EXPLORING INDONESIAN EFL PRE-SERVICE TEACHERS' EXPERIENCES IN AI-ASSISTED TEACHING PRACTICUM: BENEFITS AND DRAWBACKS

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Abstract
The integration of Artificial Intelligence (AI) in educational settings is rapidly evolving, presenting both opportunities and challenges for pre-service English teachers. This case study explored three Indonesian EFL pre-service teachers' experiences in using AI technologies and the implications for their pedagogical practices during teaching practicum. Several AI tools, namely *ChatGPT, Copilot, Twee,* and *Quizizz AI,* were used to help the pre-service teachers in planning, creating learning content, and assessing students. Data were collected from semi-structured interviews, reflective reports, and artifacts from the three Indonesian pre-service teachers majoring in English language education joining a teaching practicum program in a local school for 6 weeks. The qualitative data analysis revealed that the Indonesian EFL pre-service teachers saw three essential benefits of AI-assisted teaching practicum: (1) AI assists them with brainstorming and ideation process, (2) AI makes teaching preparation more time efficient, and (3) AI assists them in crafting tailor-made English materials for students. Meanwhile, they also addressed some challenges in the process, namely (1) overreliance, (2) ethical violation, and (3) fabricated and misleading contents.

Keywords: AI, EFL, mentoring, pre-service teacher, teaching practice

Introduction

In recent years, the integration of Artificial Intelligence (AI) into education has gained significant attention worldwide. This technological shift has extended its influence on language teaching, particularly in English as a Foreign Language (EFL) contexts because the emergence of the Large Language Model (LLM) such as *ChatGPT* or *Copilot* is poised to bring about changes in several aspects of language teaching. Previous studies (Moorhouse et al., 2024; Kohnke et al., 2023; Woo et al.,2024) have investigated the integration of AI for enhancing teachers' professional competence in using generative AI. This involves training pre-service teachers to effectively use AI tools in lesson planning and classroom activities. The long-term goal is to create future-ready teachers who can adapt to and implement emerging AI technologies in their teaching practices, leveraging AI's benefits in language education while staying updated with technological advancement.

Furthermore, the pre-service teachers see AI as a tool which helpsthem automate various tasks, resulting in more effective and efficient teaching performance. Despite the benefits, there have been concerns regarding the accuracy of information provided by LLMs, for instance, plausible information generated by AI which poses risks in educational settings (Kohnke et al., 2023).

Pre-service teachers need to be aware of the limitations of AI. However, they maynot have the technical skills required to use AI-based educational tools, and there is a lack of mentoring programs which guide these pre-service teachers especially during their teaching practicum. Teaching practicum is a key element of teacher education program which involves hands-on, practical experience in a real classroom setting (Pratiwi, 2020). During the teaching practicum, pre-service teachers have the opportunity to apply the theories and knowledge gained in their courses they took in their department. They are placed in schools under the supervision of experienced teachers and their lecturers, participate in teaching activities, and gradually handle more responsibilities as they progress.

However, pre-service teachers frequently face some challenges which often affect their confidence during teaching practicum program. Pre-service teachers often feel anxious and overwhelmed due to myriad responsibilities in the teaching profession (Gorospe, 2022; Squires et al., 2022), from crafting lesson plans and designing engaging activities to material delivery and assessment. This multifaceted nature of teaching can be overwhelmingfor new teachers. Therefore, considering AI potentials, acquiring skills in using AI can assist pre-service teachers in managing workload by automating some of the teaching processes. While several studies have explored teachers' perspectives on the use of AI in language education studies (Kohnke et al., 2023; Moorhouse et al., 2024;Woo et al., 2024), research on the development of AI skills specifically for pre-service teachers remains limited. Therefore, this study is important as it facilitates pre-service teachers' personal and professional growth. When teachers do not have AI skills, they may continue to struggle in effectively integrating technology, leading to increased anxiety (Pasaribu & Harendita, 2018). Without this skill, pre-service teachers will miss the opportunities for professional growths which might result in ineffective teaching practices. Moreover, a lack of support from the teacher educators could lead to a negative perception of the teaching profession among young generation, reducing the number of pre-service teachers entering the field.

Even though pre-service teachers' digital skills have improved and technological usage has increased due to the COVID-19 pandemic (Moorhouse, 2023; Sartika et al., 2021), language teachers may require AI-specific digital skills to use AI tools effectively (Konhke et al., 2023). The critical issue is the absenceof a clear framework for mentoring these pre-service teachers, which guides them in harnessing technology to enhance their overall teaching performance while still upholding academic integrity (Getenet et al., 2024). This gap creates the need to empower pre-service teachers to utilize technology which cultivates a positive perception of teaching as a fulfilling and rewarding profession for the young generation. Bridging this gap is crucial as it directly influences the preparedness of future educators to harness the benefits of technology, specifically AI, in their teaching practices.

