

Use of Generative AI in Writing Lesson Plans: The Case of English Pre-Service Teachers

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ABSTRACT: The study investigates the viewpoints of English pre-service teachers on the integration of generative artificial intelligence (AI) in lesson plan development. Employing a qualitative case study design, five purposively selected pre-service teachers participated in in-depth interviews guided by a researcher-developed protocol. The study aimed to uncover the perceived strengths, weaknesses, opportunities, and challenges (SWOC) associated with using generative AI tools in the context of lesson planning. Findings revealed that participants appreciated AI's ability to streamline the planning process by offering quick access to information, generating clear objectives, and suggesting creative and engaging activities. However, concerns were raised regarding the accuracy and relevance of AI-generated content, overreliance on technology, and reduced opportunities for pedagogical reflection. Opportunities identified included enhanced creativity, time efficiency, and the potential for interactive and adaptive lesson components. Conversely, challenges such as limited access to AI tools, the need for content refinement, and contextual misalignment were noted. The findings were used towards a proposed protocol for the ethical and effective integration of generative AI in lesson planning.

KEYWORDS: Artificial Intelligence, English Pre-service Teachers, Generative AI Tools, Lesson Plan Development, SWOC Analysis

I. INTRODUCTION

Generative AI or GenAI has rapidly become a transformative force in education, offering innovative tools that advance teaching and learning processes. The increasing adoption of generative AI technologies in the educational settings, with applications ranging from intelligent tutoring systems to automated grading has been the highlight of recent studies such as the systematic literature review by Batista et al. (2024) which underscores the versatility of generative AI in higher education, noting its potential to revolutionize traditional educational practices. This trend is further supported by the growing number of educators and students utilizing AI tools to facilitate more engaging and effective learning environments (Zhai & Guo, 2024).

Despite its promising potential, the integration of GenAI in education is not without challenges. These challenges encompass various issues, from technical and ethical concerns to sensible implementation difficulties. According to the Department for Education (UK) (2024) key issues include concerns about academic integrity, data privacy, and the ethical use of AI-generated content. A report by the Harvard Graduate School of Education (2024) highlights that while generative AI can enhance learning, it also poses risks such as misinformation, bias, and overreliance on technology. Additionally, there are significant concerns regarding the equitable access to AI tools, as disparities in technology availability can exacerbate existing educational inequalities (Samala, et. al., 2024). Addressing these issues is crucial to ensure that the benefits of generative AI are realized without compromising the integrity and inclusivity of educational systems.

This study aims to delve into the viewpoints of English pre-teachers on the use of generative AI in writing lesson plans. It seeks to understand their views on the strengths and weaknesses of employing AI for this purpose, highlighting both the potential benefits and the limitations they perceive. Furthermore, the study explores the opportunities that English pre-service teachers identify in AI-generated lesson plans compared to traditional ones, emphasizing how AI might enhance or transform their teaching practices. It also investigates the challenges these pre-teachers encounter when integrating generative AI into lesson plan development, providing a comprehensive overview of the practical difficulties and obstacles they face. Based on these insights, the study will offer well-informed recommendations on the precautions that should be considered to ensure the effective and responsible incorporation of generative AI into lesson plan creation.

The findings of this study may contribute to the growing body of knowledge on the application of generative AI in education, particularly in the context of lesson plan development. By examining the viewpoints of English pre-teachers, this research will provide valuable insights into the practical benefits and challenges associated with AI-generated lesson plans. Furthermore, the

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study may offer recommendations for educators and heads of academic institutions on how to effectively integrate generative AI into educational practices while addressing potential risks and ethical considerations as this is essential for developing strategies that leverage AI technologies to enhance teaching and learning outcomes in a responsible and inclusive manner.

