

Research Article

FILIPINO TEACHERS' EXPERIENCES WITH ARTIFICIAL INTELLIGENCE IN BASIC EDUCATION: A PHENOMENOLOGICAL STUDY

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Abstract

This study determined whether Artificial Intelligence (AI) could replace teachers while addressing gaps in AI in Education research, which is mostly survey-based and focused on Western and Chinese contexts, by exploring teachers' lived experiences with AI in the Philippine setting. It also examines current AI use among basic education teachers, an area often overlooked compared to higher education. The objectives are to explore teachers' experiences in utilizing AI tools and to identify factors influencing AI adoption among participants. Qualitative research design, specifically through Husserlian phenomenology, was employed. Data were collected through semi-structured interviews with 16 teachers selected purposively and were analyzed thematically using Gioia's methodology. Findings indicate that Artificial Intelligence cannot displace basic education teachers. Under the spectrum of the teaching-learning process (preparation-discussion-assessment), these tools play a great role in the preparation and assessment areas, leaving the discussion area to the human skills of teachers. The study further strengthens that AI utilization spans enhancing innovation, productivity, and evaluation. Moreover, enhanced utilization is based on the interplay of human factors and technical factors. Human factors focus on targeted professional development, ethics, and responsibility, while technical factors focus on the AI tool's user-friendliness and trustworthiness. Teachers who leverage AI tools will not be replaced if they have a clear grasp of their roles and responsibilities as supported by the Human-AI augmentation theory and Technology Acceptance Model. Finally, the study highlights the significance of teacher oversight in utilizing AI tools, suggesting the institutionalization of the Human-AI-Human (HAIH) principle in basic education. Educational institutions may establish a balanced AI adoption framework that explicitly pairs human oversight with tool design.

Keywords: Human Oversight, Human Factors, Technical Factors

Introduction

Recent studies on Artificial Intelligence (AI) highlight the benefits and challenges it offers for education. Some studies found that AI can support Sustainable Development Goal 4, which is Quality Education of the United Nations, by enhancing collaborative learning and remote participation (Prakash, 2024; Allam et al., 2023). AI-powered adaptive learning platforms can significantly improve learner performance by providing customized content and feedback (Zawacki-Richter et al., 2019). Such technologies could redefine education by enabling continuous assessments, lifelong-learning companions, AI teaching assistants, and collaborative learning support (Holmes et al., 2019). On the other hand, despite the many potential benefits these tools may bring, some researchers underscore the challenges of applying them in education. Concerns such as declines in interpersonal communication, bias, efficacy, and a lack of robust evidence at scale are the reasons that the system is not widely adopted yet (Allam et al., 2023; Goraliski & Tan, 2023; Ibrahim, 2023; Holmes et al., 2019).

Further, AI is slowly changing jobs and industries by automating tasks, streamlining processes, and improving human capabilities, with studies suggesting that automation has affected over 30% of professionals and workers (Mundra & Kataria, 2024). This leads stakeholders in the education sector to the rising question, “Can AI replace educators?” In the Philippines, teachers also highlight this worry, noting that one of the concerns about AI utilization is job displacement (Cubio, 2025). Therefore, this study helps shed light on the question from the perspective of basic education teachers by examining their use of AI tools in their classrooms.

Additionally, it is interesting to note that most AI in Education research focuses on quantitative studies (Zawacki-Richter et al., 2019). Much of this is survey-based research, emphasizing AI tool integration perceptions (Tan, 2025), but it lacks studies on teachers' real-world experiences and lived experiences of AI integration. A key gap is the lack of phenomenological understanding of teachers' lived experiences with AI in classrooms in basic education. Further, most AIED research is conducted in China, the US, and Europe (Jia et al., 2022). Research in Southeast Asia is very limited, especially in the Philippines, Indonesia, Thailand, and Vietnam. Therefore, this article also attempts to fill the gap in AI integration in Southeast Asian basic education systems through phenomenological methodology and adds an answer to the significant gap in the lack of theory-driven interpretation as a barrier to scalable, equitable implementation of such systems, especially in low-resource contexts (Holmes, Bialik, & Fadel, 2019).

Furthermore, as technology continues to evolve, teachers are exploring various AI tools to improve their instructional methods, facilitate learner engagement, and enhance learning outcomes in higher education institutions (Morales-Garcia et al., 2024; Estrellado, 2023). Thus, this study also seeks to examine the current situation of AI utilization among teachers in basic education, since studies conducted are more in higher education institutions.