To address the challenge for acquiring AI-specific digital skills, providing pre-service teachers with hands-on experience on the integration of AI within their

teaching practicum is essential. By actively engaging with AI tools in real classroom settings, these future educators can experiment with AI-powered lesson planning and resource curation as well as collaborate with experienced teachers and lecturers to provide feedback for improvement. Delgado et al. (2020) highlight the significance of hands-on experience in developing professional identity of EFL pre-service teachers because it can help them acquire relevant skills and knowledge that prepare them to be effective educators (Jita & Munje, 2021; Mali, 2024; Orland-Barak & Wang, 2021; Tutyandari et al., 2022) especially in the era of AI. Therefore, this research aims to investigate the experiences of pre-service teachers who will undergo mentoring sessions in an AI-assisted teaching practicum program in a high school in Indonesia.

This research is significant and holds novelty since it addresses pre-service teachers' concerns regarding the integration of Artificial Intelligence. With the fact that AI is widespread, it is ineffective and impractical to ban the use of AI in education. Rather, this research recommends a proactive approach to finding effective strategies to collaboratively integrate AI into educational practices. Emphasizing the need for awareness of the existence of AI, as well as the preservation of academic integrity, this research aims to provide insights to educators with a particular focus on guiding new teachers in the AI era. This will empower teachers to harness AI in a manner that still upholds academic integrity. Two research questions addressed in this study are as follows:

1. How do English pre-service teachers experience the AI-assisted teaching practicum?
2. What are the perceived benefits and challenges experienced by the English pre-service teachers during their participation in the AI-assisted teaching practices mentoring program?

Method
Research design
The primary goal of this research was to investigate pre-service English teachers' perceptions and practical experiences on AI-assisted teaching practicum, as well as its benefits and drawbacks. Thus, adopting a case study design is a suitable approach since it aims to understand how people construct meaning in an event, activity, or phenomenon (Merriam, 2010). Case study allows the researchers to capture the depth and nuance of pre-service teachers' experiences since it describes the what and how of a phenomenon, which is an object of human experience (Creswell& Poth, 2018). In this study, investigations were conducted to explore participants'lived experiences on AI teaching practicum using in-depth interviews as theprimary instrument, on which case studies rely heavily (Creswell & Poth, 2018).

Context and participants
This research was conducted at Water Heaven High School (pseudonym), a prominent state high school situated in the southern region of Indonesia. The school was selected to be the research site since it is famous for its excellent education and mentorship to pre-service teachers, particularly in English subject. The school has a strong support towards pre-service teachers' teaching practicum program (TPP). In addition, the school consistently shows interests and efforts to incorporate

technology, especially AI in their curricula. The school also actively supports teacher professional development through regular MGMP (*Musyawarah Guru Mata Pelajaran* or Subject Teacher Working Group) meetings. These collaborative sessions allow teachers to share best practices, discuss challenges and explore innovative teaching methods including the integration of AI tools in education especially in English subject. Moreover, one of the school's English teachers has been appointed by the Indonesian government as a "*Guru penggerak*" (Pioneer Teacher) who is responsible for providing specialized training for both pre-service and in-service teachers, and serving as a mentor for the implementation of new educational technologies. Due to its excellence, this school has been used as a setting for the teaching practicum program in which EFL pre-service teachers become the school's members.

Students in the English language education program are required to undergo a two-month teaching practicum program (TPP) in secondary schools (middle or high schools) as a part of their academic requirements. This hands-on experience aims to allow students to apply the knowledge acquired over five semesters on campus and gain a practical understanding of teaching dynamics in a real school setting. As part of the TPP, they are tasked with developing comprehensive lesson plans and implementing them in classrooms with actual students. Furthermore, they are required to reflect on their teaching experiences with middle school students, thereby enhancing their pedagogical insights and skills. During TPP, it is crucial for these pre-service teachers to be guided and mentored by both a school teacher and a lecturer.

