response 1: "AI is my go-to tool when I face mental blocks, as it suggests activities and strategies that are perfectly aligned with the lesson objectives, making lesson planning faster and easier." (P2, L21-25)

Significant response 2: "When struggling with lesson planning, AI helps by offering innovative activity ideas and generating engaging material, ensuring that my teaching objectives are met without delays." (P5, L37-41)

Theme 3: Instant Feedback for Real-Time Improvement

Artificial Intelligence (AI) has proven to be a valuable tool for providing immediate, meaningful, and culturally responsive feedback to students in inclusive classroom settings, enabling teachers to address learners' needs in real-time. By automating assessments, AI allows for quick evaluation and timely feedback, helping students stay on track and enhancing learning outcomes (Owan et al., 2023). The ability to generate AI-powered quizzes, rubrics, and formative assessments facilitates real-time pedagogical adjustments, ensuring lessons remain engaging, relevant, and ethically aligned (Kapoor et al., 2026). Significant participant responses include:

Significant response 1: "By automating assessments, AI enables me to give students immediate, meaningful feedback, ensuring that I can help them stay on track and succeed during my internship." (P3, L25-29)

Significant response 2: "AI-generated quizzes and rubrics allow me to provide instant feedback, which is crucial for maintaining student engagement and improving learning outcomes during my internship." (P4, L30-32)

Theme 4: Engaging Students with Interactive Learning

Artificial Intelligence (AI) plays a critical role in enhancing student engagement in inclusive classroom settings by helping educators design dynamic, culturally responsive, and ethically informed lessons. It provides suggestions for interactive activities and generates visuals that keep students motivated, encourage participation, and foster human-centered learning experiences. By supporting the creation of real-time learning activities, AI helps students remain actively involved, promoting a collaborative, inclusive, and interactive classroom environment. These features have been shown to significantly improve student engagement, participation, and overall learning outcomes (Bhatia et al., 2024). Significant participant responses include:

Significant response 1: "AI helps me create dynamic classroom discussions by suggesting engaging activities and generating visuals, keeping my students focused and enhancing their learning experience." (P4, L30-32)

Significant response 2: "AI makes lessons more interactive by offering suggestions for engaging activities and generating relevant visuals, which keeps students motivated and improves classroom participation." (P5, L37-41)

Theme 5: Efficient and Streamlined Lesson Preparation

Artificial Intelligence (AI) significantly enhances the efficiency of lesson preparation in inclusive classroom settings by automating tasks such as creating quizzes, lesson plans, and learning activities, allowing educators to focus more on human-centered classroom delivery. By generating prompts, visuals, and assessments, AI provides teachers with greater flexibility to engage with students and refine ethically informed and culturally responsive teaching strategies. Additionally, AI streamlines lesson organization, reducing time spent on administrative tasks and enabling teachers to concentrate on interactive teaching, reflective pedagogy, and student engagement. Significant participant responses include:

Significant response 1: "AI has transformed my lesson prep by streamlining the process of creating quizzes, lesson plans, and activities, allowing me to spend more time focusing on classroom delivery." (P5, L37-41)

Significant response 2: "By automating lesson preparation tasks like generating prompts and visuals, AI gives me more flexibility to engage with students and refine my teaching strategies." (P6, L43-49)

Influence of Artificial Intelligence Integration on Teaching Strategies

Theme 1: Supporting Student-Centered Teaching

The integration of Artificial Intelligence (AI) into teaching strategies significantly enhances pre-service teachers' capacity to implement student-centered approaches in inclusive classroom settings. AI also enables differentiated instruction, allowing teachers to adapt lesson materials to accommodate diverse learning needs and cultural contexts, thereby improving overall teaching efficiency (Tang, 2024). Furthermore, AI tools support the creation of engaging, inclusive, and culturally responsive materials, helping educators design personalized learning experiences that foster active student involvement. Significant participant responses include:

Significant response 1: "By differentiating instruction and modifying materials, I can enhance student interaction while improving my efficiency." (P1, L72-76)

Significant response 2: "Streamlining lesson preparation and creating engaging materials helps me focus on student-centered teaching." (P5, L100-102)

Theme 2: Enhancing Creativity in Lesson Planning

Artificial Intelligence (AI) significantly enhances creativity in lesson planning by generating innovative ideas that make lessons more engaging, culturally relevant, and responsive to learners in inclusive classroom settings, particularly during demonstrations. It suggests interactive and student-centered activities, increasing lesson interactivity and promoting deeper student engagement (Yao et al., 2025). can design dynamic lessons that break traditional instructional barriers, allowing learners with diverse needs to participate more actively (Dayagbil et al., 2025). Significant participant responses include:

Significant response 1: "It generates creative ideas that make lesson integration more engaging, particularly for demos." (P2, L79-81)

Significant response 2: "The tool suggests engaging activities, making my lessons more interactive and interesting." (P4, L87-89)

Theme 3: Improving Efficiency in Teaching

Artificial Intelligence (AI) supports the streamlining of lesson preparation and material creation in inclusive classroom settings, directly contributing to a more efficient use of teaching time while allowing pre-service teachers to focus on human-centered and interactive student engagement. By automating repetitive and administrative tasks, such as grading and resource generation, AI enables teachers to dedicate more time to mentorship, personalized instruction, and culturally responsive teaching, enhancing both instructional quality and student learning outcomes (Belarmino et al., 2025). This increased efficiency not only saves valuable time but also allows for reflective pedagogical decision-making, leading to a more dynamic, interactive, and ethically grounded classroom experience. Significant participant responses include:

Significant response 1: "By automating repetitive tasks, I can focus more on interacting with students and improving classroom management." (P1, L75-76)

Significant response 2: "It helps streamline lesson preparation and material creation, allowing more time for student engagement." (P6, L101-102)

Challenges in Integrating Artificial Intelligence into Teaching Strategies

Theme 1: Internet Connectivity Issues

The integration of AI into teaching strategies faces significant challenges due to intermittent and unequal internet connectivity, particularly in regions like Eastern Visayas. This digital divide disrupts AI-integrated activities and limits the full utilization of AI tools for lesson planning, instructional decision-making, and student engagement in inclusive classroom settings. Inconsistent internet access affects teachers' ability to rely on AI during critical teaching moments, making it difficult to maintain dynamic, interactive, and culturally responsive learning environments (Alwaqdani, 2025). Significant participant responses include:

Significant response 1: "The journey presented real challenges, particularly the 'digital divide' in Eastern Visayas, where

intermittent internet connectivity often disrupted my planned AI-integrated activities." (P1, L136-138)

Significant response 2: "I can only use artificial intelligence when I have enough load or internet, making availability a challenge, though it provides me with immediate and logical ideas to integrate into my class." (P2, L139-141)

Theme 2: Accuracy and Cultural Sensitivity of AI-Generated Content

AI can sometimes produce content that is inaccurate, misleading, or culturally insensitive, requiring pre-service teachers to carefully review and verify each output before using it in inclusive classroom settings. Filipino pre-service teachers face the challenge of ensuring that AI-generated materials align with local educational standards and are culturally appropriate for diverse learners. Because AI outputs can be inconsistent, teachers must double-check for accuracy, relevance, and cultural appropriateness, making AI a tool that requires ethical oversight and reflective professional judgment (Nguyen & Nguyen, 2025). Significant participant responses include:

Significant response 1: "AI can sometimes produce inaccurate or culturally insensitive content, requiring me to review each output to ensure it aligns with local educational standards." (P1, L136-138)

Significant response 2: "I have to carefully check AI-generated content to ensure it is accurate and culturally appropriate for my students." (P4, L148-150)

heme 3: Dependence on Technology and Reliability

The integration of AI in teaching strategies is highly dependent on stable technology and internet access, which poses a significant challenge when these resources are intermittent or unavailable in inclusive classroom settings. While AI can enhance teaching efficiency, overreliance on technology can make classroom instruction vulnerable when tools fail to function as expected, impacting instructional decision-making and student engagement. Ensuring that all students have equitable and reliable access to the technology required for AI-generated content is also a critical challenge, as inconsistent access can hinder the effectiveness of AI in promoting inclusive and culturally responsive learning environments (Cui & Zhang, 2025). Significant participant responses include:

Significant response 1: "The biggest challenge is relying on internet access for AI use, which is not always stable, limiting how much I can incorporate it into my teaching." (P2, L139-141)

Significant response 2: "AI has made teaching more efficient, but the dependency on technology creates a vulnerability when the tools fail to work as expected." (P6, L160-162)

Opportunities in Integrating Artificial Intelligence into Teaching Strategies

Theme 1: Enhancing Student Engagement with Personalized Learning

The integration of AI offers Filipino pre-service teachers significant opportunities to enhance student engagement through personalized and culturally responsive learning experiences in inclusive classrooms. AI enables educators to create customized lesson plans and innovative visual aids, previously difficult to produce manually, making lessons more interactive, meaningful, and aligned with students' needs and cultural contexts. By generating new ideas for activities and lesson preparation, AI supports active participation, reflective learning, and value-conscious engagement, fostering a dynamic, ethically guided, and human-centered inclusive classroom environment (Tagupa, 2025). Significant participant responses include:

Significant response 1: "The most significant opportunity I encountered was the ability to enhance student engagement through personalized learning and creative visual aids that I wouldn't have been able to produce manually." (P1, L132-136)

Significant response 2: "The main opportunity has been enhancing student engagement through personalized learning and creative visual aids that were previously difficult to produce manually." (P3, L145-146)

Theme 2: AI as a Creative Teaching Tool

AI empowers Filipino pre-service teachers to explore innovative and culturally responsive ideas for lesson activities in inclusive classroom settings, making teaching strategies more creative, reflective,

and value-driven. By offering suggestions for strategies, interactive activities, and assessments, AI enhances lesson quality and effectiveness while ensuring alignment with student-centered instructional goals. AI supports the development of interactive lessons and student-centered activities, improving learning outcomes and nurturing critical thinking, reflection, and cultural awareness (Meng et al., 2025). Significant participant responses include:

Significant response 1: "AI gives me the opportunity to explore new ideas for lesson activities, making my lessons more creative and innovative." (P4, L148-150)

Significant response 2: "By using AI, I can create more creative learning materials and activities, making lessons more engaging and aligned with student needs." (P3, L145-146)

Theme 3: Efficiency in Lesson Planning and Material Creation

AI significantly simplifies lesson preparation in inclusive classroom settings by rapidly generating ideas, activities, and instructional materials, making teaching more efficient and reflective. By automating administrative tasks, AI enables Filipino pre-service teachers to focus on student-centered instruction, interactive engagement, and culturally responsive teaching practices. This increased efficiency contributes to more dynamic and effective learning environments, allowing teachers to devote additional time to refining lesson content, supporting diverse student needs, and making ethically and value-conscious pedagogical decisions (Aziez et al., 2025). Significant participant responses include:

Significant response 1: "AI simplifies lesson preparation by helping me quickly generate ideas and activities, making the teaching process more efficient." (P5, L173-174)

Significant response 2: "Using AI saves me time in preparing lessons and creating materials, which allows me to focus more on engaging with students and improving the lesson's quality." (P6, L160-162)

Conclusions

This study explored the integration of Artificial Intelligence (AI) into the teaching strategies of Filipino pre-service teachers in inclusive classroom settings in Eastern Visayas. The findings reveal that AI significantly enhances lesson planning, creativity, teaching efficiency, and student engagement, serving as a collaborative teaching ally that helps pre-service teachers overcome creative blocks, streamline administrative tasks, and design personalized, interactive, and culturally responsive learning experiences for diverse learners. However, challenges such as internet connectivity issues, the accuracy and cultural appropriateness of AI-generated content, and overreliance on technology must be addressed to maximize AI's potential in inclusive classrooms. The opportunities presented by AI, including its role as a creative teaching tool and its ability to increase instructional efficiency, suggest that it can play a transformative role in improving educational practices, particularly in regions with limited resources. Furthermore, the integration of AI aligns with SDG 4: Quality Education and SDG 9: Industry, Innovation, and Infrastructure, highlighting its potential to drive innovation, enhance teaching quality, and support inclusive and equitable learning opportunities. Grounded in the Digital Literacy Framework, the study demonstrates that AI enhances pre-service teachers' competencies in designing, implementing, and evaluating teaching strategies in inclusive classroom settings. Overall, AI holds significant promise for preparing future educators to meet the evolving demands of modern classrooms while fostering reflective, responsible, and student-centered teaching practices.

Recommendations

Teacher education programs should integrate AI-specific training modules to equip Filipino pre-service teachers with skills for lesson planning, student engagement, and instructional decision-making in inclusive classroom settings. Improving technological infrastructure and internet access, particularly in underserved regions, is essential to ensure equitable and reliable AI use. Pre-service teachers should be trained to critically evaluate AI-generated content and provided ongoing professional development, mentorship, and monitoring systems to foster value-conscious, culturally responsive, and student-centered teaching practices.

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Conflict of Interest

The researcher hereby declares that there are no conflicts of interest associated with this manuscript.

Ethics Approval

All participants provided their informed consent prior to their involvement in the study, acknowledging their understanding of the research procedures and voluntarily agreeing to participate. Furthermore, all participants were of legal age at the time of the study, ensuring compliance with ethical guidelines.

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