
| RESEARCH ARTICLE

Pre-service English Teacher Perceptions of AI in Writing Skills

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| ABSTRACT

The rapid growth of artificial intelligence (AI) technology has had a big impact on a lot of industries, including education. The use of AI tools in language education and instruction has the potential to improve students' academic performance and writing abilities. The purpose of this study is to investigate how pre-service English teachers perceive the application of AI to writing tasks. The objective of this research is to discover students' perceptions, discover students' difficulties, and figure out students' reasons. Some insights were collected from individuals who have experience using AI for writing assignments. The data was collected using a qualitative case study design. The data was collected from a questionnaire and an interview. It was then analyzed using narrative analysis. The results of the study are intended to shed light on the advantages, difficulties, and motivations for the use of AI in academic writing. It also offers insightful information to teachers and other organizations looking to use technology to improve language acquisition. This study implied a perception of the student writing assessment using AI for these pre-service English teachers in the future.

| KEYWORDS

Artificial Intelligence, English Language Teaching, Academic Writing, Writing Skills.

| ARTICLE INFORMATION

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1. Introduction

Artificial intelligence (AI) has become a major trend nowadays. As the field of AI continues to evolve rapidly, it is crucial to establish a comprehensive definition encompassing its multifaceted nature and applications. One definition from Rukiati et al. (2023) emphasizes intelligent machines with a focus on human intelligence; the other defines computer systems' specific capabilities to mimic human intelligence through tasks such as pattern recognition, natural language comprehension, decision-making, and problem-solving. These definitions highlight the complex nature of AI and its potential applications in a variety of areas, including education, such as writing classes, language acquisition, and beyond. Exploring these various definitions and applications helps to obtain an improved understanding of the changing environment of artificial intelligence and its impact on society, according to research from Sumakul et al. (2022).

The integration of AI technology in English language teaching has enormous potential to alter the educational landscape. There are three paradigms. As Ouyang and Jiao (2021) establish in the first paradigm, learners are the clients of AI services, which are used to represent and guide cognitive learning under the impact of behaviorism. In the second paradigm, where learners cooperate with AI, AI facilitates learning with theoretical underpinnings in cognitive and social constructivism. According to the third paradigm, which is founded on connectives, artificial intelligence (AI) enhances learning, gives students agency over their education, and increases their intelligence through a system's ability to collaborate synergistically across various entities, including the student, the teacher, information, and technology. According to this worldview, AI encourages innovation, adaptability, and

critical thinking. In addition to encouraging a sense of autonomy and self-directed learning, it makes it easier to create personalized learning pathways catered to each person's requirements and preferences. AI also makes it possible for varied viewpoints and resources to be effortlessly integrated, enhancing the learning environment and encouraging holistic growth. In the end, the third paradigm reinterprets education as a cooperative effort in which artificial intelligence (AI) acts as a dynamic facilitator of learning and exploration, assisting students in reaching their full potential in a world that is becoming more complicated and interconnected by the day.

Some benefits of AI within the field of English Language Teaching (ELT), where AI-driven tools have demonstrated AI transformative potential in enhancing language learning outcomes and instructional methodologies (Mushtoha et al., 2023). Hence, AI can be one of the solutions that can help students learn languages. Intelligent tutoring systems and various kinds of AI have shown promise in improving language learning outcomes by providing learners with personalized training and instant feedback (Bibault & Xing., 2021). AI has the revolutionary power to improve admissions procedures, assist students in their studies through individualized learning experiences, and drive advancements in tutoring programs by providing targeted assistance and support. These technologies not only provide immersive learning experiences but also improve access to quality education. Marzuki (2023) expresses that AI has the potential to transform admissions procedures, assist students with their studies, and drive breakthroughs in tutoring programs. Integration of artificial intelligence (AI) into educational delivery systems can significantly enhance efficiency and effectiveness in teaching. A study by Zhai (2023) exposed that AI can increase educational delivery efficiency and effectiveness by tailoring teaching methodologies, providing timely feedback, and automating administrative activities. Using AI for writing can also help students improve their logical thinking skills, notably in assembling their ideas and thoughts. Research from Aladini (n.d.) investigates' students' development of their logical thinking and academic writing abilities through the use of AI apps for long-term skill effects.