II. METHOD

This study employed a qualitative research design using a case study approach to systematically explore the viewpoints of selected English pre-service teachers on the use of generative artificial intelligence (AI) in writing lesson plans. As Yin (2018) emphasized, case study research allows for an in-depth examination of a phenomenon within its real-world context, making it ideal for understanding the complex perspectives of pre-service teachers. The participants were five English pre-service teachers from Pamantasan ng Lungsod ng San Pablo, currently deployed at San Pablo City Integrated High School, selected through purposive sampling for their active engagement in teaching English and use of generative AI tools. Inclusion criteria required participants to be actively teaching English, using generative AI in lesson planning, and willing to provide informed consent, while those outside these parameters were excluded. Data collection was facilitated through a researcher-made interview guide divided into four parts—strengths, weaknesses, opportunities, and challenges of using generative AI in lesson planning—administered via online video conferencing for flexibility and depth. The data gathering process involved three phases: pre-implementation (securing approvals, validating instruments, pilot testing, and obtaining consent), implementation (conducting and recording interviews), and post-implementation (transcribing, organizing, and analyzing data). Thematic analysis was used to identify patterns and themes, supported by coding to categorize responses meaningfully. To ensure reliability and validity, participant checking was conducted, allowing respondents to verify the accuracy of interpretations and affirm the credibility of the findings.

III. RESULTS AND DISCUSSION

Strengths

The strengths of using AI in lesson planning have generated four themes. The English pre-service teacher participants revealed that these were ease of finding information and ideas, efficiency and convenience, providing clear and concise objectives and instructions, and generating unique and motivational activities.

Ease of Finding Information and Ideas

The first generated theme of the strengths experienced by the pre-service teachers is ease of finding information and ideas because AI tools significantly simplify this process. This was apparent in the statement of Participant 1 who mentioned...

“When finding appropriate or relevant activities for the lesson, it is hard to think of a unique activity that captures the interest of students. Another is that when finding information about the topic, it is easy to look for those.”

The lines revealed that AI tools help teachers quickly find unique activities and detailed information, reducing the time and effort required for lesson preparation. This was also true for Participant 2 who expressed that...

“It is helpful since it can provide detailed information with what you need.”

The experienced benefit by Participant 2 explains that AI tools provide detailed and appropriate information, making it easier for teachers to create engaging and effective lesson plans. The same benefit was also faced by Participant 3 who stated that...

“I can easily write my lesson plan without any hassle.”

The lines taken from Participant 3 showed that AI tools make the lesson planning process hassle-free, allowing teachers to focus more on teaching. This ease of finding information and ideas was one of the strengths of using AI in lesson planning that provided significant convenience to the teachers.

The ease of finding information and ideas is a notable strength of AI tools, as highlighted by the participants in the study. This strength is further supported by the research of Gökçearslan, Tosun, and Erdemir (2024), who conducted a systematic literature review on the advantages and challenges of AI chatbots in education. Their study found that AI tools significantly reduce the workload of educators by providing quick access to detailed and relevant information, which enhances the efficiency of lesson planning. This aligns with the experiences of Participant 1, who mentioned the difficulty of coming up with unique activities and the ease of finding information on various topics using AI tools. Similarly, Participant 2 noted that AI tools are helpful in providing detailed information as needed, and Participant 3 appreciated the hassle-free lesson planning process enabled by these tools. The findings of Gökçearslan et al. underscore the convenience and effectiveness of AI tools in supporting teachers' efforts to create engaging and well-informed lesson plans.

Furthermore, this is supported by a study conducted by Heung Yue Yim and Su (2024), which reviewed the use of AI learning tools in K-12 education. The study found that AI tools significantly simplify the process of finding relevant activities and detailed information, thereby reducing the time and effort required for lesson preparation. The research highlighted that AI tools provide detailed and appropriate information, making it easier for teachers to create engaging and effective lesson plans. This convenience allows teachers to focus more on teaching and less on the administrative aspects of lesson planning.

