

Research Article

The Role of ChatGPT in Writing Performance: A Review of Recent Studies

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Abstract

Learning in the digital era has been influenced by the technological revolution, including the use of artificial intelligence (AI). One innovation in this regard is the use of ChatGPT as an AI-based platform to support the writing process. The purpose of this study is to identify and analyze recent findings regarding the use of ChatGPT in supporting the writing process, as well as to evaluate the contribution of ChatGPT in improving the quality and efficiency of writing performance in various contexts. The research approach used was a systematic review of recent studies conducted using meta-analysis. The findings of this study show that the use of ChatGPT contributes significantly to improving writing skills, time efficiency, and the creative process of writing. The implication of these findings is the importance of integrating ChatGPT in writing education to broaden and deepen the understanding of language as well as the creative writing process, but it is also necessary to note the limitations and concerns regarding the use of ChatGPT in educational contexts.

Keywords: ChatGPT, writing education, artificial intelligence, time efficiency, writing skills



INTRODUCTION

English Language Learning in the digital age has been heavily influenced by technological revolutions and innovations. One such type of innovation is the use of artificial intelligence (AI) in education. There are many types of AI that can assist English language learning (Arbi, 2024). In this instance, ChatGPT emerges as examples of AI-based platforms designed to assist individuals in their English learning process especially in writing activities. A chatbot system called ChatGPT is capable of producing highly original and coherent academic writing, such as essays, manuscripts, and scientific papers (Quintans-Júnior et al., 2023). ChatGPT has the potential to streamline the writing and reviewing process (Munawar et al., 2023). ChatGPT has the ability to produce writing quickly and accurately. An experiment conducted by Setiawan & Luthfiyani, (2023), showed that this AI was able to produce about 693 posts in less than 10 minutes. This shows that ChatGPT can demonstrate high productivity and efficiency. In addition, ChatGPT is able to provide quick feedback and evaluation (Subiyantoro et al., 2023). With its effective evaluation capabilities, ChatGPT can improve the quality of writing and speed up the revision process. As a result, writers can save the time and effort needed to improve their written work. In addition, the AI's ability to evaluate writing can be used as a support tool for learning.

The purpose of this study is to identify and analyze current findings on the use of ChatGPT in supporting the writing process, as well as to evaluate the extent of ChatGPT's contribution in improving the quality and efficiency of writing performance in various contexts. It is hoped that the results of this study can provide a deeper insight into the potential of ChatGPT in supporting writing activities, so that it can serve as a foundation for further development in this field.

Recent studies have explored the impact of ChatGPT on writing quality, time efficiency, and the creative process (de Vicente-Yagüe-Jara et al., 2023; Mohammed, 2023; Mohammad et al., 2023; Oh, 2023). ChatGPT has shown significant benefits in enhancing writing skills, language competency, and productivity among students. It has been found to improve self-efficacy for task resolution and enhance the quality, elaboration, and originality of solutions in creative problem-solving tasks. However, there is still a gap in the understanding of the extent to which this technology contributes to improving writing quality, time efficiency, and the creative writing

process. Therefore, this study is expected to fill the gap by summarizing the latest existing findings and providing a comprehensive picture of the role of ChatGPT in writing performance.

The uniqueness of this research lies in the systematic approach taken in collecting and analyzing related scientific literature. By using an in-depth literature search technique, it is expected that this research can make a significant contribution in understanding the potential and limitations of using ChatGPT in supporting the writing process (Kaliyadan & Seetharam, 2023). The justification for this research lies in the urgency to better understand how technologies such as ChatGPT can be optimally utilized in improving the quality and efficiency of the writing process, which in turn can have an impact on various fields such as education, research and the creative industry (Gabashvili, 2023).

RESEARCH METHODS

Research Design

A systematic review is a review that uses existing studies that have been used by other researchers in a systematic and qualitative way to obtain an understanding of something (Retnawati et al., 2018). This study used a systematic review approach to investigate the role of ChatGPT in supporting writing. A meta-analysis was conducted to collect, assess, and synthesize findings from previous studies in the relevant literature.

Research Object

The object of this research is studies and scientific articles related to the use of ChatGPT in supporting the writing process in various contexts.

Instruments

This research instrument is relevant scientific literature found through various academic databases from other sources of information.

Data Source

Data were collected from published studies or scholarly articles. The main data sources were scientific journals, conferences, and other academic publications.

Data Collection Procedure

Data collection techniques involved a systematic search and analysis of relevant scientific literature. The researcher searched for articles using keywords related to the use of ChatGPT in supporting the writing. This technique includes searching in

databases such as Google Scholar, PubMed, Scopus, and other reference sources.