Several studies on the use of AI in ELT have been conducted by researchers. There are three positive points about students' impact on AI as a tool for learning English outlined by Sumakul et al. (2022): it can help students understand theoretical concepts more effectively, and AI tools act as a supportive companion while being able to offer real-time feedback based on guidance. The first positive AI in ELT is understanding theoretical concepts; according to (Garcia & Thompson, 2022), AI's contribution to the understanding of theoretical concepts is very diverse, including enhanced visualization, personalized learning, sophisticated data analysis, and interdisciplinary integration. By turning abstract ideas into interactive and understandable formats, adapting educational experiences to individual needs, uncovering hidden patterns in data, and bridging knowledge between fields, AI revolutionizes the way we interact with and understand theoretical knowledge. As AI continues to evolve, its role in education and research is likely to expand, offering more innovative ways to address the complexity of theoretical concepts. The synergy between human intelligence and artificial intelligence promises a future where learning and discovery are limited only by our imagination. The second positive AI for ELT as a tool for supportive companion Implementing modern techniques in digital literacy significantly enhances learning in higher education, providing students with critical skills that extend beyond the classroom. These contemporary approaches not only foster a deeper understanding of academic content but also empower students to refine their academic writing capabilities. By engaging with digital tools and resources, students learn to navigate and synthesize information effectively, leading to improved research and communication skills (Htaw et al., 2022). Furthermore, these enhanced writing skills are highly transferable, equipping students with the proficiency needed to excel in various professional environments. As a result, the integration of digital literacy into higher education curricula plays a vital role in preparing students for the demands of the modern workplace. And the third positive point is that AI tools can provide real-time feedback to students based on research by (Huang et al., 2023). Students can turn in their answers to reading activities, and the applications and platforms are going to score them and offer feedback for improvement. Students can immediately realize their strengths as well as their weaknesses in reading comprehension with the use of this feature, which can be quite advantageous.

As has been mentioned in several studies, many students are familiar with the use of AI, which is a promising tool for ELT. In the field of language education, AI has emerged as a force in changing the way of teaching or transforming from conventional to modern, which highlights students' challenges in writing English. Providing a study from (Zhao, 2023) learners with appropriate alternatives for their written works, the AI-assisted language learning tool made this technique more advantageous than traditional writing training. Kawinkoonlasate (2021) expressed that hurdles are in the form of sentence structure, word choice, vocabulary, and paragraph organization. The use of AI in academic writing is especially useful for giving feedback; it is used to identify language styles. Students can refine their writing skills and achieve better results. In addition, the development of AI and technology has a great impact on the approach to teaching English and writing skills. Htaw et al. (2022) highlighted the combination of AI, technology, and language learning. There is a system that can automatically correct a writing resource called Automatic Writing Feedback; hence, AWE from this system, According to (Hussein et al., 2019), sometimes can offer further, more detailed feedback integrated with those tools. This integration goes beyond traditional approaches and engages students in a dynamic and interactive environment. However, from this research (Alharbi, 2023), AWE presents a significant risk to L2 students since they are

attempting to solve problems in a language they are still developing and using a foreign instrument, which results in feedback they must comprehend and act upon.

Besides that, the AI-powered platform provides adaptive content, real-time assessment, and personalized guidance. Learners engage with language in context, promoting deeper understanding and practical application. Furthermore, Su et al. (2019) advocate the introduction of AI into English composition classes in higher education. This step is more than just integration. It strongly connects teaching and learning. AI stimulates learners' internal motivation by creating new ways of writing in a second language. This will fundamentally improve the quality of English education and harness the power of information technology. In short, AI will revolutionize language education, helping learners navigate complex writing, engage with dynamic content, and develop language skills. On the other hand, Rukiati et al. (2023) focused on the importance of integrating AI technologies into ELT practice. From all the previous studies that have been mentioned earlier, few studies investigate student perceptions of using AI. Therefore, this study will focus on investigating student perceptions of using AI for academic writing. This study has three main purposes. Find out student perceptions of AI for academic writing, discover student difficulties in using AI, and figure out student reasons for using AI in academic writing.