The TPP involves 247 students from the English education programs participating in 48 schools across Yogyakarta, Indonesia. In this research, however, we focus on reporting three pre-service teachers' experience in AI-assisted teaching practicum who have undergone some mentoring sessions with the researchers. The first author served as the field supervisor in this school during the teaching practicum. Prior to the commencement of the study, the pre-service teachers were informed about the research and asked for their consent to participate. The three students were purposefully selected to be this research participants because they met the inclusion criteria of this study. The criteria include having experiences in using AI for lesson planning purposes, having peer-teaching experiences, and being committed to undergoing a six-week mentoring program. These criteria were set in order that the participants could provide both subjective experiences of the phenomenon and objective experiences of something in common with other people (Creswell & Poth, 2018). The three participants were sophomore students (2 females and 1 male) between 19 and 20 years of age at the time of this research. The second author conducted the audio-recorded semi-structured interview to capture the pre-service teachers' experiences.

Table 1. Demographic information of the participants

No	Name	Gender	Age	First and Second Languages	Teaching Experience	English Level
1	Yusa	Male	20	Bahasa Indonesia & English	Teaching internship	B2
2	Elena	Female	19	Bahasa Indonesia & English	Teaching internship &	B2

No	Name	Gender	Age	First and Second Languages	Teaching Experience	English Level
3	Liora	female	19	Bahasa Indonesia & English	private tutor Teaching internship & private tutor	B2

The three EFL pre-service teachers who volunteered to join the mentoring program during their teaching practicum designed lesson plans incorporating the use of AI in their teaching practice for middle school students, and they met twice a week for 100-120 minutes each. The mentoring program was conducted from 17 January 2024 – 21 February 2024.

Table 2. AI tools used

No	AI Tools	Objectives
1	ChatGPT	Finding ideas, provide feedback to lesson plan
2	Twee	Generatinglearning activities / questions
3	Copilot / Gemini	Finding sources / references
4	Quizizz AI	Generating quiz
5	Questionwell	Generating quiz
6	Invideo	Creating video-based material for listening practice

Data collection and analysis

Data were gathered from multiple sources to better understand EFL pre-service teachers' experiences and views in AI-assisted teaching practicum. They include pre-service teachers' mentoring learning logs, recorded videos of their teaching practicum, artifacts (including lesson plans & teaching materials), their reflective reports, and interviews with pre-service teachers. The mentoring program was conducted concurrently with the teaching practicum, spanning a 6-week period at the practicum school. It was designed to provide ongoing support and guidance as pre-service teachers applied AI tools in real classroom settings.

The mentoring program has served as a valuable initiative for preparing future EFL teachers to harness the potential of AI in their classrooms (Ambrosetti, 2014; Ellis et al., 2020; Hobson et al., 2012). In conducting the mentoring program for pre-service teachers effectively and meaningfully, several steps were implemented as follows: 1) establishing clear objectives & decide on the suitable AI tools, 2) maintaining regular communication between mentors and pre-service teachers, 3) providing hands-on explorations and practices, 4) providing feedback and support, and 5) encouraging ongoing professional development. Those steps are in line with Nguyen's (2017) theory of mentoring pre-service teachers with some adjustments due to the potential learning curves arising in the process which require some modification. In terms of AI, we decided to provide this mentoring program because rather than seeking to prohibit the use of AI, we supported pre-service teachers in using them "effectively, ethically and transparently" as mentioned in Hooda et al.'s (2022) study.

Table 3. Details of the mentoring program

Week	Activity	Data collected
Week 1	Pre-mentoring interviews were conducted to understand the pre-service teachers baseline	Interview & reflective reports

Week	Activity	Data collected
Week 2	knowledge and attitudes towards AI. Mentoring sessions focusing on lesson planning and how to implement AI-assisted lesson plans in the classroom. Reflective reports were maintained.	Lesson plans & reflective reports
Week 3-5	Teaching practice sessions were observed, and teaching assessments were conducted. Video recordings, learning materials, and additional reflective report were collected.	Reflective reports, teaching materials & video of their teaching practicum
Week 6	Post-mentoring interviews and a final reflective report were used for reflection and evaluation.	Interview & final reflective report

In the data collection, first, we gathered all the mentoring reflective reports that the pre-service teachers composed in English. The participating pre-service teachers were required to keep a reflective report for each session. They recorded some basic information of each session, including the dates of the mentoring sessions, length of time, and content of the sessions.

Second, all the teaching practice sessions were video-recorded, and we gathered a total of 6 recorded teaching practicum videos. They were especially helpful in understanding how the pre-service teachers implement AI-assisted teaching practices. In addition to mentoring reflective reports and session videos, we gathered pre-service final reflective reports in which they wrote about the overall content, reflections, and lessons they learned from their teaching practicum experiences as well as their teaching artifacts (including lesson plans and teaching materials).

