

Beyond the Screen and Page: Understanding Teachers' Lived Experiences with Artificial Intelligence in Education

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Abstract

This study aimed to explore teachers' lived experiences in integrating Artificial Intelligence (AI) in education, focusing on their perceptions, challenges, and pedagogical implications. Anchored in phenomenology and guided by the Technological Pedagogical Content Knowledge (TPACK) framework and social constructivism theory, the study examined how teachers interpret and utilize AI in teaching practices. A qualitative research design was employed using semi-structured one-on-one interviews with six English teachers from Don Carlos Polytechnic College selected through purposive sampling. Data were analyzed using Braun and Clarke's thematic analysis to identify patterns and themes. The findings revealed four major themes: relief with risk, teachers' authority, motion in pedagogy, and structures that shape and constrain possibility. Teachers experienced AI as a tool that enhances efficiency and reduces workload but requires careful validation due to concerns about inaccuracy and overreliance. They emphasized their irreplaceable role in ensuring ethical use, maintaining academic integrity, and guiding authentic learning. AI also emerged as a catalyst for pedagogical innovation, supporting creativity and productivity; however, its effectiveness is constrained by infrastructural limitations, unequal access, and lack of institutional support. The results further showed that AI integration involves a balance between opportunities and constraints, with teachers actively exercising professional judgment and adapting AI tools within their contexts. The study concludes that effective AI integration depends on teachers' critical awareness, ethical responsibility, and institutional support systems. It recommends further research on AI reliability, teacher training, policy development, and equitable access to technology. This study aligns with SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), and SDG 9 (Industry, Innovation and Infrastructure) by promoting improved teaching practices, professional development, and technological integration in education. The findings contribute to educational, technological, and institutional sustainability by informing policy development, strengthening teacher capacity, and supporting equitable and responsible use of AI in educational systems.

Keywords: Artificial intelligence; Educational sustainability; Phenomenology; Teachers' perceptions; Teaching practices; Technological Pedagogical Content Knowledge (TPACK); Thematic analysis

1. Introduction

Artificial Intelligence (AI) has rapidly transformed education, influencing teaching methods, assessment practices, and learning experiences. The integration of generative AI tools such as ChatGPT, Gemini, and Perplexity has enhanced efficiency and personalization in education but has also introduced challenges related to ethics, pedagogy, and teacher preparedness. This study examines teachers' perceptions, experiences, and insights regarding AI integration in education, particularly its impact on teaching roles, classroom dynamics, and future educational practices.

1.1 Background of AI Integration in Teaching Practices and Teachers' Work Context

Artificial Intelligence (AI) has evolved from a computer science concept into a fundamental component of modern education, enabling adaptive learning systems and data-driven instructional strategies. Educational institutions increasingly utilize generative AI platforms to improve teaching efficiency, assessment processes, and learning approaches. However, teachers encounter challenges such as insufficient training, limited technological infrastructure, and necessary pedagogical adjustments. In the Philippine context, teachers are adapting to rapid technological advancements by integrating AI into tasks such as lesson planning, data analysis, and information retrieval. Despite these developments, there remains limited understanding of how educators perceive and interact with AI tools (Karataş & Yüce). Understanding teachers' attitudes, emotions, and perspectives is essential for effective adoption of AI-driven instructional approaches. Moreover, AI has the potential to create accessible and personalized learning opportunities across diverse contexts (Wang & Lu, 2023; Zhi et al., 2023).

1.2 Teachers' Perceptions, Experiences, and Issues in AI-Supported Educational Practices

AI tools have significantly reshaped educational practices by providing instant and innovative solutions for both teachers and students. These tools support tasks such as completing assignments, outlining reports, and enhancing conceptual understanding. The increasing capability of AI to generate human-like content has improved efficiency and personalization while altering traditional teaching and learning processes (Manczka, 2024). However, concerns arise regarding misuse, including cheating, plagiarism, and overreliance on AI. While AI tools offer valuable support, they cannot replace human educators or fully adapt to individual learner needs (Liebrenz et al., 2023). Improper use without contextual understanding may also lead to misinformation (Gil-Vera & López, 2025). These insights highlight both the opportunities and risks associated with AI integration in education.

1.3 Local, National, and Global Context of AI Use in Educational Systems

Globally, AI adoption in education continues to expand, influencing teaching practices and institutional strategies. Nationally and locally, particularly in the Philippines, educators are integrating AI to manage increasing workloads and improve instructional efficiency. However, disparities in technological access, infrastructure, and training limit effective implementation. The growing accessibility of AI tools has also raised ethical concerns related to academic integrity, bias, accuracy, and privacy. These challenges emphasize the need to understand teachers' lived experiences and contextual realities in adopting AI within educational systems.