2. Methodology

This study uses an exploratory case study design that aims to investigate real life, individual insights, and different situations by carefully gathering data from many sources Yin (2018). This method is related to the purpose of research that tries to investigate Pre-service English teacher perceptions of AI in writing skills. This research qualitatively illustrates the perception of pre-service English teachers in using AI for writing activities, which, in the end, is to be used by pre-service teachers in a private university in Cirebon. The participants are recruited intentionally based on several criteria. The criteria are the students have distant knowledge about AI, can run and use AI in writing, have graduated from an academic writing course, and agree to participate in this research voluntarily. Based on the criteria, six participants from a private university were selected.

Table 1. Participant Demology

No	Participants	S1	S2	S3	S4	S5	S6
1.	Gender	Female	Female	Female	Male	Female	Female
2.	Age	22	21	21	21	22	22
3.	Institution	Private University	Private University	Private University	Private University	Private University	Private University
4.	Experience in using AI	3 Years	3 Years	3 Years	3 Years	3.5 Years	3.5 Years
5.	Writing Proficiency	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate

After the consent form was sent to each participant, they were asked to write a 500-word essay without using AI. In five days, they were asked to write an essay on the same topic with the help of AI. Afterward, they needed to write a reflection about their experience using AI. They were also interviewed, so the data is more valid. Their reflection and interview results become the main data of this research. Then, the data was analyzed using narrative analysis to examine the qualitative data. After the data was analyzed, it was categorized based on its classification. The data will answer these questions:

1. What are the pre-service English teachers' perceptions of using AI for writing?
2. What is the reason pre-service English teachers use AI for writing?
3. What are the difficulties pre-service English teachers use AI for writing?

3. Results and Discussion

The study aimed to examine how pre-service English teacher perception of artificial intelligence (AI) can support students writing activities. There are three topics of discussion: (1) The pre-service English teachers' perceptions of using AI for writing, (2) Pre-service English teacher's reason's using AI for Writing, and (3) The difficulties of pre-service English teachers' using AI for writing.

3.1 Pre-service English teacher perception of using AI for writing skills in academic writing

All participants generally reveal positive perceptions towards using several AI applications in their writing class. In terms of its use, all participants agreed that the AI application was easy to use.

3.1.1 Advantages of using AI based on participants perceptions

The data that has been collected shows that participants experienced some advantages of using AI. Among others are providing many references, saving time in writing, helping to check grammar accuracy, and providing various vocabulary.

Table 2. Following is the result table of the advantages of using AI

No	Advantages of AI	Participants
1	AI offers many resources for writing.	S1 (F), S2 (M), S3 (F), S4 (F), S5 (F).
2	AI can help participants to save time.	S1 (F), S2 (M), S4 (F).
3	AI can check grammar accuracy.	S1 (F), S5(F).
4	AI can provide various dictions.	S2 (M).

The first advantage is that AI easily offers many resources for writing tasks. Using AI as an assistant to help with writing activities is very profitable because it can help find material quickly; the participants said they only needed to type the commands, and the participants got the result. They claimed that using AI was as easy as using Google or Bing. The result is in line with (Lin & Chang, 2023), who also found that AI-supported offers valuable perspectives on the research subject. It serves as a crucial resource for researchers who are targeting the investigation and enhancement of the present knowledge database in artificial intelligence and information processing. However, using AI is faster than Google. The participants didn't need to filter the material.

S1 (F): using AI can provide an example of data that can be made as a reference paragraph for writing the data.
 S2 (M): AI can help my writing with different vocabulary and extensive source material.
 S3 (F): easily provide the writing source.
 S4 (F): especially if I don't have any ideas or am stuck can provide topic recommendations.
 S5 (F): providing suggestions for content.

The second advantage is that using AI can help the participants save time. Therefore, the participants can save time looking for specific materials for their tasks because AI can provide many relatable materials. By using AI, participants no longer need to wait or choose a website; AI can enter itself with fast results. This result is in line with Yang & Kyun., (2022), who assert that AI support has the potential to save time and be a useful tool for motivating learners.