In terms of data analysis, we analyzed the data both inductively and recursively throughout the research. A thematic approach was used in data analysis (Braun & Clarke, 2012). We analyzed the interview transcripts, participants' reflective reports, and artifacts while following the procedures of qualitative data analysis suggested by some qualitative researchers (Park & Yi, 2023). First, we read all the data and coded words or phrases that we had highlighted as "benefits" or "challenges." While constantly rereading the data, we tried to describe the connections we had identified and built themes. To enhance trustworthiness, we triangulated multiple data sources and data analyses. Informal and formal member checking took place throughout the data collection.

Findings and Discussion

In this study, the findings describe the multifaceted experiences of the pre-service teachers who had been engaged in a mentoring program to be able to implement AI-assisted teaching practicum. Through semi-structured interviews, and reflective journals, the participants shared their insights and perceptions.

Pre-service teachers' experiences on AI-assisted teaching practicum

In their first mentoring session, they expressed their initial unfamiliarity with incorporating AI into English language teaching practices. They reflected through the pre-mentoring interview, as follows:

> *Honestly, I don't know much about AI, and I have only ever tried ChatGPT once in my life.* (Liora, pre-mentoring interview, 1/17/2024)

Other participants responded quite similarly to Liora's report. More specifically, they felt they were still unfamiliar with AI tools functions as reflected in their learning logs.

> *I am not familiar with AI because sometimes I just use ChatGPT when I am stuck with my own head.* (Elena, learning logs, 1/17/2014)

> *Well, I'm only using AI tools to help me with tasks or assignments. But I think as long as we use AI to do positive things and know the boundaries, it will be really helpful.* (Yusa, learning logs, 1/17/2024)

One critical point here is that the three participants have been familiar with AI, particularly ChatGPT. However, they had not fully recognized its potential for integration into English language teaching practices. Through this mentoring program, they began to perceive themselves as educators who teach English in this technology-driven paradigm. They started to realize the myriad responsibilities a teacher must handle, which can be significantly enhanced and made effective with the strategic utilization of AI tools.

Once the goal has been firmly established, the subsequent step in the mentoring process was maintaining regular communication to offer the EFL pre-service teachers ongoing monitoring and support. Throughout the mentoring weeks, we provided hands-on experience to allow the pre-service teachers to experiment with AI tools in a safe and supportive environment. They were encouraged to try different strategies and techniques in using AI tools. They frequently asked the mentors when encountering difficulties. For instance, they noticed a discrepancy in the user interface displayed on the mentor's screen in one of the mentoring sessions on Quizizz AI. They determined to resolve the issue, proactively investigated the problem, and then together we ultimately discovered that their Quizizz account was still configured as a student account instead of a teacher account. It highlights the necessity for regular communication between mentors and mentees to troubleshoot technical issues effectively. Additionally, it emphasizes the value of hands-on exploration and problem-solving skills development among pre-service teachers. It will prepare them to navigate the potential challenges independently in their future teaching practices.