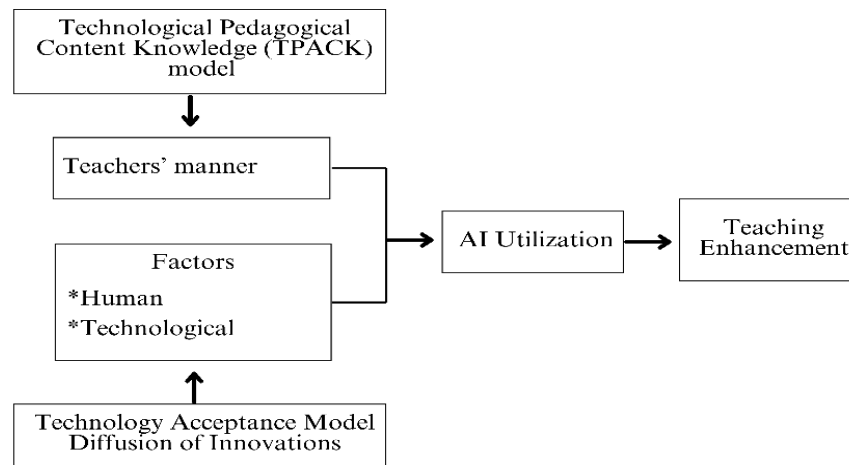


Figure 1 Conceptual framework

The figure illustrates how teaching enhancement through AI is not automatic, but mediated by intentional human action and contextual enablers such as the technology itself. In this study, teachers' manner refers to educators' pedagogical intent, strategic action, and reflective practice in adopting AI, not just technical usage, but how they integrate it, emphasizing that the teacher is a designer, not just an end-user, underpinned by the Technological Pedagogical Content Knowledge (TPACK) model by Koehler and Mishra (2013). This model supports the exploration of the manner in which teachers utilize AI tools in instructional practices, content generation, data-driven decision-making, and research initiatives. Understanding how AI can enhance teaching methods allows teachers to tailor their use of technology to improve learner engagement and learning outcomes. The TPACK model discusses that effective AI integration requires alignment of technology knowledge, pedagogy, and content knowledge.

Moreover, factors are a dual-axis construct: Human factors include teacher AI literacy, confidence, collaboration culture, and institutional support, while technological factors encompass tool affordances (explainability, accessibility, operability), infrastructure (bandwidth, devices), data privacy compliance, and technical support capacity. The factors that influence the use of these tools, which are supported by the Diffusion of Innovations of Rogers (2003) and the Technology Acceptance Model by Davis (1987), need to be explored. Exploring these factors offers an important view in looking at the implications of AI implementation, developing a deeper understanding of its effect on educational practices. Diffusion of Innovations explains that AI adoption is shaped by perceived innovation attributes like relative advantage, compatibility, trialability, and observability. Further, the Technology Acceptance Model presents that teachers' acceptance and use of AI are driven by perceived usefulness, perceived ease of use, and, in extended models, social influence and facilitating conditions. The exploration of factors influencing AI adoption may lead to the development of responsible usage of AI tools. Recognizing the influence of the different factors may shape the development of policy that encourages a supportive environment for the adoption of AI.

The mediating process, as shown in the framework, is AI Utilization, which is not mere tool deployment, but a purposeful, context-sensitive application shaped by the interplay of teachers' manner and

enabling/constraining factors. This step captures implementation reliability: Are tools used to reinforce teaching practices or to reimagine assessment, feedback, or learner agency? This leads to the outcome, which is teaching enhancement. This is a measurable improvement in pedagogical quality, such as increased responsiveness to learner needs, deeper formative assessment, more equitable participation, and time used for high-value teacher-learner interaction. Critically, this is not synonymous with “more AI use”, but with pedagogically meaningful impact. The framework is underpinned by the three models (TPACK, Diffusion of Innovation, and Technology Acceptance) but goes further by centering teacher action “manner” as an active, interpretive force.

Research Problems

1. What is the participants’ manner of utilizing AI tools in basic education?
2. What factors influence the participants’ use of AI tools in basic education?

Research Objectives

1. To explore teachers’ experiences in utilizing AI tools in basic education.
2. To identify factors influencing AI adoption among teachers.

Research Methodology

Research Design

The study used a qualitative research design through a phenomenological, specifically the Husserlian method. This allowed the researcher to gain deep insights into how teachers experience, use, and interpret AI technologies in basic education, capturing the meaning of their experiences. Considering the focus of this study, the researcher brackets his personal experiences and theories in the data collection and interpretation to capture an accurate description of the participants’ experiences.

Population and Locale of the Study

The study was conducted in the Schools Division of Baguio City, focusing on Key Stage 2 (Grades 4-6) and Key Stage 3 (Grades 7-10). The study's locale is significant, as it represents a progressive educational environment where modern teaching methodologies and technologies are being implemented. The criteria for participant selection are the following: utilized AI tools in teaching and learning for at least two years, using AI tools in the classroom, attended at least one professional development, such as seminars or training on AI tools, and shared at least one AI tool with his/her colleagues through learning action cells or collaborative expertise sessions. The sample size of 16, as suggested by Creswell and Cresswell (2018) for phenomenological studies, was followed.

Data Collection Instrument

A semi-structured interview guide was used to gather detailed information reflecting participants’ experiences with the manner of utilization and the factors that influence their use of AI tools. The semi-structured interview guide underwent field testing in the chosen school of the Schools Division of Benguet. Two teachers from a school in La Trinidad were asked to read and answer to check the significance of these

questions and the logical arrangement. Their feedback and suggestions were carefully examined and considered to improve the interview guide.

Data Collection Procedure

After being given the certification from the Ethics Committee of Benguet State University, the researcher asked the Schools Division Superintendent of Baguio for permission to conduct the study in the selected districts as determined by the sampling technique of the study. The researcher conducted in-depth one-on-one interviews, which lasted for 30-40 minutes each. An informed consent form for the teacher participants was administered as well before the interview proper, ensuring that participants accurately understand the information and fully grasp their tasks in the research. Confidentiality and anonymity were maintained by coding responses, and the participants were provided with the right to withdraw at any stage without effect, given that the nature of the study is entirely voluntary.