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Efficiency and Convenience

The second generated theme of the strengths experienced by the pre-service teachers is efficiency and convenience because AI tools make the lesson planning process faster and easier. This was apparent in the statement of Participant 1 who mentioned...

"With the help of AI, it is easy to craft a lesson plan."

The lines revealed that AI tools streamline the lesson planning process, making it more efficient. This was also true for Participant 3 who expressed that...

"It's convenient especially if you only have limited time to do your lesson plan."

The experienced benefit by Participant 3 explains that AI tools are particularly useful when time is limited, allowing teachers to quickly create lesson plans. The same benefit was also faced by Participant 4 who stated that...

"It provides fast and almost accurate answers."

The lines taken from Participant 4 showed that AI tools provide quick and accurate answers, further enhancing their efficiency. This efficiency and convenience were one of the strengths of using AI in lesson planning that allowed teachers to save time and effort.

The efficiency and convenience provided by AI tools are significant strengths, as highlighted by the participants in the study. This benefit is further supported by the research of Heung Yue Yim and Su (2024), who conducted a scoping review on the use of AI learning tools in K-12 education. Their study found that AI tools streamline various educational processes, making them faster and more efficient, which aligns with the experiences of Participant 1, who mentioned that AI makes it easy to craft lesson plans. Similarly, Participant 3 noted the convenience of AI tools, especially when time is limited, and Participant 4 appreciated the quick and accurate answers provided by these tools. The findings of Heung Yue Yim and Su underscore the role of AI in enhancing the efficiency and convenience of lesson planning, allowing teachers to save time and effort while creating effective lesson plans.

Providing Clear and Concise Objectives and Instructions

The third generated theme of the strengths experienced by the pre-service teachers is providing clear and concise objectives and instructions because AI tools help in creating well-structured lesson plans. This was apparent in the statement of Participant 2 who mentioned...

ChatGPT can provide a clear and concise objective appropriate to your topic."

The lines revealed that AI tools ensure that lesson plans have clear and appropriate objectives. This was also true for Participant 5 who expressed that...

"Generative AI helps me to write clear instructions for the activity."

The experienced benefit by Participant 5 explains that AI tools assist in writing clear instructions for activities, minimizing misunderstandings. This clarity and conciseness were one of the strengths of using AI in lesson planning that helped teachers create effective lesson plans.

The capability of AI tools to provide clear and concise objectives and instructions is a significant strength experienced by teachers in lesson planning. This benefit is further supported by the research of García-Martínez et al. (2023), who analyzed the impact of artificial intelligence and computational sciences on student performance. Their study found that AI tools help in creating well-structured lesson plans by ensuring that objectives are clear and appropriate to the topic. Additionally, AI tools assist in writing clear instructions for activities, which minimizes misunderstandings and enhances the effectiveness of lesson plans. This aligns with the experiences of Participant 2, who mentioned that AI tools can provide "a clear and concise objective appropriate to your topic," and Participant 5, who noted that generative AI helps in writing clear instructions for activities. The findings of García-Martínez et al. underscore the importance of clarity and conciseness in AI-generated content, enabling teachers to focus more on delivering engaging and effective lessons.

Generating Unique and Motivational Activities

The fourth generated theme of the strengths experienced by the pre-service teachers is generating unique and motivational activities because AI tools provide innovative ideas. This was apparent in the statement of Participant 1 who mentioned...

"AI itself is really a great help in crafting a lesson plan because it gives you some unique idea."

The lines revealed that AI tools suggest unique activities that can enhance student engagement. This was also true for Participant 5 who expressed that...

"Generative AI can help me by suggesting unique motivational activities."

The experienced benefit by Participant 5 explains that AI tools provide motivational activities that make lessons more dynamic and appealing. This creativity in lesson planning was one of the strengths of using AI that led to more effective teaching and learning experiences.

