Lived Experiences of Teachers in the Artificial Intelligence Integration in Teaching and Learning

[1]John Philip E. Reyes, [2]Marc Lester F. Quintana

[1]Prefect of Discipline, [2]Assistant Professor III
[1]De La Salle University Integrated School, Laguna, Philippines
[1]johnphilipreyes@gmail.com, [2]mfquintana@ccc.edu.ph

Abstract—This study explores teachers' experiences and perceptions of integrating AI into education, focusing on their comfort levels, familiarity, and broader impacts on teaching and learning. The research uses transcendental phenomenology to examine seven teachers selected based on experience in grades 4–10 and with AI tools. Through semi-structured interviews, the study identifies four themes: Professional Growth with AI, Transformative Teaching Practices, AI's Role in Student Development, and Ethical-Societal Considerations. These findings highlight opportunities and challenges for teachers adapting to AI, showing how it can support personalized learning, foster student responsibility with technology, and necessitate ongoing professional development. The study underscores the need for educators and policymakers to address ethical concerns and ensure equitable AI access. Overall, this research provides insights into effectively incorporating AI in education and promoting balanced and ethical AI practices to support educational outcomes. Future research might explore strategies to help educators adapt to AI and frameworks for fair and ethical AI use in diverse schools.

Index Terms—*teachers' experiences, AI integration, education, teaching innovation, ethical AI*

I. INTRODUCTION (HEADING 1)

Artificial Intelligence (AI) is reshaping various sectors, including education, where its potential impacts on teaching and learning processes are drawing attention. Specifically, AI offers opportunities to personalize learning, streamline administrative tasks, and enhance teacher support. However, the extent to which these benefits can be realized depends on the perceptions, knowledge, and experiences of teachers, who play a central role in implementing AI in classrooms. Studies highlight that teachers often lack familiarity with AI tools, which may limit effective integration into their teaching practices (Kim & Kim, 2022). For instance, while some efforts in the Philippines have focused on AI in education by establishing data centers and enhancing decision-making frameworks, significant challenges such as digital accessibility, data security, and ongoing faculty development remain (Estrellado, 2023).

Globally, educational advancements have prompted both opportunities and challenges, from expanding digital access to confronting new issues like digital poverty and data privacy concerns (UNESCO, 2023). Although technological advancements such as social media and digital platforms have enriched learning experiences (Pentang, 2021), they have also introduced complexities that must be managed to ensure equitable and safe access to these tools. Generative AI further challenges the traditional boundaries of education, influencing how and why students engage with content. Despite these shifts, a research gap persists regarding teachers' lived experiences, particularly within Filipino college communities, in adapting to and utilizing AI within classroom settings (Estrellado & Miranda, 2023).

This study addresses this gap by exploring Filipino teachers' experiences with AI integration in teaching and learning, examining their perceptions of AI's role, and understanding their comfort level and familiarity with AI technologies. By providing insights into teachers' attitudes toward AI, this study contributes to a more comprehensive understanding of the factors influencing successful AI adoption in education. Ultimately, the findings may help inform policies and practices that support AI integration and improve educational experiences in Philippine classrooms.

II. LITERATURE REVIEW

The increasing integration of AI technologies, such as ChatGPT, Google Bard, and Canvas AI tools, reshapes various facets of daily life and professional workflows, prompting a push to integrate AI education within school curricula. This movement is driven by the need to prepare students for technology-driven careers and equip them with essential digital skills (George, 2023). Moreover, AI's capability to automate decision-making based on data patterns marks a significant shift in educational technology, where computers store data and assist in instructional choices and educational management (Office of Educational Technology, 2023).

A lack of consensus on defining AI creates challenges within the field, as noted by Collins et al. (2021), who identified up to 28 definitions across studies. This inconsistency risks fragmenting knowledge in Information Systems (IS) and underscores the need for a shared understanding to advance cumulative research. AI definitions typically emphasize its functionalities—perception, reasoning, learning, and interaction—rather than a strict, uniform definition, which can complicate interdisciplinary collaboration and knowledge building within the field.

AI's application in education offers varied benefits across planning, instruction, assessment, and personalized support. Çelik et al. (2022) found that AI aids teachers by providing background information on students' needs, such as risk factors, and supports decision-making in lesson planning. Furthermore, Grassini (2023) highlighted AI's utility in grading and assessment, noting that AI can improve grading accuracy and offer valuable feedback on student work. However, ethical considerations in grading transparency remain critical. Similarly, Vidal (2023) explored AI's role in creating instructional content and engaging students in augmented and virtual reality, suggesting the potential for immersive learning experiences. However, additional research on instructional impact is needed.