Trustworthiness as a significant part of research was ensured through the following criteria: credibility, dependability, confirmability, and transferability. Credibility was strengthened via in-depth interviews and iterative member checking. Transferability was supported by a thick, contextual description of the research context. Dependability was ensured through an audit trail documenting data collection protocol, consent procedures, field note practices, and coding decisions that shaped the final interpretation. Confirmability was upheld by grounding all analytical claims directly in verbatim participant data, using reflexive journaling to bracket researcher assumptions, and conducting validation of emergent themes and aggregate dimensions against raw transcripts (De Guia & Solomon, 2024).

Treatment of Data

The data were subjected to thematic analysis to identify patterns, themes, and insights using the Gioia methodology, organizing them into a structured data hierarchy: 1st-order concepts, 2nd-order themes, and aggregate dimensions (Gioia et al., 2013). After having the full set of 1st-order terms and 2nd-order themes and aggregate dimensions, the researcher has the basis for building a data structure (see Figures 2 and 4). This data structure serves a dual purpose: it organizes the data into an interpretable visual format and transparently maps the systematic development, from raw data to initial codes, then to thematic categories, thereby substantiating methodological rigor in qualitative inquiry. From the data structure, the two models were then developed (see Figures 3 and 5).

Aggregate dimensions discovered from these data were validated through member checking. The researcher went back to the participants and presented the developed themes from the analysis and interpretation of the researcher to the development of the two models. All participants agreed with the interpretation of their responses and insights given by signing the certificate of agreement form. This form presented the Gioia data structure diagram together with the models developed.

Ethical Considerations

The study underwent a thorough ethics review by the Benguet State University's Research Ethics Committee to guarantee participants' safety throughout the research. This process affirms adherence to the institution's ethical standards, prioritizing the well-being of all concerned. During data gathering,

the researcher discussed with the participants their voluntary involvement, including their right to refuse or withdraw at any time, to facilitate informed decision-making regarding their participation in the study. These careful measures were taken to ensure ethical considerations throughout the research process. This reflects a commitment to uphold the highest standards of integrity and respect for participants.

Limitation of the Study

The author acknowledges that the limited sample size may not generalize the findings to all contexts of the Philippines. It may only be true in the same context with the participants as mentioned explicitly in the population and locale of the study.

Results and Discussion

Figure 2 illustrates the Gioia data structure showing how teachers in basic education utilize AI tools. It organizes empirical findings and insights into categories grounded in teacher practices and perceptions.