Data Analysis

Steps of data analysis if this study are:

1. The researcher identified and collected studies, articles and resources relevant to the research topic by searching academic databases, scientific journals and conferences.
2. The collected studies were evaluated by the researcher. Several factors such as study design, sample size, methodology used and suitability for the purpose of this study were considered.
3. Then a thematic analysis (synthesis) of the findings found in the selected studies. The research also created a comprehensive summary of these findings for use in the meta-analysis.
4. The researcher has then compared the results of the selected studies to find similarities, differences and emerging patterns.
5. The researchers combined results from similar studies in a meta-analysis to obtain a more robust and reliable effect estimate.
6. The overall findings of the meta-analysis are interpreted. This was done in order for the researcher to gain an in-depth understanding of the role of ChatGPT in supporting the writing process. The researcher then discussed the implications of the results of this analysis in the context of educational technology development, writing practices and future research directions.

RESULT AND DISCUSSION

Findings

Based on the data analysis, researchers have reviewed several studies. The researcher searched for these studies using the keywords "the use of ChatGPT in supporting writing". From searching for these studies from various databases, researchers found dozens of studies on the topic. After that, the researcher filtered the dozens of articles and selected only 8 studies that fit the criteria. Researchers are only looking for research published in the vulnerable years 2022-2024. Then, the data is presented using the following table:

Table 1. The Use of ChatGPT in Supporting Writing

No.	Author	Objective	Results
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1.	(Yasmar et al., 2023)	The objective of this study is to evaluate the effectiveness of using ChatGPT in improving writing skills based on the 6Cs.	<i>"The results of the data analysis indicated that using ChatGPT is a very good way to improve writing abilities (maharah kitabah based on 6 C). According to ChatGPT's results, student responses also make it simpler to organize and plan writing, enhance grammar and sentence structure, offer writing feedback to improve writing, foster greater creativity and a wider range of writing styles, and expedite the writing process."</i>
2.	(Wahyuddin et al., 2023)	The object of this study is to evaluate the use of ChatGPT in improving essay writing skills for college students through the application of artificial intelligence technology.	<i>"The study found that using ChatGPT to improve essay writing abilities in upper-level English classes is useful and has a number of advantages. When ChatGPT is used, essay writing performance is enhanced. Students can enhance their abilities to articulate their thoughts and comprehend the format and style of their essays by using ChatGPT. When it comes to honing and expanding their English language proficiency, particularly in writing, students can be imaginative."</i>

3.	(Seraphine & Ginting, 2023)	The purpose of this study is to examine the impact of using ChatGPT in improving students' Chinese writing skills.	<i>"Although ChatGPT technology can help students become more proficient at learning foreign languages, teachers still need to teach their pupils how to use these gadgets responsibly."</i>
4.	(Supriyadi, 2022)	The purpose of this research is to find out how ChatGPT can help in the process of making math education research articles and whether it can improve the quality of the research articles that are made.	<i>"The results of this study demonstrate that since the OpenAI firm introduced the Chat GPT platform in November 2022, it has gained a lot of attention, especially on social media platforms like Twitter. Although there is anticipation that Chat GPT may eventually take the role of the Google platform, more investigation is required to determine how well this technology actually helps students become better writers. This study also examined Chat GPT's application in writing scientific articles, demonstrating Chat GPT's ability to produce abstracts and introductions with formats compliant with scientific writing guidelines. The findings did, however, also show that Chat GPT usage is still susceptible to plagiarism, so in order to assure uniqueness, the chat must be cleaned up prior and verified</i>

			<i>with plagiarism detection software.”</i>
5.	(Kusumaningtyas et al., 2023)	This study aims to identify the effectiveness of using Chat GPT in doing essay assignments, especially for Surabaya State University students majoring in Communication Science.	<i>“The use of GPT Chat can assist University Negeri Surabaya master's students in handling difficult tasks like esai. Begin with gathering information, making notes, and calculating numbers. This makes it possible for users to be more productive when handling their tasks. But if this GPT chat is used repeatedly, it may result in unfavorable outcomes. People can experience less difficulty writing, learning, or solving problems because there are so many advancements in this technology.”</i>
6.	(Abdullayeva, 2023)	The objective of this study was to explore the impact of using ChatGPT on students' writing skills and discuss the benefits and potential drawbacks of using the technology in improving students' writing skills, as well as provide examples of using similar technologies in education.	<i>“Although Chat GPT has the potential to revolutionize writing instruction, further study is required to see how well this technology actually helps students write. For students who have trouble writing, such as those who are non-native English speakers or have learning difficulties, Chat GPT can be a very helpful tool. Chat GPT can help in writing by offering substitute words or sentences that have a similar</i>

			meaning. Furthermore, Chat GPT can explain grammar principles or give instances of how to utilize particular words or phrases in context. This might be especially beneficial for kids who require more assistance with their writing.”
7.	(de Vicente-Yagüe-Jara et al., 2023)	Examining artificial intelligence's (AI) creative potential for writing skills in an educational setting is the primary goal of the project. The goal of the project is to help the teaching-learning process in the classroom by integrating AI and offering evidence of its use.	“The findings of this study suggest that artificial intelligence (AI) systems have promising potential in supporting the development of creative writing skills in educational settings, especially in terms of generating practical ideas, but AI still has limitations in dealing with more abstract and fantasy situations such as those found in Game 3. Nonetheless, collaboration between humans and AI, as demonstrated by the use of ChatGPT, can significantly improve students' writing outcomes. However, it is important to remember that human creativity and intelligence remain irreplaceable by AI, and future educational approaches should pay attention to the balance between the use of technology