S1 (F) & S2(M): make our tasks easier and more efficient.
 S4 (F): AI also saves time in writing.

The third advantage is that AI can help check the accuracy of the grammar in participants' writing. For pre-service English teachers, AI provides accurate grammatical suggestions. That is very useful, especially in writing. Božić & Poola., (2023) also found that by evaluating their writing style, AI can be used to assist them in developing their writing skills.

S1 (F): with AI, we can check our grammar.
 S5 (F): AI providing suggestions for grammar.

The fourth advantage is, that AI can provide various dictions. Pre-service English teachers need a lot of vocabulary to assemble sentences to write. With a lot of various vocabulary in writing, the result is better, and AI provides various kinds of vocabulary that we can choose from, which is good for writing results. This result is in line with a study from Božić & Poola., (2023); they state that using AI can be one of the alternatives to enrich participants' vocabulary.

S2 (M): AI can help my writing with different vocabulary.

From the data above, many advantages can help write using AI, such as those that have been found that AI can find the material that the author needs to support their writing activities, provide information, and also the references and the information you are looking for can be generated quickly using AI. The data findings also say save time in writing because AI can contain a lot of information that you need for the author quickly without waiting long looking for pages in the book and looking for a website; if a website, everything is packaged in the AI and of course as an assistant can help check the grammar accuracy of writing like the data above pre services teacher needs an assistant, but now it can be with AI which can all to support their activities and AI can also have the vocabulary of the author's writing more meaningful and at least make the writing not wrong for readers.

3.1.2 Disadvantages of using AI based on Participants

Other than the advantages, the participants also found some disadvantages in AI for writing, and the data also found 4 disadvantages, which are AI should be subscribed, it needs stable internet connections, it is vulnerable to plagiarism, and it makes some participants lazy to think.

Table 3. Following is the result table of the disadvantages of using AI

No	Disadvantages of AI	Participants
1	AI should be subscribed.	S2 (M).
2	AI needs stable internet connections.	S2 (M).
3	AI easily vulnerable to plagiarism.	S3 (F), S4 (F).
4	AI makes participants lazy to think.	S5 (M).

The first data finding disadvantage is AI should be subscribed for pre-service or a student using facilities is very helpful to support a learning activity or create a work, but some of them will be reluctant to pay or heavy to pay; indeed, the price for the subscribed are too expensive for them. As a result, they can't take advantage of using all AI's features. This result is in line with the study from (Chhaya et al., n.d.), which asserts that AI runs through paid a lot of money for premium features.

S2 (M): It requires a subscription, which is not affordable for some students.

The second data finds that one of the drawbacks of using the internet is the need for stability of the internet; using AI is very practical, simple, and efficient, but it all requires a very stable internet connection. AI will quickly generate information, or whatever we are looking for, and needs will be hampered if the internet connection is very slow indeed; what we know is that using AI can be anywhere and anytime, but it all cannot be felt by students whose houses are still in the interior of the village and cannot be reached by the internet is not like in the city where wired Wi-Fi is installed in their home and their smartphone internet signal is fulfilled and the data shows that someone feels Things like that are connection problems when using AI for writing and this result in line with the study from (Jaynes et al., 2023) since artificial intelligence (AI) depends on the Internet of Things (IoT) to manage the enormous volumes of data it needs to operate, dependable Internet connectivity raises several ethical concerns for countryside and mountain populations.

S2 (M): It's requiring a stable internet connection.
S6 (F): Not going well in my home in the village because not have a stable internet connection.

The third disadvantage of AI for writing data AI is very vulnerable to plagiarism. Almost all participants agree that writing using AI is close to plagiarism because AI provides information on materials and resources that are needed and can be found quickly as a writer sometimes want the easiest way, so they don't fill out the source because AI-based on being an assistant is not the first role requires very detailed accuracy to use it and this result in line with the study from Y. Xiao, S. Chatterjee and E. Gehringer (2022) They discovered that these AI-based techniques, which are frequently used to identify plagiarism in academic settings, are vulnerable to attacks.

S3(F): Vulnerable to plagiarism.
S4 (F): Must check the source materials to avoid plagiarism.