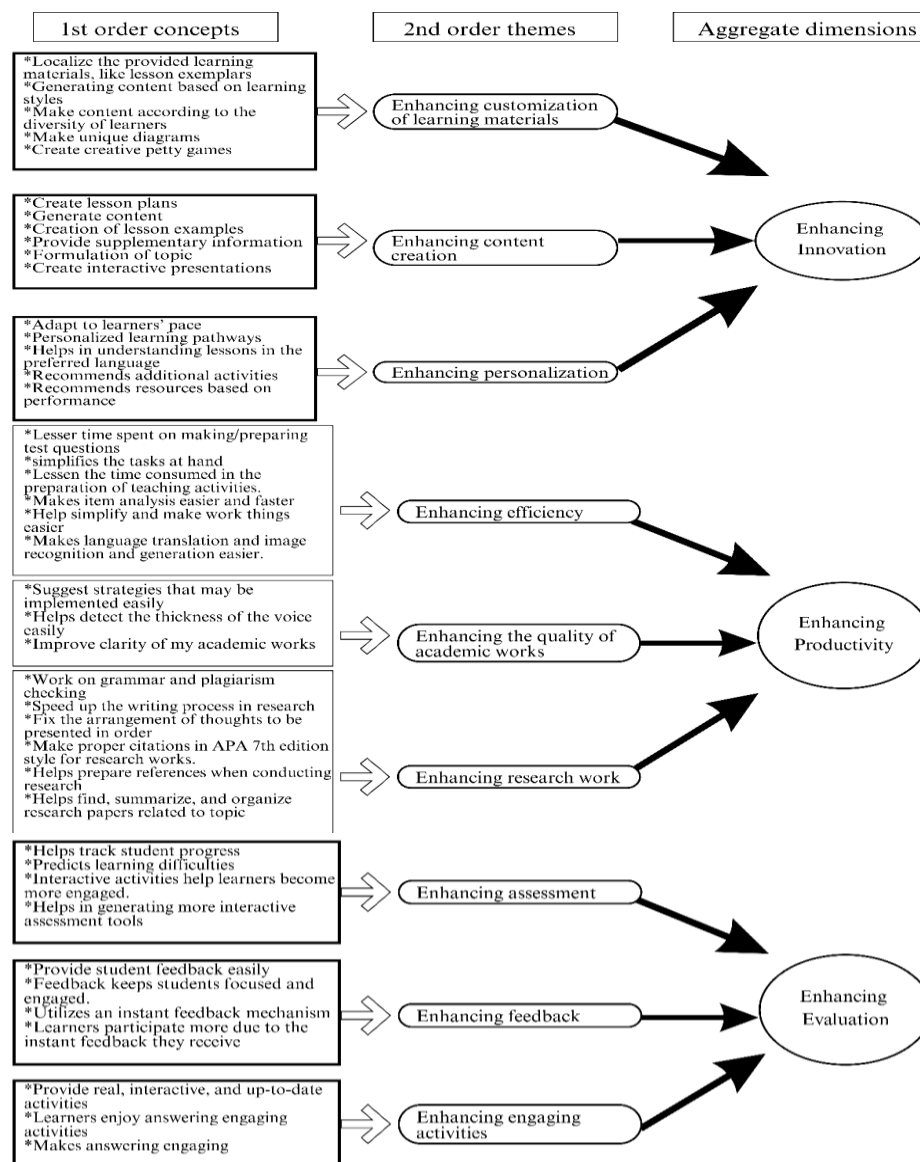


Figure 2 Data structure on the teachers' manner of utilizing AI Tools

1. Teachers' Manner of Utilizing AI Tools

Understanding how teachers leverage AI can help identify key trends and insights that shape advanced educational practices. Figure 3 presents the Three Es model developed from the data structure-Enhancing Innovation, Productivity, and Evaluation as the participants' manner of utilizing AI tools.

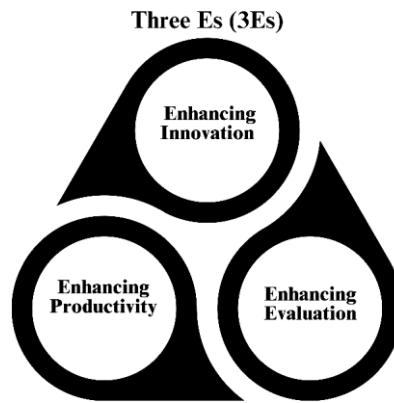


Figure 3 Teachers' manner of utilizing AI tools

Enhancing Innovation

This aggregate dimension illustrates how AI tools are utilized to enhance the teaching-learning process by creating more effective, engaging, and tailored educational resources. T14 mentioned that “AI tools can create lessons, activities, and assessments by just providing prompts with correct keywords.” This highlights that AI tools are instrumental in creating educational content and examples, facilitating a more streamlined approach to crafting lesson plans, as an example.

Further, AI tools enable teachers to customize learning materials to meet individual learners' needs. This customization enhances learner engagement and increases the likelihood of academic success, as learners are more likely to connect with content that is in accordance with their interests and abilities. T01 mentioned that: “I use AI tools for customizing/localizing learning materials provided, like lesson exemplars to jive with my learners' context, and creation of assessment tools like multiple choice for formative and summative assessments”. Additionally, T16 expressed that “AI tools and platforms help me create engaging and visually appealing presentations that will capture the attention of my learners.” This observation highlights the significance of tools in content creation, particularly in designing presentations that effectively engage learners. These days, where visual communication plays a crucial role in capturing learners' attention, the aesthetic appeal and interactivity of educational materials can influence learner engagement and retention (Ota et al., 2024). By allowing teachers to incorporate rich graphics and multimedia elements, AI tools enable them to turn standard lessons into dynamic learning experiences (Poth, 2023).

Findings reveal that by generating tailored content and addressing diverse learning needs, AI is reshaping educational practices by providing teachers with the resources to enhance learning outcomes effectively. Supporting this, studies found that AI technologies can enhance learning efficiency, customize instructional materials, and automate administrative tasks, creating opportunities to elevate learner engagement

and achievement (Ren et al., 2026; Merino-Campos, 2025; Chen et al., 2020). In this way, teachers are enabled to enrich their instruction with a variety of formats, from videos and infographics to interactive games as offered by the different AI tools, thereby catering to the diverse preferences and needs of the learners. As a result, the integration of AI tools in enhancing resource generation not only promotes efficiency in lesson planning but also enhances the overall educational experience, leading to improved learning outcomes (Ma & Zhong, 2025; Zawacki-Richter et al., 2019).

Enhancing Productivity

This aggregate dimension emphasizes the significant role that AI tools play in enhancing teaching efficiencies by reducing time spent on routine tasks and offering valuable support for teachers in research and writing. For instance, T01 noted, *“Mayat nga katulungan ti AI ta mabawasan ti time nga ag-aramid wennu agprepare iti test questions, isunga adda time ko agaramid ti dadumma nga tasks ko. Kaya na py nga isimplify ti trabaho kaslanu kayat ko nga masimplify ti maysa nga question wennu aramiden nga PISA-like questions.* It’s helpful because less time is spent on making/preparing test questions, therefore giving time for other tasks. Also, it simplifies the tasks at hand, like when I want to simplify certain questions or pattern them to PISA-like questions.” By automating aspects of lesson preparation, such as generating test questions, simplifying tasks, and crafting learning materials, teachers can allocate their time to more critical activities, such as direct interaction with learners, professional development, and other teaching-related tasks. AI tools can help teachers save time and effort in preparing materials, enabling them to dedicate more time to teaching the learners (van den Berg, & du Plessis, 2023).

In addition to enhancing productivity, AI tools can facilitate classroom management. T09 mentioned using AI to “detect the thickness of voice” in students, presenting how technology can be applied in music education or engagement activities. The emergence of AI technology has opened new opportunities for music teachers and learners to learn and teach music more effectively and efficiently. Personalized music education is now achievable through AI, which can analyze pitch, tempo, rhythm, and harmony in songs, creating a tailored learning experience for each learner. Thus, AI tools enable learners to adjust pace and difficulty level, resulting in more adaptive learning experiences (Rizal & Milyartini, 2024).