In the following weeks, the focus shifted to the evaluation of their teaching practices. They meticulously planned their lessons, utilizing ChatGPT, Copilot, and Gemini to generate ideas and locate pertinent references. They applied the prompt engineering techniques that had been taught and practiced in the mentoring sessions. Additionally, they searched for the right reading materials tailored to their students' CEFR level.
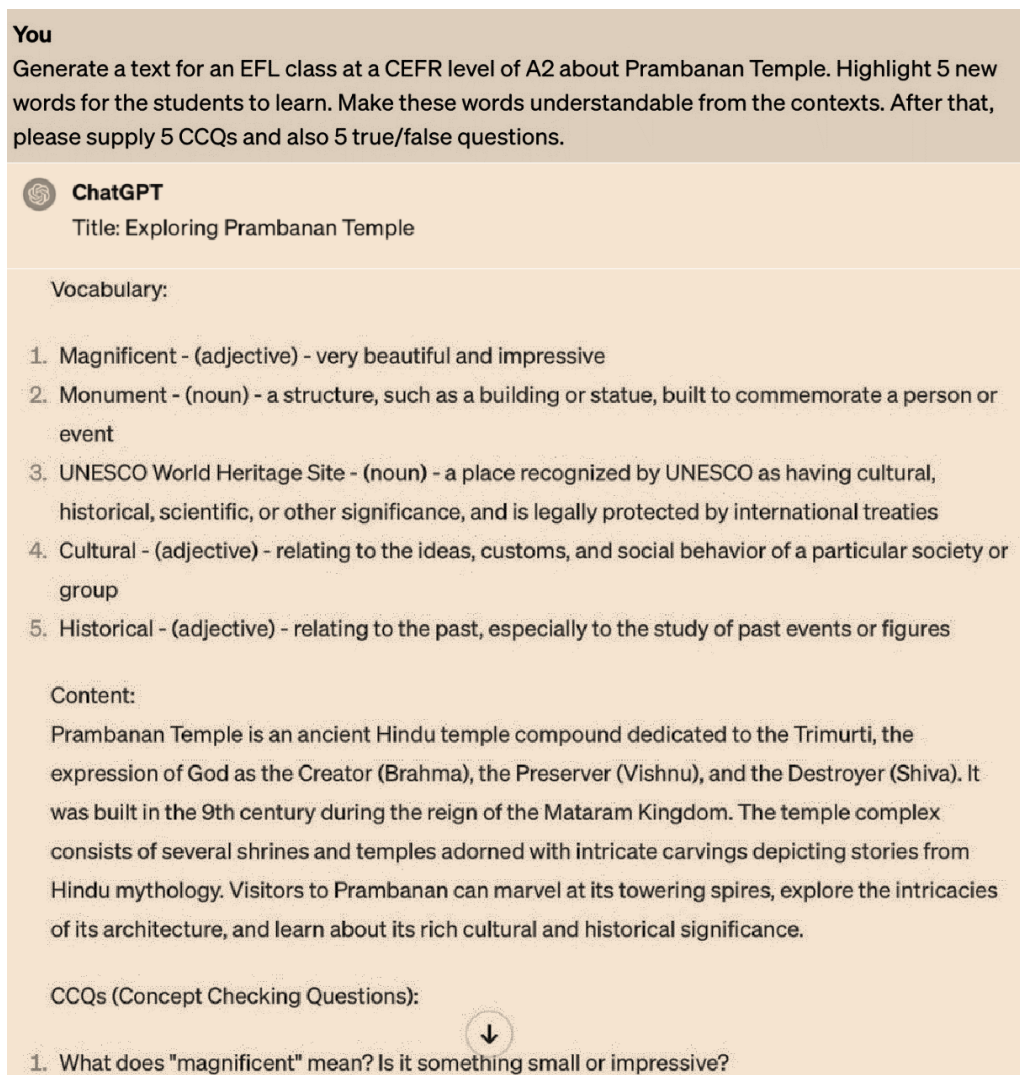
Figure 2. Prompt engineering technique applied by the pre-service teachers

The EFL pre-service teachers created their teaching materials (e.g., lesson plans, modules, decks, assessments, and assignments) to teach the local middle school students while considering learning objectives that were aligned with the standards of Indonesia's National Curriculum. The pre-service teachers developed AI-assisted materials after receiving mentoring sessions on AI. From the video-recorded teaching practice sessions, we found that the EFL pre-service teachers feel comfortable using AI in their teaching practice.

Furthermore, with the guidance of the mentors, they engaged in peer lesson observations which facilitate a dynamic exchange of insights and learning opportunities among the pre-service teachers. Then, as their teaching sessions were recorded, they also had the opportunity for self-assessment, enabling them to identify areas for growth and development. One of the pre-service teachers expressed his weakness in terms of classroom time management after seeing his own recorded teaching session, and he shared the need to ask for feedback from the AI tools.

I realized that I was still bad at managing classroom time. Sometimes, an AI tool like ChatGPT can help me suggest the right time duration I should allocate for some activities, enabling me to get the feedback right away as a new teacher. (Yusa, learning log, 24/1/2014)

Another pre-service teacher also expressed her difficulty in finding listening material with a suitable CEFR level for her students. To address this issue, she generated a text using ChatGPT which she then transformed into a video with a feature to turn text into speech, called Invideo. This tool provides innovative solutions to create engaging listening materials tailored to her students' proficiency level. The other pre-service teacher also expressed her need to consult AI tools in search of evaluating rubrics for grading students' works:

Grading students is very tiring. Even though I already made the rubric, I still found many things that need to be revised. I searched many references of rubric from Google, ChatGPT, and I also looked into rubrics that I made in 2023 when I was a coordinator of Story Telling competition […]. (Liora, reflective report, 1/31/2024)

This situation highlights how AI tools, such as ChatGPT and Invideo can serve as valuable resources for providing immediate feedback and support in areas where pre-service teachers may struggle, such as classroom time management and finding teaching resources. The evolving role of AI can enhance teacher preparation and professional development by offering personalized feedback and assistance to support novel educators in their teaching journey.

At the end of the mentoring program, mentors support the pre-service teachers by recommending professional development opportunities such as workshops, webinars, and conferences. The mentors encouraged the pre-service teachers to stay up-to-date with the latest developments of AI implementation in the language learning area. The pre-service teachers showed their enthusiasm of joining those programs as expressed in the interview in the final meeting of the mentoring program.