Although AI presents transformative opportunities, its implementation in education faces challenges. Melo (2023) identified obstacles like technical expertise gaps, limited resources, and ethical concerns, all of which complicate AI integration into classrooms. Additionally, AI systems risk bias in automated decisions, highlighting the need for robust educational governance policies to manage fairness and ethical use (Office of Educational Technology, 2023).

Teacher readiness and attitudes are critical in successful AI adoption in education. Woodruff (2023) emphasized the importance of training teachers in AI through professional development and incorporating AI education into teacher preparation programs. Teachers' lived experiences with AI, as explored by Kim & Kim (2022), reveal that familiarity with AI tools through daily interactions (e.g., smartphone AI assistants) enhances their openness to using AI in educational settings. Additionally, Ayanwale et al. (2022) found that perceived usefulness and confidence positively influence teachers' intentions to use AI, while AI anxiety plays a lesser role.

Crompton and Burke (2023) identified significant geographical and disciplinary gaps in AI education research. Most studies concentrate on high-income countries, leaving a need for research on AI's potential in under-resourced regions. Furthermore, AI studies focus on specific fields like language learning and engineering, with less attention to interdisciplinary applications, especially at the graduate level. Bridging these gaps through expanded and inclusive research can provide a holistic understanding of AI's educational impact across diverse learning environments.

Several studies recommend proactive policy development and strategic guidance for AI integration in educational settings. Melchor (2023) called for further studies in regions like the Philippines to better understand AI's role in Generation Alpha's education and to define the characteristics of an effective instructor from these students' perspectives. Lau and Greer (2022) emphasized carefully selecting adoption theories, like the Technology Acceptance Model (TAM), to ensure that e-learning tools meet pedagogical and curriculum alignment standards rather than focusing solely on adoption rates.

The literature underscores AI's potential to revolutionize education by enhancing personalized learning, supporting teachers, and bridging gaps in learning outcomes. However, technical resource limitations, teacher training needs, definitional clarity, and policy governance must be addressed to harness AI's full educational potential. Ongoing research, including diverse geographic regions and interdisciplinary applications, will be essential to navigate these challenges and fully integrate AI into education

III. METHODOLOGY

3.1. Research Design

This study employs transcendental phenomenology (TPh) as its methodological approach, grounded in the philosophy of understanding human experiences through systematically removing preconceptions (bracketing) to view phenomena objectively. This method, as defined by Moustakas (1994), allows the researcher to perceive the essence of experiences as they naturally emerge, without bias, ensuring an in-depth and authentic analysis of the integration of AI in teaching and learning.

3.2. Research Participants

The study focuses on teachers' lived experiences from Scuola dei Bambini di Sta. Teresita IMI, specifically those actively integrating AI into classroom activities. Using purposive sampling, seven teachers were selected based on criteria such as teaching grades 4-10 and possessing direct experience with AI tools in teaching. This sample was chosen to capture insights from a demographic crucial to AI integration in education, excluding lower elementary and preschool teachers relying on Montessori materials under the Montessori Curriculum.

3.3. Research Participants

Semi-structured interview questions were developed to collect data on the teachers' experiences with AI. These questions are based on the study's conceptual framework and prior literature (e.g., Kohnke et al., 2023; Dai et al., 2022) and aim to elicit detailed, firsthand accounts of AI use in teaching. The instrument underwent content validation by a panel including the study adviser, a language specialist, an external evaluator, and a psychologist, ensuring a comprehensive examination of the questions' relevance and clarity. The instrument achieved a content validity index (CVI) of 1, with all 14 indicators surpassing a critical value threshold of 0.99, confirming robust validity.

3.4. Data Collection Procedure

Upon approval from Scuola dei Bambini, teachers meeting the study criteria were invited to participate. Data was collected through in-person, semi-structured interviews in a comfortable, private setting to encourage open discussion. Each interview lasted approximately 30 minutes, using probing techniques and follow-up questions to explore the participants' perspectives comprehensively. With informed consent, interviews were audio-recorded to ensure accurate transcription and data integrity. The verbatim transcriptions were anonymized by assigning pseudonyms, ensuring participants' confidentiality. All identifiable information was removed, and transcripts were securely stored for further analysis.