The last disadvantage of AI for writing is that it makes some students too lazy to think. Concerns have been raised that the participants may become passive consumers of information rather than active learners. They state that they are growing too dependent on AI, which makes them less likely to use critical thinking. This result is in line with the study from (Chhaya et al., n.d.), which emphasizes that AI can make younger generations lazy.

S1(F): AI makes humans lazy to do critical thinking.
S3 (F): Make me lazy to search for source material and think.

Although AI offers a lot of advantages to help participants offer an innovation of ease and efficiency for academic writing, some shortcomings of AI can be detrimental to writers that must be faced such as being able to drain budget to subscribe to AI and the stable internet needs a lot of money that must be spent and is vulnerable to plagiarism if not doing self-filtering and most importantly the context of accessibility, ethics, and the development of critical thinking skills for the author.

3.2 Pre-service English teacher reasons for using AI for Writing

Participants reported concern about why they use AI for writing activities. Several participants mentioned that AI could help them in their writing activities, such as grammar corrections and providing vocabulary and generative ideas. In line with a study from Božić & Poola., (2023), by evaluating a student's writing style, making suggestions for changes, and offering comments on grammar, punctuation, and spelling mistakes, ChatGPT can be used to assist students in developing their writing abilities.

S6 (F): because it is simple, practical, saves time, and the wording is correct, it is very helpful.
S4 (F): I think that using AI is more efficient and reduces the time for editing and brainstorming.

Based on the research result, participants responded with their reasons for using AI. Some AI applications are easy to use and provide a lot of benefits in their writing activities. Furthermore, Artificial intelligence AI can help with data management by efficiently and significantly more quickly evaluating and summarizing enormous amounts of data than humans can. This strategy enables students to commit more time to challenging assignments.

3.3 Pre-service English teachers perceived difficulties using AI for writing activities

All participants, consisting of 6 participants from a private university in Cirebon, have reported their concerns about the difficulty of using AI in writing activities. AI is based on an application in a device, and of course, there are many variants in the application when accessing one of the applications. It will certainly be different from some applications that can be accessed, but all participants have seen using it for a long time, so they can answer the difficulty of using AI in writing activities. Some AI applications are not too convenient to use if they aren't subscribed. Based on our research, most of the difficulties are how many AI applications often give the right answers from what we ask and command, so they need more effort to be more thorough, especially if we have to pay a certain amount of money so that the application opens all the features provided by the AI application developer and if using it alone does not pay to open all the features, the results we get will not be optimal because it is limited to every sentence and most importantly some AI applications will also provide the answer limit that we want.

S3 (F): Yeah, because AI sometimes writes things that don't match the title and are not necessarily accurate. So, I just use it to help come up with writing ideas.
S4 (F): Of course, the paid one and the limitation for minimal sentences.

Concerns about the use of AI in writing activities include the possibility of inaccuracy. These tools may struggle with semantic and contextual understanding, which may lead to faults in the text that range from small grammatical mistakes to serious misinterpretations of the intended meaning. Furthermore, biases in the training data could affect the material that AI produces, resulting in influenced viewpoints or incorrect conclusions. For instance, according to Taecharungroj (2023), a considerable proportion of users express dissatisfaction with the accuracy, bias, and lack of the capabilities of AI responses.

5. Conclusion

The findings of this study underscored the overwhelmingly positive reception among pre-service English teachers toward the integration of AI in writing activities. A majority expressed excitement and ease in utilizing AI, noting minimal system errors. However, approximately half encountered challenges in effectively leveraging AI for writing tasks, often due to discrepancies between desired outcomes and available resources, alongside dissatisfaction with associated costs. Notably, a significant proportion favored the AI application, citing familiarity and no upfront expenses. Its accessibility and efficiency were highlighted as advantages. The use of AI markedly facilitated writing processes, streamlining research and eliminating the need for extensive source searches. Nonetheless, device compatibility issues and the need for occasional content filtering were acknowledged. Awareness in this regard is essential to prevent erroneous outcomes. Overall, AI serves as a practical and efficient resource for pre-service English writing, offering invaluable assistance in academic settings.

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