Yes. Of course. I would join those kinds of [professional development] programs. If I learn by myself, sometimes it's pretty challenging, so I need to participate in workshops to keep myself up-to-date. (Elena, interview, translated, 3/20/2024)

The pre-service teachers' enthusiasm for participating in the programs recommended by the mentors demonstrates their recognition of the benefits of ongoing learning and the value of professional development opportunities.

Benefits and challenges of AI-assisted teaching practicum

The findings elucidate the multifaceted implications of integrating AI tools into teaching practices. The participants reported both the benefits and also challenges that they encounter in adopting these new technologies. Benefits of AI in teaching

The overall impression of the Indonesian EFL pre-service teachers toward the AI-assisted teaching practices mentoring program was generally positive. They

reported that the mentoring program should be continued for all the parties involved, e.g., Indonesian school-aged EFL learners, local communities, and pre-service teachers in teacher education.

First, one of the most salient advantages of AI-assisted teaching practices is that AI tools can enhance their teaching methods. They expressed how AI tools have the potential to create new ways for teaching, such as generating CEFR-level-based texts, generating questions, providing feedback, and leading to more engaging and effective lessons. The use of AI tools such as ChatGPT and Quizizz AI was prevalent among the pre-service teachers, indicating a trend towards incorporating technology. The participants reported the use of ChatGPT for accessing reference materials and they used Quizizz AI to assist them generate questions for assessments. They also mentioned that it prevents them from having a "mental block":

> *I'm the type of person who needs a stimulus before ideas come. [I think I have] MENTAL BLOCK! AI helps me overcome my mental blocks.* (Liora, interview translated, 3/23/2024)

> *When I received feedback from AI, it suggested icebreaking for 2-3 minutes. So, that's the most impactful in my teaching practice.* (Yusa, interview translated, 3/23/2024)

> *I used GPT to find activities and the types of questions I should use. I got ideas from GPT: incomplete sentences, matching, true/false, etc. And it really enhanced my teaching performance. Quizizz AI could also help me generate questions with pretty good distractors in the options, though as teachers we still need to check the accuracy.* (Elena, interview translated, 3/23/2024)

The second benefit the pre-service teachers reported is that AI increases efficiency. Initially, they expressed their desire to pursue a career as a teacher. However, as they delved deeper into the profession, they realized the myriads of responsibilities that a teacher should have. In this case, AI provided significant assistance to finish their tasks more efficiently. It was expressed in the interview as follows:

> *I want to become a teacher because I come from teachers family. I enjoy preparing materials, speaking, and teaching. But the administrative aspects feel complicated. AI can assist me in making it more manageable and efficient.* (Elena, interview translated, 3/23/2024)

> *Before using AI, I need to spend hours in front of my laptop to find suitable learning resources for my students. Now, the preparation time can be cut down making it more efficient and I can focus on something else that needs my attention.* (Liora, interview translated, 3/23/2024)

As the pre-service teachers embrace AI to optimize their workflow, they may also experience professional growth and development. By freeing up time previously spent on resource gathering, pre-service teachers can redirect their efforts toward other important tasks, such as student support which will ultimately enhance the quality of their instruction delivered to students.

Another benefit that AI tools can offer is that AI provides access to vast amounts of educational content and resources. Beyond ChatGPT 3.5 whose accuracy may be uncertain, other generative AI such as Gemini and Copilot provide a wider array of resources to explore. This enables pre-service teachers to delve deeper into the information and verify its accuracy. It will ensure the reliability of the resources they utilize in the class.

> *When I made the second lesson plan, I used GPT and Copilot, but Copilot is better. I asked for feedback on the lesson plan. Copilot can provide detailed activities from minute to minute [...] Also, I can further explore its sources to ensure the validity of the content.* (Yusa, interview translated, 3/23/2024)

Figure 3. Sources provided by Copilot

The availability of multiple AI platforms such as Copilot and Gemini enables pre-service teachers to cross-reference information. This will foster a sense of reassurance in the reliability of the resources utilized in the classroom and promote an evidence-based approach to teaching. This also implies that pre-service teachers engage in collaborative practices with technology, enabling AI tools as co-teachers which ultimately benefit the teaching profession as a whole.

Challenges of AI-assisted teaching practices

Besides the benefits, the pre-service teachers also reported some challenges they encountered when incorporating AI into their teaching practices. They includes the learning curve, the fear of overreliance, and ethical considerations. In the end, the pre-service teachers reported their expectations toward AI integration in education.