The findings under this manner of utilization imply that the impact of AI tools in education is enhancing teaching efficiency by allowing teachers to shift focus from routine tasks to meaningful learner engagement. Congruent with this finding, AI tools, when utilized properly, allow teachers to devote their time to enhancing learner performance through learner engagement (U.S. Department of Education, Office of Educational Technology, 2023; AlAli et al., 2023; Holmes et al., 2019). AI tools streamline the creation of materials, fostering creativity and innovative strategies in lesson design and assessment, thus enhancing productivity and, hence, continuous utilization of these tools as supported by the Unified Theory of Acceptance and Use of Technology (UTAUT) under the performance expectancy construct (Momani, 2020).

Enhancing Evaluation

This dimension emphasizes how AI technologies enhance streamlining assessment processes and provide timely feedback. It highlights the importance of engaging learners in the evaluation process and using technology to create effective assessment tools. T03 noted that “interactive activities with the aid of AI tools through gamification help learners become more engaged while answering their assessments.” When learners are involved in hands-on, interactive assessments, they are more likely to invest effort into their learning and retain information more effectively. Further, the role of AI in assessments extends beyond the creation of interactive tools. T12 highlighted that “these tools can help create adaptive and differentiated learning materials and help track student progress and predict learning difficulties.” Such capabilities allow teachers to personalize learning experiences based on individual learner needs.

The finding implies that the role of AI tools in assessment and feedback in the learning process is critical. By integrating interactive activities and AI tools into assessments, teachers can create engaging and effective evaluation methods that cater to individual learner needs. Ensuring quality and relevance in assessment design enhances the overall educational experience and enables teachers to provide meaningful feedback. While teachers can easily engage and track the performance of their learners, learners can also track their performance as well, making the feedback real-time.

Studies corroborate the findings on evaluation. AI tools allow teachers to create engaging learning experiences that promote active participation from all learners, including those who prefer to contribute anonymously (Oyinyola, 2024). Incorporating these activities into instruction will not only make learning enjoyable for learners but also boost their engagement (Nadeem, Oroszlányová, & Farag, 2023). By utilizing AI to monitor progress, teachers can provide timely feedback, addressing potential learning challenges before they become significant obstacles (Poth, 2023; Holmes et al., 2019).

Overall, AI tools are utilized in the Three Es Initiative (Enhancing Education Through Innovation, Productivity, and Evaluation). AI tools are utilized in lesson preparation, streamlining the administrative work of teachers. It is also utilized during assessment, making the evaluation part of the lessons interactive and ensuring immediate feedback mechanisms. In the spectrum of the teaching-learning process, the interaction of teacher and learner in the discussion part is left out. Thus, AI tools are merely a supporting mechanism for teachers and not a replacement for them, especially in interactions with the learners. This highlights the importance of human-AI augmentation, as supported by studies stating that there is a capacity for humans and AI to complement each other to improve results together. (Nguyen & Elbanna, 2025). As mentioned in the augmentation theory by De Boeck & (2024), optimal outcomes occur when humans and AI work together, each contributing their strengths.

2. Factors that Influence the Participants' Use of AI Tools

Figure 4 shows the Gioia data structure of the factors that influence teachers in utilizing AI tools in basic education.