1.4 Theoretical and Conceptual Foundations of Teachers' AI Integration (TPACK and Social Constructivism)

This study is grounded in phenomenology, focusing on interpreting teachers' lived experiences with AI in education. It utilizes the Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes the integration of technology, pedagogy, and content knowledge in teaching practices (Burgsteiner et al., 2016; Lin & Van Brummelen, 2021). The TPACK framework highlights the importance of combining subject knowledge with effective teaching strategies and technological tools (Hill, 2019). Additionally, social constructivism theory supports the study by emphasizing knowledge construction through lived experiences and social interaction (Manczka, 2024). Teachers' perspectives are shaped by their experiences, motivations, and learning processes within AI-integrated environments. Together, these frameworks provide a comprehensive lens for analyzing teachers' perceptions, challenges, and practices in using AI.

1.5 Research Gaps on Teachers' Lived Experiences and Rationale for AI in Education Study

Although numerous studies have explored preservice teachers' perspectives and AI curriculum development, there is limited research focusing on in-service teachers' lived experiences with AI integration. There remains a gap in understanding how teachers perceive AI's impact on their roles, pedagogies, and relationships with students. This study addresses this gap by exploring teachers' understandings, attitudes, experiences, challenges, and perceived benefits of AI in educational settings. It also examines the implications of AI for future teaching practices and educational development.

1.6 Alignment with Relevant Sustainable Development Goals (SDGs) in AI-Integrated Education

This study aligns with several Sustainable Development Goals (SDGs), particularly: SDG 4 – Quality Education, as it examines how AI enhances teaching practices and learning outcomes. SDG 8 – Decent Work and Economic Growth, by supporting teachers' professional development and improving work efficiency. SDG 9 – Industry, Innovation and Infrastructure, through the integration of advanced technologies in education systems. By exploring AI's role in education, the study contributes to improving educational quality, promoting innovation, and supporting sustainable development in teaching and learning environments.

1.7 Importance of the Study to Multidisciplinary Sustainability in AI-Driven Education

This study contributes to educational sustainability by supporting effective teaching practices and continuous professional development in the digital age. It promotes technological sustainability by encouraging responsible and informed use of AI tools in education. Additionally, it supports socio-economic sustainability by enhancing teacher efficiency and preparing learners with critical thinking skills necessary for future work environments. The findings also inform policy and institutional sustainability, guiding stakeholders, policymakers, and educational leaders in developing strategies, training programs, and infrastructure that support ethical and effective AI integration. Furthermore, the study strengthens community sustainability by fostering collaboration among teachers, students, parents, and institutions in adapting to technological advancements in education.

2. Material and methods

2.1 Research Design

This study employed a phenomenological qualitative approach to explore and describe the lived experiences of DCPC teachers using AI in education. The design focused on understanding teachers' perceptions, experiences, and the impact of AI on teaching practices and roles, as well as gathering insights on future implications. Phenomenology emphasizes personal experiences, beliefs, and values, allowing the researcher to interpret meanings derived from participants' narratives through systematic data collection and categorization. A small number of participants was selected to obtain in-depth understanding, using semi-structured one-on-one interviews to capture personal experiences. The study utilized Braun and Clarke thematic analysis to identify patterns, interpret meanings, and generate insights while minimizing bias and assumptions.

2.2 Locale of the Study

The study was conducted at Don Carlos Polytechnic College, a private educational institution located in Purok 2, North Poblacion, Don Carlos, Bukidnon, Philippines, in Northern Mindanao. The institution is situated near the Iglesia ni Cristo church and Simbulan St. Niño General Hospital.

2.3 Respondents of the Study

The respondents were English teachers from Don Carlos Polytechnic College who integrate AI tools into lesson planning and assessment. These participants were selected based on their teaching experience and active use of AI in educational practices. The study focused on teachers with at least three years of teaching experience, including both online teaching and internship experience, to ensure relevant and informed perspectives.

2.4 Sample and Sampling Procedure

The study used purposive sampling to select participants who met specific criteria, including teaching English, having at least three years of experience, and actively using AI in teaching. A total of six participants were included to ensure in-depth exploration of experiences, consistent with phenomenological research, which typically involves small sample sizes for detailed analysis. The selected participants shared similar experiences within the same institutional setting, allowing for meaningful interpretation of AI integration in teaching. Participation was voluntary, and all institutional rules and protocols were followed.