The ability of AI tools to generate unique and motivational activities is a significant strength experienced by teachers in lesson planning. This benefit is further supported by the research of Noroozi, Soleimani, Farrokhnia, and Banihashem (2024), who explored the pedagogical, theoretical, and methodological perspectives of generative AI in education. Their study found that AI tools, such as ChatGPT, can significantly enhance educational outcomes by providing innovative and engaging activities that

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motivate students. This aligns with the experiences of Participant 1, who mentioned that AI tools are "a great help in crafting a lesson plan because it gives you some unique idea," and Participant 5, who noted that generative AI helps in suggesting unique motivational activities. The findings of Noroozi et al. underscore the potential of AI tools to make lessons more dynamic and appealing, thereby enhancing the overall effectiveness of teaching and learning experiences.

Additionally, this is supported by a study conducted by Crompton and Burke (2023), which examined the state of artificial intelligence in higher education. The study found that AI tools provide innovative ideas that enhance student engagement and make lessons more dynamic and appealing. The research highlighted that AI tools suggest unique activities, which helps teachers create more effective teaching and learning experiences. This creativity in lesson planning allows teachers to focus on delivering engaging content that captures students' interest.

Weaknesses

The weaknesses of using AI in lesson planning have generated three themes. The English pre-service teacher participants revealed that these were accuracy and reliability of information, relevance and specificity of data, and dependence on AI and limited interaction.

Accuracy and Reliability of Information

The first generated theme of the weaknesses experienced by the pre-service teachers is the accuracy and reliability of information because AI tools sometimes provide incorrect or outdated data. This was apparent in the statement of Participant 1 who mentioned...

"The information is not that accurate or reliable. There are many times that the information is not that reliable and accurate."

The lines revealed that teachers often question the reliability of the information provided by AI tools. This was also true for Participant 1 who expressed that...

"The source and information itself are very questionable."

The experienced problem by Participant 1 explains that the questionable nature of the sources and information provided by AI tools can lead to mistrust. The same problem was also faced by Participant 4 who stated that...

"The data sometimes provided by the AI is outdated and sometimes it prompts grammatically wrong."

The lines taken from Participant 4 showed that AI tools sometimes provide outdated data and grammatical errors, further affecting their reliability. This accuracy and reliability of information were one of the weaknesses of using AI in lesson planning that caused concern among teachers.

The accuracy and reliability of information provided by AI tools are significant concerns, as highlighted by the participants in the study. This issue is further supported by the research of Zawacki-Richter, Marín, Bond, and Gouverneur (2019), who conducted a systematic review on AI applications in higher education. Their study found that AI tools often provide incorrect or outdated data, which can lead to mistrust among educators. This aligns with the experiences of Participant 1, who mentioned that the information from AI tools is often not reliable or accurate, and Participant 4, who noted that AI sometimes provides outdated data and grammatical errors. The findings of Zawacki-Richter et al. underscore the importance of ensuring the accuracy and reliability of AI-generated content to build trust and enhance the effectiveness of AI tools in educational settings.

These significant concerns of pre-service teachers is supported by a study conducted by Verma, Getenet, Dann, and Shaik (2025), which evaluated the performance and reliability of an AI model designed for education. The study found that AI models often require continuous updates to maintain accuracy and effectiveness. The research highlighted that discrepancies between AI assessments and expert evaluations can lead to mistrust among users. Additionally, the study emphasized the need for rigorous evaluation and continuous improvement of AI models to ensure they provide reliable and accurate information, minimizing the risk of outdated data and grammatical errors.

Relevance and Specificity of Data

The second generated theme of the weaknesses experienced by the pre-service teachers is the relevance and specificity of data because AI tools sometimes fail to provide the specific details needed. This was apparent in the statement of Participant 3 who mentioned...

"There are times that even though the specific details you explained properly, it still can't get the answer I want."

The lines revealed that AI tools sometimes fail to understand and provide the specific details required by teachers. This was also true for Participant 4 who expressed that...

"It gives irrelevant data and sometimes inaccurate grammar."