			<i>and the empowerment of human abilities and the development of AI literacy among educators."</i>
8.	(Oh, 2023)	The purpose of this study is to confirm the possibility of using ChatGPT in college liberal arts writing education and to derive implications for the education field.	<i>"The findings of this study suggest that the use of ChatGPT in liberal arts writing education in higher education can provide some advantages, especially in saving time, and improving process efficiency. The use of ChatGPT tends to focus on idea generation and information gathering. However, there are issues related to the quality, source, and trustworthiness of the information generated by ChatGPT. Therefore, it is necessary to strengthen education on the ability to compare, assess, and synthesize information from various sources, as well as provide clear writing ethics standards and guidelines for the use of this AI."</i>

Discussions

This research collects and analyzes the latest findings on the role of ChatGPT in supporting the writing process. Findings from various studies conducted over the past 5 years indicate that the use of this AI contributes significantly to improving writing skills, time efficiency and the creative writing process.

One of the main findings of this study is that the use of ChatGPT is effective in improving students' writing skills. As stated by Yasmar et al., (2023) the use of ChatGPT can help in various aspects of writing skills such as planning, sentence structure,

feedback, grammar, variety of writing styles and creativity. This indicates that ChatGPT can be a very useful tool in supporting writing learning, especially for students who have difficulties in this regard.

Studies conducted by Wahyuddin et al., (2023), Kusumaningtyas et al (2023), and Oh (2023) also show that the use of ChatGPT can improve writing performance, especially in the context of essay writing. It was found that ChatGPT can help in articulating thoughts, understanding the writer's format and style, and expanding students' English skills.

However, some studies have also highlighted some limitations and concerns regarding the use of ChatGPT. One of them is the issue of authenticity and reliability of the information generated by ChatGPT. As expressed by Oh (2023), there are concerns about the quality, source, and reliability of the information generated by ChatGPT. Therefore, efforts are needed to strengthen education on the ability to compare, assess, and synthesize information from various sources, as well as provide ethical standards and clear writing guidelines in the use of this technology.

Moreover, although ChatGPT offers various conveniences and benefits in the writing process, it is important to remember that human creativity and intelligence remain irreplaceable by artificial intelligence. As noted by de Vicente-Yagüe-Jara et al (2023), cooperation between humans and artificial intelligence can significantly improve students' writing outcomes. Nevertheless, future educational approaches need to pay attention to the balance between the use of technology and the empowerment of human abilities and the development of artificial intelligence literacy among educators.

In conclusion, although ChatGPT shows promise in supporting the writing process by contributing significantly to improving writing skills and time efficiency, it should be recognized that its use also raises some concerns regarding the authenticity of the information and the balance between its use and the empowerment of human capabilities in writing education. Therefore, further research and development is needed to better understand the potential and limitations of using ChatGPT in supporting the writing process.

Implication

The implication of the findings of this study is the importance of integrating

ChatGPT in the context of learning to write, both at formal and non-formal education levels. With its ability to improve writing skills and time efficiency, ChatGPT can be a valuable tool for teachers and students in broadening and deepening language understanding and the creative writing process. In addition, understanding the limitations and concerns related to the use of ChatGPT also raises important implications for curriculum development and guidelines for the use of technology in writing education, including education in writing ethics and artificial intelligence literacy.

Limitation of this study

This study has several weaknesses that need to be considered. First, the data limitations include only 8 studies, which may not cover all aspects of ChatGPT usage in various contexts. Second, the limited time frame of the study may limit the availability of relevant literature, third, the reliance on secondary data analysis from previous studies may affect the validity of the findings. Fourth, attention to the issue of plagiarism when using AI should also be of particular concern. Fifth, over-reliance on the use of ChatGPT may reduce students' ability to develop their own writing skills. Sixth, the generalizability of the findings may not always be applicable to all contexts or populations. Finally, further research needs to be conducted to understand the impact of using ChatGPT in the long term.

CONCLUSION

The conclusion of this study highlights the great potential of ChatGPT in improving writing skills, time efficiency, and the creative process of writing in an educational context. However, it is important to recognize that the use of ChatGPT also raises some concerns regarding the authenticity of information and the balance between technology and human capabilities. Therefore, further development in the understanding of the potential and limitations of using ChatGPT, as well as a balanced approach between technology integration and human capability empowerment in writing education, are important steps to take in the future.

Suggestion

As a suggestion or recommendation, it is recommended that educational institutions and technology developers continue to conduct further research and development in the use of ChatGPT in the context of learning to write. This includes developing guidelines and ethical standards in the use of ChatGPT, increasing artificial

intelligence literacy among educators, and developing curricula that integrate technology effectively in writing learning. It is also recommended to involve various stakeholders, including teachers, students and industry, in the process of developing and implementing this technology to ensure that its use can provide maximum benefits for an inclusive and sustainable writing education process.

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