2.5 Research Instrument

The study utilized a semi-structured interview protocol and a validated questionnaire to gather data on teachers' experiences with AI in education. The interview protocol ensured consistency in data collection, facilitated rapport-building, and guided the discussion through open-ended questions to obtain rich, in-depth information. It included study introduction, informed consent, privacy considerations, and member-checking provisions. The questionnaire and interview protocol were validated by qualitative research experts from Central Mindanao University to ensure relevance and validity. Triangulation was employed by integrating multiple data sources, including interviews, observations, and reflective journals, to strengthen the credibility of the findings. The reflective journal was used to document the researcher's thoughts and minimize bias during data collection and analysis. Participants were fully informed about the study, including consent, privacy, and benefits, and were given the opportunity to review and confirm interview transcripts to ensure accuracy.

2.6 Data Gathering Procedure

Data were collected through semi-structured one-on-one interviews with six English teachers who had at least three years of experience using AI in teaching. The process began with preparation, including the development and validation of research instruments aligned with the study objectives. Approval to conduct the study was obtained from the DCPC Research Director, ensuring adherence to institutional and ethical protocols. Participants were informed about the study through formal communication, including consent forms and questionnaires, and rapport was established to create a comfortable interview environment. Interviews followed a structured protocol with open-ended questions to capture teachers' experiences with AI in classroom settings. The interviews were conducted in a controlled and private environment to ensure confidentiality and minimize distractions. Data quality was maintained through careful monitoring of recordings and documentation throughout the process to ensure accuracy and completeness.

2.7 Data Analysis Techniques

The study used a phenomenological approach to analyze and interpret participants' experiences by identifying patterns and themes in the data. The analysis followed Braun and Clarke's (2006) thematic analysis process, which involved familiarization with the data through repeated reading of transcripts, generating initial codes to identify significant features, and organizing codes into potential themes. Themes were reviewed and refined to ensure coherence and accuracy, with some themes merged, split, or discarded as necessary. Each theme was then clearly defined and named, followed by the development of a comprehensive report that included thematic findings, supporting data, and interpretation in relation to

the research questions. This systematic process ensured a rigorous analysis of teachers' experiences with AI, maintaining validity and reliability through careful coding, theme development, and interpretation.

3. Results and Discussion

3.1 Teachers' Lived Experiences with AI in Education

3.1.1 Relief with Risk: Efficiency, Caution, and Overreliance

The findings reveal that teachers experience AI as a tool that significantly improves efficiency and reduces workload. Participants described AI as a time-saving resource that helps in lesson preparation, organizing materials, and accessing information quickly. However, they also emphasized that AI is not always accurate, requiring careful validation. Teachers expressed concerns about overreliance on AI, noting that excessive dependence may weaken professional judgment and critical thinking. These findings indicate that while AI enhances productivity, it simultaneously introduces risks that require cautious use. Teachers demonstrate critical digital awareness by verifying AI outputs before using them in instruction. This balance between convenience and caution reflects a responsible approach to AI integration, where teachers act as evaluators of information rather than passive users. The findings support the idea that effective AI use depends on professional judgment and critical engagement with technology.

3.1.2 Teachers' Authority: Professional Identity and Ethical Responsibility

The results show that teachers strongly affirm their irreplaceable role in education despite the increasing use of AI. Participants emphasized that AI serves only as a support tool and cannot replace the human aspects of teaching, such as empathy, guidance, and ethical decision-making. Teachers also highlighted their responsibility to ensure the accuracy of AI-generated content by filtering and adapting it according to their teaching context. In addition, teachers expressed concerns about students' overreliance on AI, particularly in cases where students copy AI-generated outputs without understanding the content. This behavior was observed to affect comprehension, creativity, and independent thinking. Teachers responded by implementing strategies such as monitoring student outputs and encouraging original work. These findings suggest that teachers maintain strong professional authority by safeguarding authentic learning and ensuring ethical use of AI. Their role extends beyond content delivery to include guiding students in responsible technology use. This reinforces the view that teachers remain central to the learning process, acting as both facilitators and ethical gatekeepers in AI-supported education.