The first challenge is the learning curve. Learning curve refers to the process of acquiring new skills or knowledge over time whether in academic pursuits, professional endeavors, or mastering new technologies. The learning curve concept is often used to describe the trajectory of skill development since it represents the relationship between the amount of time and effort invested in learning and the level of proficiency attained. Liora reported experiencing an unstable learning curve indicating that sometimes she has rapid progress in understanding, but in other times her learning curve flattened out suggesting that further gains require more effort or time. She reported it in the interview:

Learning [to use AI tools] takes time. There are some AIs that don't click with me. So, I often use experiments with some AI tools because I need references for many things. (Elena, interview translated, 3/23/2024)

In the same vein, Liora also shared the same concern:

I need more time to understand how it works. I need to get used to it. Things I need to learn again is prompting. (Liora, interview translated, 3/23/2024)

Elena's approach of experimenting with different AI tools highlights the importance of hands-on exploration in overcoming challenges posed by the learning curve. The learning curve experienced by pre-service teachers like Elena and Liora need to invest considerable time and effort to become proficient users. This suggests that institutions should allocate sufficient resources for training and professional development to support new teachers in navigating this technological era effectively.

The next challenge, the participants also expressed their fear of overreliance on the use of AI tools which potentially leads to losing their sense of creativity in teaching. Yusa mentioned that he should be more advanced than AI in the interview:

[...] We need to avoid dependence on AI. We should be one step ahead from AI. Otherwise, we have no place in the industry. (Yusa, interview translated, 3/23/2024)

This concern from the pre-service teacher to become overly dependent on AI actually shows a positive mindset. Yusa's sentiment highlights the importance of maintaining humans' unique abilities to innovate, adapt, and think critically. By maintaining a positive balance between technological innovation and human expertise in thinking, pre-service teachers can harness the full potential of AI while upholding the core principle of effective and meaningful education.

The pre-service teachers' awareness of the potential risks and pitfalls associated with AI tools also affected the awareness of ethical considerations and responsible use of technology in education. Elena and Liora expressed their concerns about this ethical consideration in the interview:

AI is easily accessible now. Many people can use it and will possibly commit in academic misconduct. AI needs filters that will limit the use of AI, for example AI can be used only by professionals and not by students. (Elena, interview translated, 3/23/2024).

People don't immediately grasp knowledge from AI. They need to verify every single piece of information generated by AI. (Liora, interview translated, 3/23/2024).

This implies that pre-service teachers are mindful of the ethical implications of AI integration and try to seek a balance between leveraging technological tools and preserving human-centered education. They should practice their critical judgment to ensure that all pieces of information are valid and reliable and education will not lose its human touch.

Discussion

This case study explored two research questions: (1) How do English pre-service teachers experience the AI-assisted teaching practicum? (2) What are the perceived benefits and challenges experienced by the pre-service English teachers during their participation in the AI-assisted teaching practices mentoring program? To thoroughly understand the issues, we discuss our findings in relation to previous studies which have led to the implications for further research and pedagogical practices.

First of all, the pre-service English teachers experience unfamiliarity on how to incorporate AI tools in their teaching performance. Despite having some exposure to AI tools like ChatGPT, their understanding of its potential to be integrated into English language teaching remained limited. This also aligns with the study conducted by Wulyani et al. (2024) which reveals that while the participants had a foundational understanding of AI, many admitted to being unfamiliar with specific AI tools, indicating a need for increased education and awareness about AI. Pokrivcakova (2019) emphasizes the need for teacher training in AI-powered CALL tools since it enhanced personalized learning, flexibility in teaching, and management efficiency. It also facilitated teacher identity construction and helped improve their teaching-related skills (Park & Yi, 2023). As shown in the pre-service teachers' interviews and reflective reports, interacting with local EFL middle school students influenced the EFL pre-service teachers' negotiation and development of teacher identity. They were encouraged to continue their career as teachers despite their myriad responsibilities. Therefore, they realized that they needed some assistance from AI tools so that they could address their learners' needs. This is contrasting to the traditional "one-size-fits-all" approach where all students in a class receive the same materials. As previous study (Costello, 2005) revealed, the mentoring program turned out to be an important "rehearsal" space (Tseng, 2017, p.47) where pre-service teachers practiced teaching pedagogies and began to negotiate their teacher identities.