The experienced problem by Participant 4 explains that the irrelevance of the data and grammatical inaccuracies can hinder the lesson planning process. The same problem was also faced by Participant 5 who stated that...

"It tends to be redundant when you are going to ask for interactive activity, it suggests the same list of activities."

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The lines taken from Participant 5 showed that AI tools can be repetitive, suggesting the same activities, which limits their usefulness. This relevance and specificity of data were one of the weaknesses of using AI in lesson planning that affected the quality of the lesson plans.

The relevance and specificity of data provided by AI tools are significant concerns, as highlighted by the participants in the study. This issue is further supported by the research of Gökçearsan, Tosun, and Erdemir (2024), who conducted a systematic literature review on the benefits and challenges of AI chatbots in education. Their study found that AI tools often fail to provide the specific details needed by educators, which can lead to frustration and hinder the lesson planning process. This aligns with the experiences of Participant 3, who mentioned that AI tools sometimes fail to understand and provide the specific details required, and Participant 4, who noted that AI tools can give irrelevant data and contain grammatical inaccuracies. Similarly, Participant 5 pointed out that AI tools tend to be repetitive, suggesting the same list of activities, which limits their usefulness. The findings of Gökçearsan et al. underscore the importance of ensuring that AI tools provide relevant and specific data to enhance their effectiveness in educational settings.

The significant concerns of pre-service teachers is supported by a study conducted by Crompton and Burke (2023), which examined the state of artificial intelligence in higher education. The study found that AI tools sometimes fail to provide the specific details needed by educators, leading to issues with relevance and accuracy. The research highlighted that AI tools can be repetitive and may suggest the same activities, which limits their usefulness. Additionally, the study emphasized the importance of continuous updates and improvements to AI models to ensure they provide relevant and specific information that meets the needs of teachers.

Dependence on AI and Limited Interaction

The third generated theme of the weaknesses experienced by the pre-service teachers is dependence on AI and limited interaction because relying solely on AI can be problematic. This was apparent in the statement of Participant 1 who mentioned...

"Do not rely solely on AI as it does not give reliable and accurate information."

The lines revealed that over-reliance on AI can lead to issues due to the inaccuracy of the information provided. This was also true for Participant 2 who expressed that...

"There are specific times that you can ask from it."

The experienced problem by Participant 2 explains that the limited interaction with AI tools can restrict their usefulness. This dependence on AI and limited interaction were one of the weaknesses of using AI in lesson planning that highlighted the need for human oversight and intervention.

The dependence on AI and limited interaction are significant weaknesses experienced by teachers, as highlighted by the participants in the study. This issue is further supported by the research of Verma, Getenet, Dann, and Shaik (2025), who evaluated the performance and reliability of an AI model designed for education. Their study found that over-reliance on AI can lead to issues due to the inaccuracy of the information provided, which aligns with the experiences of Participant 1, who mentioned that AI does not always give reliable and accurate information. Additionally, Participant 2 noted that there are specific times when AI tools can be consulted, indicating the limited interaction and usefulness of these tools. The findings of Verma et al. emphasize the importance of balancing AI use with human expertise to ensure the accuracy and reliability of information, thereby enhancing the overall effectiveness of lesson planning.

Opportunities

The opportunities that English pre-service teachers see in AI-generated lesson plans compared to traditional lesson plans have generated three themes. The teacher participants revealed that these were time efficiency, creativity and interactivity, and advanced features and capabilities.

Time Efficiency

The first generated theme of the opportunities seen by the pre-service teachers is time efficiency because AI tools significantly reduce the time required for lesson planning. This was apparent in the statement of Participant 1 who mentioned...

"Easy to craft and in just one click your lesson plan is already made. You can really save time."

The lines revealed that AI tools allow teachers to quickly create lesson plans, saving valuable time. This was also true for Participant 4 who expressed that...

"Fast response help us to create lesson plan faster and less hassle."