3.1.3 Motion in Pedagogy: AI as a Catalyst for Teaching Innovation

The findings indicate that AI contributes to the development of more dynamic and flexible teaching practices. Teachers reported using AI to generate lesson plans, activities, and instructional materials, allowing them to access deeper and more diverse content. AI also enhances productivity, enabling teachers to accomplish multiple tasks efficiently and allocate more time to other responsibilities. These results suggest that AI serves as a catalyst for pedagogical innovation by expanding instructional possibilities and supporting creative teaching approaches. However, teachers do not rely solely on AI-generated content; instead, they adapt and refine it to align with their teaching styles and students' needs. This demonstrates that AI integration supports, rather than replaces, teacher-driven pedagogy, emphasizing the importance of human judgment in shaping meaningful learning experiences.

3.2 Structural Challenges Affecting AI Integration in Education

The findings reveal that several structural factors limit the effective integration of AI in teaching. Teachers reported challenges related to unstable internet connectivity, lack of Wi-Fi access in classrooms, and limited availability of devices such as laptops. These constraints hinder the consistent use of AI tools during instruction. Additionally, students' unequal access to technology, particularly among those from low socio-economic backgrounds, further restricts AI utilization. Participants also highlighted the lack of institutional support, including limited access to premium AI tools and insufficient resources. Furthermore, teachers emphasized the need for professional development, training, and clear guidelines for integrating AI into education. These findings suggest that successful AI integration is not solely dependent on teachers' willingness but is also shaped by infrastructural and institutional conditions. Limited resources and unequal access create barriers that may widen educational disparities. The absence of structured support systems places additional responsibility on teachers, indicating the need for systemic improvements in infrastructure, policy, and training to ensure equitable and effective use of AI in education.

3.3 Interrelationship of Opportunities, Constraints, and Teacher Agency in AI Integration

The results show that teachers' experiences with AI reflect a balance between opportunities and constraints. While AI provides efficiency, innovation, and support in teaching, it also introduces ethical concerns, dependency issues, and infrastructural challenges. Teachers actively navigate these complexities by exercising professional judgment, maintaining authority, and adapting AI tools to their specific contexts. This interplay highlights that AI integration in education is not purely technological but deeply human and contextual. Teachers emerge as key agents in shaping how AI is used in

classrooms, ensuring that it enhances rather than undermines learning. The findings demonstrate that effective AI integration depends on a combination of teacher expertise, ethical awareness, and institutional support, emphasizing the importance of a balanced and context-sensitive approach to educational technology.

4. Conclusion & Recommendations

This study examined teachers' lived experiences using AI in education, highlighting how they navigate the rapid growth of AI despite limited training, ethical concerns, unclear policies, and structural constraints. The findings revealed four major themes: relief with risk, defending teachers' authority, motion in pedagogy, and structures that shape and constrain possibility. Teachers viewed AI as a valuable tool that improves efficiency and reduces workload but requires careful validation due to inaccuracies and risks of overreliance. They emphasized their irreplaceable role in ensuring ethical use, maintaining academic integrity, and guiding authentic learning. AI was also identified as a catalyst for pedagogical development, enhancing creativity and productivity, though its effectiveness is limited by infrastructural challenges and unequal access. Overall, the study shows that successful AI integration depends not only on its benefits but also on teachers' professional judgment, ethical awareness, and the level of institutional support.

The study recommends further research and actions aligned with the identified themes to support teachers and educational systems. There is a need for studies comparing AI tools in terms of accuracy and reliability, as well as research on the long-term effects of AI use on teachers' decision-making, confidence, and well-being. Training programs should be developed to strengthen teachers' skills in evaluating AI outputs and promoting responsible use. Policies and guidelines must be established to protect academic integrity, reinforce teachers' authority, and address students' overreliance on AI. Curriculum development should integrate AI in ways that enhance learning, creativity, and critical thinking rather than replacing authentic engagement. Additionally, there is a need for evidence-based strategies to address infrastructural challenges, including access to devices, internet connectivity, and institutional support, ensuring equitable and effective AI integration in education.

This study is limited by its small sample size and focus on six English teachers from a single institution, which restricts the generalizability of the findings. The qualitative and phenomenological approach emphasizes in-depth understanding of participants' experiences but does not capture broader population perspectives. Additionally, constraints such as limited time, resources, and reliance on self-reported data may affect the scope of the findings. These limitations suggest the need for further research involving diverse contexts and larger samples to expand understanding of AI integration in education.

Compliance with ethical standards

This study adhered to institutional and ethical protocols throughout the research process. Approval to conduct the study was obtained from the DCPC Research Director. Participants were fully informed about the purpose, procedures, and nature of the study, and their voluntary participation was ensured through informed consent. Privacy and confidentiality were maintained, and participants were given the opportunity to review and confirm the accuracy of their interview responses.

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