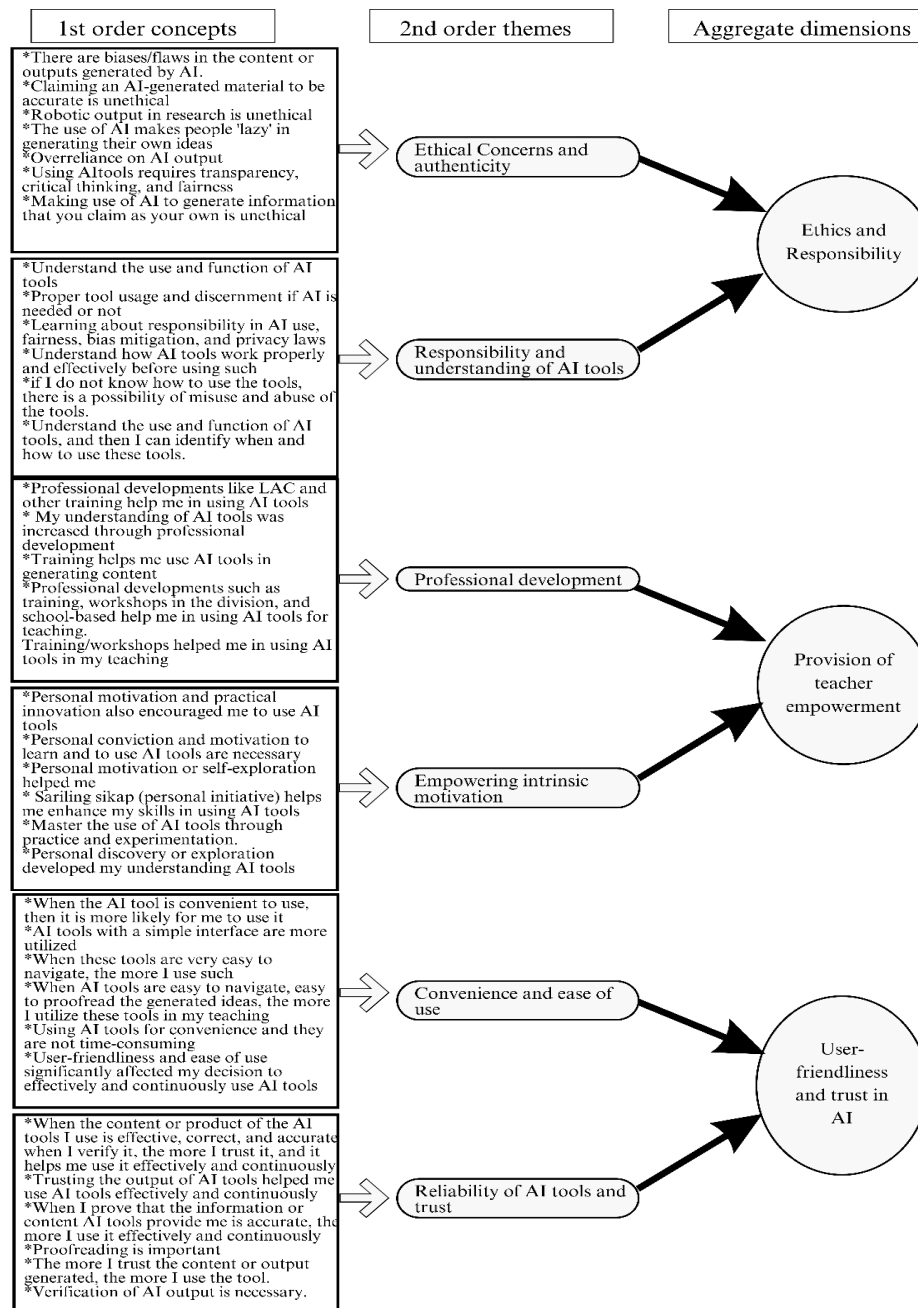


Figure 4 Data structure of the factors that influence the participants' use of AI tools

This discussion explores the key factors affecting the adoption and use of AI tools, as presented in Figure 5, the SAFE-T (Safe, Accountability, Friendly, Empowering for Teachers) model. The factors center on three key dimensions that shape participants' actions that influence them in using these tools. One is Ethics and Responsibility (Safe and accountability), the User-Friendliness and Trust in AI (Friendly), and the Provision of Teacher Empowerment (Empowering for teachers).

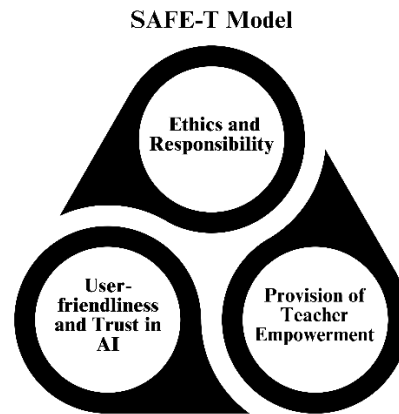


Figure 5 Factors influencing the participants' use of AI tools

Ethics and Responsibility

This aggregate dimension encompasses the ethical concerns and the need for understanding responsible AI usage among teachers. Under this dimension are two sub-themes: Ethical concerns and authenticity, and Responsibility and understanding of AI tools.

Ethical concerns and authenticity. Participants express significant concerns about the ethical implications of using AI-generated content, emphasizing the necessity of authenticity and integrity in educational practices. For instance, T07 states, "It is unethical to claim an AI-generated material to be accurate, thus it is important to proofread what was generated by AI." The statement emphasizes the importance of double-checking the outputs of AI tools. This highlights the responsibility teachers must ensure that the information provided by AI tools is verified and not accepted blindly.

Moreover, T10 emphasizes that while AI can be beneficial in professional contexts, it becomes problematic in research settings, noting that "it's unethical when used in research (merely AI made) where outputs sound robotic." T05 supports this sentiment, describing how AI tools are misused, stating, "AI tools like ChatGPT are misused by just relying on its answer (copy-paste behavior)." There is a tendency for teachers to over-rely on AI tools.

This implies that overreliance on AI tools is a major ethical concern as one of the factors that influences teachers in using AI tools. As teachers rely on AI tools, they may risk their ability to think critically and analyze information independently. This is supported by other researchers stating that overreliance on AI for generating content can undermine or lower human creativity and originality (Dolunay & Temel, 2024). As users increasingly rely on AI-generated suggestions, they might neglect analyzing things, resulting in weakened cognitive skills like critical thinking and decision-making (Zhai et al., 2024).

Therefore, findings highlight the importance of verifying AI-generated content, underscoring a teacher's responsibility to ensure that users do not accept this information thoughtlessly. Human oversight remains essential. AI tools cannot replace human judgment, especially in critical thinking, ethical review, or creative interpretation (Foysal et al., 2023).

Responsibility and understanding of AI tools. One of the foundational responses expressed by participants is that knowledge of AI tools enhances their effective use. T01 said, "If I can understand the use and function of AI tools, then I can identify when and how to use these tools." This recognition points out the idea that familiarity and knowledge with AI's capabilities foster confidence among teachers, allowing them to make informed decisions about when and how to use these technologies.