3.5. Data Collection Procedure

Data analysis employed Moustakas' phenomenological approach to identify core themes and shared experiences within the data. This process involved several steps:

a) **Bracketing**: The researcher set aside personal biases and preconceptions to objectively analyze participant experiences.
b) **Descriptive Coding**: Significant statements from the transcripts were identified and coded using MAXQDA. Statements were then organized into preliminary themes, capturing core aspects of the AI integration experience.
c) **Axial Coding**: Cross-checking and refinement of themes were conducted to ensure consistency and depth.
d) **Textural and Structural Descriptions**: The researcher developed descriptions based on participants' shared experiences, emphasizing what was experienced and how it was experienced within specific contexts.
e) **Essence of Experience**: A final synthesis captured the overall meaning and essence of the phenomenon, integrating findings from across participants to present an in-depth, comprehensive portrayal.

3.6. Ethical Considerations

Ethical protocols adhered to throughout the study included:

- **Informed Consent**: Participants were briefed about the study's purpose, procedures, risks, and benefits and assured of their voluntary participation with the right to withdraw without penalty.
- **Confidentiality**: In compliance with RA 10173 (Data Privacy Act), pseudonyms were used to protect participant identities, and data was stored securely with access limited to the research team.

- **Data Protection**: Measures were implemented in alignment with GDPR and local privacy laws, ensuring data was handled solely for research purposes.
- **Risk Mitigation**: Potential emotional or psychological impacts on participants were minimized, and support resources were available.
- **Respect and Fairness**: Participants were treated respectfully throughout the research, ensuring no discrimination or bias based on demographics

IV. FINDINGS AND DISCUSSION

The following themes emerged regarding teachers' experiences with AI in teaching and learning.

4.1. Major Theme 1 - Professional Evolution in the AI Era

The theme "Professional Evolution in the AI Era" explores the evolving responsibilities and competencies educators need, recognizing the revolutionary influence of artificial intelligence on pedagogy and professional practices. It looks at how educators adapt to the changing environment and use AI tools and technology to increase their efficacy and stay on the cutting edge of learning. A total of 52 coded responses were considered, offering a variety of experiences and different perspectives. It encapsulates the experiences and perspectives of teachers navigating the integration of Artificial Intelligence (AI) in education. This theme explores how educators adapt, develop, and evolve professionally in response to the changing landscape of technology. The discussion unfolds across several sub-themes, shedding light on various facets of professional growth in the context of AI integration. The statement reflects the teacher's perspective on the challenges associated with integrating Artificial Intelligence (AI) in education:

"Ano, challenge doon is yung AI itself kasi hindi... I mean, siyempre, as generation ko, as Gen Z, siyempre, naturally into technology, pero very limited pa din before. Especially yung sa teaching, yung mga platforms na ganon. Ang alam lang natin namin namin noon is parang basic like, of course, yung Microsoft, Google, ganoon. So hindi pa ganoon ka-familiar dun sa ibang AI na pwede pa palang gamitin into teaching..."

It underscores the teacher's acknowledgment of the necessity to explore and become more familiar with a diverse range of AI tools relevant to teaching. This aligns with the broader theme of "Professional Evolution in the AI Era," emphasizing the continuous learning and adaptation required by educators to integrate AI effectively into their teaching practices. Collaborative efforts involving all stakeholders are vital in establishing clear standards and best practices for AI integration in education, centering the perspectives and expertise of professional educators (Woodruff, 2023).

4.2. Major Theme 2 - Pedagogical Revolution Through AI

The theme "Pedagogical Revolution Through AI" explores how AI technology revolutionizes pedagogical methods, individualized learning experiences, and educational accessibility. Teachers are analyzed as the revolution's agents, using AI technologies to design dynamic, flexible, and interesting learning environments. A total of 35 coded responses were considered, offering a variety of experiences and different perspectives.

The statement below highlights the need to balance offering assistance and encouraging dynamic, self-directed learning experiences. It also illustrates how teachers supervise and coach students in AI-driven learning settings.