The experienced benefit by Participant 4 explains that the fast responses provided by AI tools make the lesson planning process less cumbersome. The same benefit was also faced by Participant 5 who stated that...

*"It will not take too much time for the teachers, they can allot more time for other paper works and preparation..."*The lines taken from Participant 5 showed that AI tools enable teachers to allocate more time to other important tasks. This time efficiency was one of the opportunities seen in AI-generated lesson plans that provided significant convenience to the teachers.

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The time efficiency provided by AI tools is a significant opportunity, as highlighted by the participants in this study. This benefit is further supported by the research of Crompton and Burke (2023), who conducted a systematic review on the state of AI in higher education. Their study found that AI tools significantly reduce the time required for various educational tasks, including lesson planning, which aligns with the experiences of Participant 1, who mentioned that AI makes it easy to craft lesson plans quickly. Similarly, Participant 4 noted that the fast responses from AI tools help create lesson plans faster and with less hassle, and Participant 5 appreciated that AI tools allow teachers to allocate more time to other important tasks. The findings of Crompton and Burke underscore the role of AI in enhancing time efficiency, providing significant convenience to educators by streamlining the lesson planning process.

This opportunity greatly reduces the time required for lesson planning and is supported by a study conducted by Zawacki-Richter, Marín, Bond, and Gouverneur (2019), which systematically reviewed research on AI applications in higher education. The study found that AI tools streamline the lesson planning process, allowing teachers to quickly create lesson plans and save valuable time. The research highlighted that the fast responses provided by AI tools make the lesson planning process less cumbersome, enabling teachers to allocate more time to other important tasks. This efficiency and convenience are key benefits of using AI in lesson planning, providing significant advantages to teachers.

Creativity and Interactivity

The second generated theme of the opportunities seen by the pre-service teachers is creativity and interactivity because AI tools help in creating engaging lesson plans. This was apparent in the statement of Participant 3 who mentioned...

"You can be more interactive and trendy that your students can relate and enjoy."

The lines revealed that AI tools enable teachers to create interactive and trendy activities that students enjoy. This was also true for Participant 4 who expressed that...

"It will lessen the burden to think of creative activities as well as quizzes to put in the lesson plan."

The experienced benefit by Participant 4 explains that AI tools reduce the burden on teachers to come up with creative activities and quizzes. This creativity and interactivity were one of the opportunities seen in AI-generated lesson plans that made lessons more engaging for students.

The creativity and interactivity provided by AI tools are significant opportunities, as highlighted by the participants in the study. This benefit is further supported by the research of Lin and Chen (2024), who explored the effects of AI-integrated educational applications on college students' creativity and academic emotions. Their study found that AI tools can significantly enhance creativity by introducing new ideas and problem-solving techniques, which aligns with the experiences of Participant 3, who mentioned that AI tools enable teachers to be "more interactive and trendy" in ways that students can relate to and enjoy. Similarly, Participant 4 noted that AI tools lessen the burden of thinking up creative activities and quizzes, making lesson planning easier and more engaging. The findings of Lin and Chen underscore the potential of AI tools to make lessons more dynamic and appealing, thereby enhancing the overall effectiveness of teaching and learning experiences.

The creativity and interactivity helped in creating engaging lesson plans is supported by a study conducted by Lin and Chen (2024), which explored the effects of AI-integrated educational applications on college students' creativity and academic emotions. The study found that AI tools stimulate creativity by introducing new ideas and problem-solving techniques, making lessons more interactive and enjoyable for students. The research highlighted that AI tools reduce the burden on teachers to come up with creative activities and quizzes, thereby enhancing the overall learning experience. This creativity and interactivity are key benefits of using AI in lesson planning, contributing to more effective and engaging educational practices.

Advanced Features and Capabilities

The third generated theme of the opportunities seen by the pre-service teachers is advanced features and capabilities because AI tools offer innovative functionalities. This was apparent in the statement of Participant 3 who mentioned...