The importance of knowledge is further discussed by T02, emphasizing that deeper knowledge improves the continuous use of AI tools: "*Nu ammuk nu kas-anu nga ag-work dagitoy AI tools ket mas usarek isuda effectively ken continuously gapu ta kaya da nga agaramid ti instructional materials wennu content nga aligned ti lessons ko.* When I understand the way these tools work, the more I use them effectively and continuously due to their ability to generate structured instructional materials or content aligned to my lessons." This statement highlights the responsibility of understanding how AI can be used to generate tailored educational resources

Teachers who have a clear understanding of their roles or responsibilities in these systems work are irreplaceable. The finding implies the importance of responsible AI tool usage by teachers. This approach aims to improve educational outcomes by ensuring meaningful engagement with AI-generated content and with these different tools and applications. Research supports this claim, stating that teachers who have a strong understanding of AI's capabilities tend to recognize its advantages, which results in increased application of these tools in their teaching methods (Ma & Lei, 2024).

3. User-Friendliness and Trust in AI

This dimension highlights the importance of how accessible and reliable AI tools are to teachers, shaping their willingness to integrate these technologies into their teaching practices. Under this dimension are two sub-themes: Convenience and Ease of Use, Reliability of AI Tools and Trust.

Convenience and ease of use. Teachers emphasize that the convenience of AI tools directly impacts their willingness to integrate these technologies into their teaching practices. For instance, T01 noted, "When the AI tool is convenient to use, then it is more likely for me to use it," highlighting the straightforward connection between usability and adoption. This sentiment is supported by several participants who appreciate the simple interfaces of these tools; as T02 remarked, "Since the AI tools that I use have a simple interface, I can quickly generate learning materials without extra training, so I decided to use them more in my teaching." The ability to produce educational resources quickly and with minimal training significantly lowers the barriers for teachers, encouraging consistent use and exploration of available tools.

Further, in high-pressure situations where deadlines are crucial, the efficiency offered by user-friendly tools becomes helpful, providing teachers with quick solutions to pressing demands. As emphasized by T14, "Ease of use of AI tools influenced my decision to use these tools in my teaching because they save time to locate and present data to the class." When AI tools are easy to navigate and use, the more they are utilized by teachers in their teaching because they save their time, easing their work. They can be easily navigated, making my work easier and faster." Perceived ease of use plays a crucial role that significantly increases teachers' use of AI apart from its perceived usefulness (Lu et al., 2024). The study emphasized that AI

tools should be designed to require minimal effort to learn and integrate into existing teaching practices, as discussed in the UTAUT under the effort expectancy construct (Momani, 2020). The finding suggests that developers and educational institutions should prioritize creating simple, intuitive interfaces that require little training because complex AI tools affect teachers' ability to use them effectively (Ocaña-Fernández et al., 2019).

Reliability of AI tools and Trust. Participants express that their willingness to use these tools is based on the accuracy and reliability of the content generated. T02 expressed this notion, stating, "I trust these tools because they assist me in creating learning materials that are aligned with the subject content as long as I proofread the contents." This underscores the importance of trusting the output produced by AI, which encourages continued use if the information is verified. The reliability of AI outputs is also emphasized by T06, who noted, "When the content or product of the AI tools I use is effective, correct, and accurate when I verify them, the more I trust it, and it helps me use it effectively and continuously." When the output of AI tools is reliable, more trustworthiness is established, leading to their greater utilization.

It is implied that the relationship between trust and the effectiveness of AI tools is evident. The more teachers can be confident in the reliability of the content produced, the more likely they are to engage deeply with these technologies. This interplay between reliability, trust, verification, and effective use aligns with the broader theme of user-friendliness, reinforcing the importance of designing AI tools that promote reliability and accuracy in their outputs. The findings are supported by research stating that users need to have confidence that these tools will not result in biased outcomes (Rafiq et al., 2022), and transparency in using AI promotes trust within educational institutions. Incorporating ethical principles like accountability, accuracy, and transparency into AI systems is vital for building trust. When organizations emphasize these ethical values, they not only boost user confidence but also foster a sustainable environment for the adoption of AI (UNESCO, 2024).

Therefore, the findings on user-friendliness and trust in AI are supported by the Diffusion of Innovations (DI) theory and the Technology Acceptance Model (TAM). DI suggests that the adoption of AI is influenced by how users perceive key attributes of the innovation (in this study, the AI tools), such as its relative advantage, compatibility with existing practices, trialability, and observability. It helps explain why acceptance levels differ across schools and highlights which characteristics of AI encourage its uptake. Meanwhile, the TAM posits that teachers' willingness to adopt and use AI depends largely on perceived usefulness and ease of use, along with additional factors in extended versions, such as social influence and facilitating conditions.

4. Provision of Teacher Empowerment

This aggregate dimension of the factors influencing participants in their usage of AI tools emphasizes the role of training, support, and personal motivation in equipping teachers to utilize AI effectively. This dimension encompasses the training, resources, and ongoing support that teachers receive, allowing them to utilize AI tools in their classrooms.

Professional development. This sub-theme highlights the importance of training and encouragement from colleagues and institutions to strengthen teachers' ability to use AI tools effectively. T02 pointed out, "Professional developments like LAC and other training help me in using AI tools by introducing

available AI tools.” This suggests that access to training resources enables teachers to become familiar with AI tools, which is critical for their integration into classroom activities. This is further supported by participant 2, noting that: “Training helps me use AI tools in generating content, procedures, solutions, and examples for my lessons”. This indicates that training initiatives may improve the efficiency and creativity of lesson planning with the aid of AI tools.