The pre-service teachers, after receiving some mentoring sessions, demonstrated increased familiarity with AI tools and showed more confidence in implementing AI-assisted teaching practicum. However, they said that continuous guidance is still needed. Active collaboration between the pre-service teachers and theirsupervisors was required to decide the types of AI tools to be utilized in the learningpractices. As seen in the interview and reflective report, the mostly used AI tools wereChatGPT and Quizizz AI. Koraishi (2023) reported that there are two main areas inwhich AI can help concerning classroom instruction, namely material developmentand assessment. Regarding material development, ChatGPT can be employed to streamline the process of creating engaging and contextually relevant resources forindividual learners. It can generate tailored text passages to customize materials according to the students' needs. ChatGPT can also provide tips and suggestions toenhance the quality of the generated content, such as suggesting the allocated timeto complete certain classroom activities as reported by Yusa. The ability to use prompts effectively, which Koraishi mentioned as "prompt engineering", is crucial to leverage the capabilities of AI to create tailored resources and personalized feedback.

In terms of assessment, Quizizz AI offers the potential to streamline the evaluation process. Quizizz AI can generate questions based on texts or prompts

provided. By providing real-time, personalized feedback, Quizizz AI can assist pre-service teachers in offering timely and constructive feedback to learners, ultimately enhancing their language proficiency. It is important to note that while ChatGPT and Quizizz AI show promising assistance in these two areas, we should still acknowledge the lack of accuracy in the content they generate. Therefore, teachers' expertise is still needed in these areas to check content accuracy and validity. OpenAI, the creator of ChatGPT, has provided helpful guidance for educators and students. Despite the plausible and well-written answers, AI tools frequently unreliable and cannot be relied upon for factual accuracy. For instance, sometimes they also fabricate well-formulated citations. Therefore, it is important to always hone our critical thinking while making use of AI tools.

In addition to sharing their experiences, the pre-service teachers also highlighted various benefits and drawbacks in their teaching practicum, as documented in the interview and reflective journal. They mentioned that teaching is a demanding profession. Teaching is regarded as one of the most demanding professions across various cultural settings. It has consistently exhibited a higher level of burnout among teachers compared to professionals in other human service fields (Johnson & Birkeland, 2003; Salovita & Pakarinen, 2021). Therefore, integrating AI can optimize teaching planning, refine resources, and help with assessments. The most salient advantage as seen in the data was how AI can help pre-service teachers gain efficiency in preparing their teaching performance. The efficiency gained through AI integration may also contribute to mitigating "teacher burnout" (Hashem et al., 2023) and enhancing well-being in the profession, convincing them to continue this teaching profession as their future career path. Aligned with the British Council's report on the use of AI (Edmett et al., 2023), this study emphasizes on balanced use of AI in order to achieve educational reform in this VUCA world.

Meanwhile, the most concerned challenges reported in the data encompassed ethical consideration and overreliance. AI integration indeed raises ethical issues such as data privacy, transparency, and academic misconduct such as cheating and plagiarism. In light of this, it is crucial to mitigate this issue by balancing technological use with human judgment (Pokrivcakova, 2019; Wulandari & Pasaribu, 2020). In the same vein, relying too heavily on AI tools can risk overlooking the complexities of human learning which cannot be replicated by AI. To address these challenges, establishing clear policies and ongoing professional development training on AI uses and risks to ensure responsible usage in the classroom is highly needed. Additionally, one of the participants also suggested that AI companies should restrict their platforms' accessibility, allowing only responsible users to utilize AI tools, while ensuring that students who are still in the learning process are not granted access. This recommendation stems from the face that AI has become increasingly accessible which potentially leads to misuse or unintended consequences among inexperienced users. By maintaining a positive balance between technological innovation and human expertise in thinking, pre-service teachers can harness the full potential of AI while upholding the core principle of effective and meaningful education.

Conclusion

Data from interviews, reflective reports, and collected artifacts revealed numerous benefits of the AI-assisted teaching practices for pre-service English teachers, such as: 1) enhancing their teaching methods overcoming mental blocks, 2) improving efficiency and workflow optimization, 3) providing access to vast amounts of educational content and resources. However, challenges were also identified, including 1) concerns about overreliance, 2) ethical considerations, 3) AI's potential to provide fabricated and misleading content. While AI offers transformative potential in education, thoughtful consideration, ongoing professional development training, and ethical awareness which are essential to maximize its benefits in education. By addressing both benefits and challenges, pre-service teachers can navigate this technological landscape effectively.

This study has some limitations and therefore recommendations are proposed based on the limitations. First, this study focused only a single context which may limit the generalizability of the findings to other settings. Therefore, future research should include a diverse range of contexts and settings, for instance expanding the study to multiple institutions or regions to provide more comprehensive understanding of the impacts of AI integration in EFL teaching practices. Additionally, this study did not delve deeply into the most effective strategies for integrating AI into pedagogical practices. Thus, further investigation into pedagogical integration can be conducted to explore the most effective strategies for integrating AI into pedagogical practices, especially in the context of English language learning.

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