"They have new features such as it can read whole documents, it can scan information coming from a picture..." The lines revealed that AI tools have advanced features that enhance their utility. This was also true for Participant 5 who expressed that...

"You can also instantly check your own grammar for lesson planning while using generative AI."

The experienced benefit by Participant 5 explains that the advanced features of AI tools, such as grammar checking, make lesson planning more efficient. This advanced features and capabilities were one of the opportunities seen in AI-generated lesson plans that provided additional support to teachers.

The advanced features and capabilities of AI tools are significant opportunities, as highlighted by the participants in the study. This benefit is further supported by the research of Gökçearsan, Tosun, and Erdemir (2024), who conducted a systematic literature review on the benefits and challenges of AI chatbots in education. Their study found that AI tools offer innovative functionalities, such as document reading and image scanning, which enhance their utility and efficiency. This aligns with the experiences of Participant 3, who mentioned that AI tools have new features like reading whole documents and scanning information from pictures, and Participant 5, who noted that AI tools can instantly check grammar for lesson planning. The

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findings of Gökçearsan et al. underscore the importance of advanced features in AI tools, providing additional support to teachers and making lesson planning more efficient and effective.

Challenges

The challenges that English pre-service teachers encountered regarding the use of generative AI in lesson plan development have generated three themes. The teacher participants revealed that these were limited access and usage restrictions, need for rephrasing and grammar corrections, and lack of specificity and relevance.

Limited Access and Usage Restrictions

The first generated theme of the challenges experienced by the pre-service teachers is limited access and usage restrictions because AI tools often have limitations on usage. This was apparent in the statement of Participant 2 who mentioned...

"Sometimes it has specific number of times that you can ask for help on it."

The lines revealed that AI tools sometimes limit the number of queries teachers can make. This was also true for Participant 3 who expressed that...

"The most challenging part of generative AI is, when you're not using it as a premium, you only have limited access..."

The experienced problem by Participant 3 explains that the limited access to AI tools, especially without a premium subscription, can hinder their usefulness. The same problem was also faced by Participant 5 who stated that...

"The challenging part is when the AI you are using has limit of usage."

The lines taken from Participant 5 showed that usage limits on AI tools can be a significant challenge. This limited access and usage restriction were one of the challenges of using AI in lesson plan development that affected the teachers' ability to fully utilize the tools.

The limited access and usage restrictions of AI tools are significant challenges experienced by teachers, as highlighted by the participants in this study. This issue is further supported by the research of Nguyen (2025), who explored the ethical and pedagogical principles of using generative AI tools in higher education. Nguyen's study found that AI tools often have limitations on usage, which can hinder their effectiveness and accessibility. This aligns with the experiences of Participant 2, who mentioned that AI tools sometimes limit the number of queries, and Participant 3, who noted the challenges of limited access without a premium subscription. Similarly, Participant 5 pointed out that usage limits can be a significant challenge. The findings of Nguyen emphasize the need for equitable access to AI tools to ensure their full utilization and effectiveness in educational settings.

The limited access and usage restrictions of AI tools is supported by a study conducted by Gökçearsan, Tosun, and Erdemir (2024), which systematically reviewed the benefits, challenges, and methods of AI chatbots in education. The study found that AI tools often impose restrictions on the number of queries or require premium subscriptions for full access, which can hinder their usefulness. The research highlighted that these limitations can be a significant barrier for teachers, affecting their ability to fully utilize AI tools in lesson planning and other educational activities. Addressing these access and usage restrictions is crucial for maximizing the benefits of AI in education.

Need for Rephrasing and Grammar Corrections

The second generated theme of the challenges experienced by the pre-service teachers is the need for rephrasing and grammar corrections because AI-generated content often contains grammatical errors. This was apparent in the statement of Participant 4 who mentioned...