"Siguro don... doon sa Quipper, when I assign them tasks, I don't think that they like Quipper. Sometimes even doon parang tama na yung sagot nila, mali doon yung nilalabas ng Quipper. And when I check it, parang ano naman, parang tama naman si Quipper, ang problem lang is, halimbawa, yung inaask ng question in singular form, iba sa nabibigay nila yung plural. Halimbawa, yung sagot nila ay ahhh "persuasive essays:, may S, tapos mali doon sa Quipper. Parang nagkakaroon ng negative connotation doon sa bata na yung di siya reliable, yung technology. Pero I explain it to them na if this is the grammatical construction, dapat yun ang susundin,"

It shows the need for effective communication between teachers and students, especially when technological tools like Quipper may generate feedback that appears contradictory. It also brings attention to the challenge of aligning technology with the nuances of language and grammatical rules, emphasizing the ongoing learning process for teachers to navigate and interpret AI-driven platforms effectively. AI-driven projects transform how students interact with technology in schools, changing educators' roles from traditional teachers to facilitators of interactive learning experiences (The Horizon Study, 2020).

4.3. Major Theme 3 - Nurturing Holistic Student Development with AI

This theme focuses on the impact of Artificial Intelligence (AI) in fostering holistic student development. Discussions revolve around the efficiency and engagement synergy achieved by integrating AI tools into teaching practices. The sub-themes under this overarching theme delve into three sub-themes: Efficiency and Engagement Synergy, Ensuring Rigor in Assessment, and Fostering Responsible AI Citizenship. A total of 34 coded responses were considered, offering a variety of experiences and different perspectives. The statement below represents a bright and optimistic teaching philosophy:

"Sakin po kasi, I think I am being optimistic about technology. For me, it is much easier and much more convenient, and at the same time, it is mas na-engage po yung mga student."

Enhancing student participation is the primary advantage that is emphasized, along with simplicity of use for the instructor and convenience. This favorable sentiment might benefit the discussion on technology's useful and successful integration into contemporary educational practices. This contributes to the broader exploration of AI's role in shaping a holistic educational environment that caters to students' diverse needs and preferences. AI introduces students to this rapidly evolving technology, fostering a critical understanding of its implications and applications. Lastly, it equips students with essential 21st-century skills like problem-solving and critical thinking, which are crucial for success in today's digital world (Melo, N., 2023).

4.4. Major Theme 4 - Ethical Dimensions and Societal Impacts of AI

The theme "Ethical Dimensions and Societal Impacts of AI" delves into questions of fairness, accountability, and transparency in AI systems, emphasizing the responsibility of educators and policymakers to ensure ethical AI use. This theme considers the potential societal shifts brought about by widespread AI adoption, addressing equity, privacy, and the ethical use of data in the educational context. A total of 18 coded responses were considered, offering a variety of experiences and different perspectives.

The statement below emphasizes how crucial it is to balance cutting-edge technological platforms and conventional teaching approaches. From an ethical perspective, this balance must be maintained to prevent students from being only exposed to one method

of instruction. It shows an understanding that not every student will react to technology similarly, and that educators have an ethical duty to provide a welcoming and varied learning environment.

"So, and even though we're implementing naman yung mga ganon na platforms, mga technological platforms, we don't forget also na yung mga usual na ginagawa kasi may mga students pa rin na mas focus lang yung sa traditional way, meron din naman na sa ibang way. Pero very open naman yung mga students sa ganun... and very, very interested whenever you're going to introduce something that is new. So okay lang. Mas naging..mas naging mas ma-explore ka as a teacher. And siyempre teacher ka. Dapat continuously naman talaga yung learning mo. Parang it doesn't stop there. Every day, I mean not really every day, pero every now and then may bago. So, as a facilitator of learning, syempre from being a very traditional teacher na more on PowerPoint or presentation or yung usual na board and yeah, yung magsulat ka sa board. Marami ka na… na implement and na-execute na ibat-ibang platform sa mga students mo. So, in that way, I feel like mas na-maximize yung learning ng mga students."

It promotes a fair, transparent, and dynamic method of instruction that draws attention to the moral implications of educational innovation and the effects of AI on society. In the context of a changing technological environment, it demonstrates a dedication to moral teaching methods that consider students' various requirements and seek to optimize their learning experiences. Ethical concerns, especially regarding privacy and security, must also be addressed when implementing AI. Despite these challenges, following best practices can help educators effectively integrate AI into the classroom. Collaborating with reputable AI providers, starting with small-scale implementations, and fostering ethical and critical thinking about AI are essential steps in this process (Melo, N., 2023).