The findings imply that educational institutions may prioritize the implementation of comprehensive training initiatives to ensure that teachers become familiar and comfortable with integrating AI into their classroom activities. Professional development programs increased teachers’ understanding of AI-powered tools, improved their capacity to integrate these tools into their teaching practices, and intensified their self-efficacy in using AI-powered tools in the classroom (Zulianti et al., 2025). When teachers receive thorough training on integrating AI into their teaching methods, they are more likely to use these tools effectively (Salas-Pilco & Yang, 2022) due to the proper alignment of their technological knowledge, pedagogy, and content knowledge as discussed by the TPACK model (Koehler & Mishra, 2013).

The emphasis on structured professional development programs highlights the critical role that training sessions and workshops play in fostering teachers' proficiency with AI tools (Tammets & Ley, 2023). This hands-on approach promotes a culture of continuous improvement, encouraging teachers to experiment with innovative teaching methods that integrate AI tools. Therefore, teachers can enhance their skills in utilizing AI tools through communities of practice. Social interaction through training enhances the adoption of these tools for teaching enhancement. This is supported by Sociocultural Theory and Communities of Practice by Vygotsky (1978) and Wenger (1998), respectively, who summarized that learning and professional growth occur through social interaction within communities of practice. This perspective emphasizes the role of collaborative learning, mentoring, and shared problem-solving as teachers utilize AI in classrooms.

Empowering intrinsic motivation. This aspect signifies the intrinsic desire of teachers to learn and innovate within their teaching areas. Participants highlighted various aspects of personal exploration and motivation that influenced their adoption and effective use of AI tools in the classroom. For instance, T11 noted, "My own urge to explore new technologies available for the improvement of my teaching is another factor that helped me discover and use practical AI tools." This statement underscores the proactive approach many teachers take towards embracing technology, suggesting that a natural curiosity can drive experimentation and adoption of AI solutions that enhance instructional delivery.

The role of personal initiative, referred to as “sariling sikap,” is another critical aspect that participants discussed. As articulated by T06, "Sariling sikap helps me enhance my skills, confidence, and ability to use AI tools in my teaching." This underscores the importance of self-driven effort in overcoming barriers to technology adoption. Coupled with practice and experimentation, as highlighted by T09, who stated, "Master the use of AI tools through practice and experimentation to enhance my skills, confidence, and ability to use these tools effectively," it becomes clear that active engagement and continuous learning are key strategies for empowerment.

The findings suggest that personal exploration and intrinsic motivation significantly influence teachers' adoption and effective use of AI tools in the classroom. This implies that fostering a culture of curiosity and self-directed learning among teachers can lead to more widespread and effective integration of technology in educational settings. Research indicates that teachers possess a certain level of intrinsic motivation to adopt AI in schools that may stem from their desire to enhance their AI skills through self-directed learning, and the presence of supportive teacher communities that foster a sense of connection, as discussed by the theory of communities of practice (Addo & Sentance, 2023; Wenger, 1998) and highlighted in the UTAUT specified in the social influence construct of the theory. Analyzing teachers' perspectives reveals a clear interest in training that encompasses practical applications, technological understanding, and the consideration of ethical issues. (Karimov, Saarela, & Kärkkäinen, 2024).

Conclusions

AI tools are used for innovating and preparing learning resources, enhancing productivity, and evaluation processes. By enabling innovation of learning materials, personalized learning, streamlining teacher-related tasks, and fostering interactive engagement, AI tools are enhancing the teaching-learning process. AI tools are primarily used for the preparation of engaging learning resources and for interactive assessments only, excluding the crucial interaction between teachers and learners that drives the totality of the teaching-learning process.

Further, the successful integration of AI tools in education leans on human factors and technological factors. Human factors include ethics and responsibility, provision of teacher empowerment and support mechanisms, while technological factors include the user-friendliness and trustworthiness of AI tools, which collectively shape basic education teachers' willingness to adopt these tools. By fostering a culture of responsibility and providing adequate support and training, teachers can enhance their confidence in using AI to improve teaching efficiency and learning outcomes. The interplay of human factors and technological factors leads to the effective utilization of AI tools in basic education. When human oversight equates to the technicalities and functionalities of AI tools, there is an improved teaching efficiency.

Suggestions

Educational institutions may intensify awareness campaigns on AI utilization in basic education, focusing on the manner of AI utilization, like preparation and assessment, to actively support and augment the teaching-learning process by integrating pedagogy-aligned AI tools.

Policy makers may:

1. Establish a balanced AI adoption framework that explicitly pairs human oversight with tool design. Ensure ethics, accountability, and professional support are embedded in every implementation.
2. Mandate the Human-AI-Human (HAIH) principle to combat AI tool overreliance and plagiarism.

3. Implement ongoing AI literacy and ethics training for all teachers; include practical coaching on prompt design, evaluation of AI outputs, and integration into instruction to balance and add more fire to the intrinsic desire of teachers to learn and innovate within their teaching areas.

5. Establish teacher networks to share AI-powered lesson ideas, resources, and assessments; recognize and reward effective AI integration.

6. Allocate planning time for teachers to design AI-enhanced lessons and review AI-generated materials, ensuring that PD is workload-conscious.

Researchers may conduct a similar study considering a mixed-method research design, specifically an exploratory sequential mixed-method research design, to add depth to this research area. They may also conduct a study focusing on the challenges of teachers in utilizing AI tools, as well as the utilization of basic education learners of these tools and their effect on their performance. Future research, like comparative cross-country studies in Southeast Asian countries, such as Indonesia, Thailand, and Vietnam, is also recommended.

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