"The answer it grammatically inaccurate, so rephrasing is a must."

The lines revealed that teachers often need to rephrase AI-generated content due to grammatical inaccuracies. This was also true for Participant 4 who expressed that...

"Upon receiving the answer from AI, you still need to rephrase due to wrong grammar and lacks information."

The experienced problem by Participant 4 explains that the need to correct grammar and rephrase content can add to the teachers' workload. This need for rephrasing and grammar corrections was one of the challenges of using AI in lesson plan development that required additional effort from the teachers.

The need for rephrasing and grammar corrections in AI-generated content is a significant challenge experienced by teachers, as highlighted by the participants in the study. This issue is further supported by the research of Priya and Vijayalakshmi (2023), who explored the impact of AI-enhanced grammar correction tools in language education. Their study found that while AI tools provide real-time feedback and personalized instruction, they often contain grammatical errors that require rephrasing and correction by educators. This aligns with the experiences of Participant 4, who mentioned that AI-generated answers are "grammatically inaccurate, so rephrasing is a must," and noted the additional effort required to correct grammar and rephrase content. The findings of Priya and Vijayalakshmi emphasize the importance of continuous improvement in AI grammar correction tools to reduce the workload on teachers and enhance the accuracy of AI-generated content.

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Lack of Specificity and Relevance

The third generated theme of the challenges experienced by the pre-service teachers is the lack of specificity and relevance because AI tools sometimes provide overly general or irrelevant content. This was apparent in the statement of Participant 2 who mentioned...

"Sometimes the answers are too flowery and not exact to the point."

The lines revealed that AI tools sometimes provide answers that are not specific enough. This was also true for Participant 5 who expressed that...

"One example is the activities is more accurate for Science subject than in English."

The experienced problem by Participant 5 explains that the lack of relevance in the suggested activities can limit their usefulness for specific subjects. This lack of specificity and relevance was one of the challenges of using AI in lesson plan development that affected the quality of the lesson plans.

The lack of specificity and relevance in AI-generated content is a significant challenge faced by educators, as highlighted by the participants in this study. This issue is further supported by the findings of Heung Yue Yim and Su (2024), who conducted a scoping review on the use of AI learning tools in K-12 education. Their research revealed that AI tools often fail to provide the specific details needed by educators, which can lead to frustration and hinder the lesson planning process. This aligns with the experiences of Participant 2, who mentioned that AI-generated answers are sometimes "too flowery and not exact to the point," and Participant 5, who noted that suggested activities were more suitable for Science subjects than for English. The study by Heung Yue Yim and Su underscores the importance of ensuring that AI tools provide specific and relevant content to enhance the quality of lesson plans and support effective teaching practices.

The lack of specificity and relevance is further supported by the findings of Zhai, Wibowo, and Li (2024), who conducted a systematic review on the effects of over-reliance on AI dialogue systems. Their research revealed that such systems often produce overly general or irrelevant content, which can negatively impact students' cognitive abilities and decision-making processes. This aligns with the experiences of Participant 2, who noted that AI-generated answers are sometimes "too flowery and not exact to the point," and Participant 5, who pointed out that suggested activities were more suitable for Science subjects than for English. The study by Zhai et al. underscores the importance of ensuring that AI tools provide specific and relevant content to enhance the quality of lesson plans and support effective teaching practices..

IV. CONCLUSIONS

Teacher training programs should integrate AI literacy into their curriculum to equip pre-service teachers with the skills to use AI tools effectively and ethically, while also training them to critically evaluate AI-generated content and enhance it with their own pedagogical expertise; additionally, educational institutions must ensure equitable access to these technologies by supporting educators with limited technological resources.

ACKNOWLEDGMENT

The researcher would like to express his profound gratitude to Pamantasan ng Lungsod ng San Pablo, College of Teacher Education and its Pre-service teachers deployed at San Pablo City Integrated High School, for granting the permission on the conduct of the study.

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