V. CONCLUSION

This study highlights the multifaceted impact of integrating AI into teaching and learning, uncovering four key themes: Professional Evolution in the AI Era, Pedagogical Revolution Through AI, Nurturing Holistic Student Development with AI, and Ethical Dimensions and Societal Impacts of AI. These themes reveal the complex interactions between educators, students, and AI technologies, showcasing opportunities and challenges in adapting to AI within the educational landscape. The findings emphasize the evolving role of educators, who must continuously learn, adapt, and collaborate to integrate AI tools into teaching practices effectively. AI facilitates pedagogical innovations, offering personalized learning experiences that cater to diverse needs and foster responsible AI citizenship among students. Furthermore, exploring AI integration's ethical and societal impacts highlights the need to balance tradition with innovation and address technology access disparities. This underscores the importance for educators and policymakers to navigate ethical issues, ensure transparency, and promote equitable AI use in education. Ultimately, these findings provide a comprehensive understanding of the challenges and opportunities of AI in education, advocating for responsible and ethical AI integration to enrich educational practices and enhance student outcomes. Future research could focus on strategies for fostering adaptability in educators and developing frameworks for equitable AI access and ethical implementation across diverse educational settings.

REFERENCES

[1] Çelik, İ., Dindar, M., Muukkonen, H., & Järvelä, S. (2022). The Promises and Challenges of Artificial Intelligence for Teachers: a Systematic Review of Research. TechTrends, 66(4), 616–630. https://doi.org/10.1007/s11528-022-00715-y

[2] Collins, C., Dennehy, D., Conboy, K., & Mikalef, P. (2021). Artificial intelligence in information systems research: A systematic literature review and research agenda. International Journal of Information Management, 60, 102383. https://doi.org/10.1016/j.ijinfomgt.2021.102383

[3] Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. International Journal of Educational Technology in Higher Education, 20(1). https://doi.org/10.1186/s41239-023-00392-8

[4] Dai, Y., Liu, A., Jian-Jun, Q., Guo, Y., Jong, M. S., Chai, C. S., & Lin, Z. (2022). Collaborative construction of artificial intelligence curriculum in primary schools. Journal of Engineering Education, 112(1), 23–42. https://doi.org/10.1002/jee.20503

[5] Estrellado, C. J. P. (2023). Artificial intelligence in the Philippine educational context: Circumspection and future inquiries. International Journal of Scientific and Research Publications, 13(5), 16-22. https://doi.org/10.29322/IJSRP.13.04.2023.p13704

[6] George, A. (2023). The importance of artificial intelligence in education for all students. Retrieved from https://www.languagemagazine.com/2023/05/31/the-importance-of-artificial-intelligence-in-education-for-all-students/

[7] Grassini, S. (2023). Shaping the Future of Education: Exploring the potential and consequences of AI and ChatGPT in educational settings. Education Sciences, 13(7), 692. https://doi.org/10.3390/educsci13070692

[8] Kim, N., & Kim, M. K. (2022). Teacher's perceptions of using an Artificial intelligence-based educational tool for scientific writing. Frontiers in Education, 7. https://doi.org/10.3389/feduc.2022.755914

[9] Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). Exploring generative artificial intelligence preparedness among university language instructors: A case study. Computers & Education: Artificial Intelligence, 5, 100156. https://doi.org/10.1016/j.caeai.2023.100156

[10] Lau, K. H. V., & Greer, D. M. (2022). Using technology adoption theories to maximize the uptake of e-learning in medical education. Medical Science Educator, 32(2), 545–552. https://doi.org/10.1007/s40670-022-01528-7

[11] Melo, N. (2023). Incorporating Artificial Intelligence Into The Classroom: An Examination Of Benefits, Challenges, And Best Practices. eLearning Industry.https://elearningindustry.com/incorporating-artificial-intelligence-into-classroom-examination-benefits-challenges-and-best-practices

[12] Ng, D. T. K., Leung, J. K. L., Su, J., Ng, R. C. W., & Chu, S. K. W. (2023). Teachers' AI digital competencies and twenty-first-century skills in the post-pandemic world. Educational Technology Research and Development, 71(1), 137–161. https://doi.org/10.1007/s11423-023-10203-6

[13] Pentang, J. T. (2021). Technological dimensions of globalization across organizations: Inferences for instruction and research. International Educational Scientific Research Journal, 7(7), 28-32. https://dx.doi.org/10.2139/ssrn.3896459

[14] Woodruff, K. (2023). Perceptions and barriers to adopting artificial intelligence in K-12 education: A survey of educators in fifty states. IntechOpen. https://doi.org/10.5772/intechopen.1002741