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The Impact of Chatgpt on English as a Foreign Language Learners' Writing Skills-An Experimental Study at Georgian Universities

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Abstract

This study explores the impact of ChatGPT on English as a Foreign Language (EFL) students' writing skills. The integration of advanced AI tools like ChatGPT has transformed educational experiences, offering significant potential to enhance writing competence through personalized feedback and interactive writing practice. Conducted in a Georgian higher education context, the study involved 33 B2-level students divided into experimental and control groups over six weeks. The experimental group used ChatGPT for writing assistance, while the control group received traditional instruction. Results showed that ChatGPT significantly improved students' writing performance, highlighting its efficacy as an educational tool. However, concerns about ethical use and over-reliance on AI were noted, emphasizing the need for a balanced integration of technology in language learning.

Keywords: ChatGPT, English as a Foreign Language (EFL), Writing Skills, Artificial Intelligence (AI), Language Learning, Educational Technology

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Introduction

Academic writing holds a pivotal role in the language development of English language learners, necessitating proficiency in diverse areas such as writing organization, coherence, grammar, and vocabulary (Campbell, 2019). Proficient writing skills enable clear and effective communication, ensuring that the writer's message is easily understood by the reader. In academic and professional settings, clear communication can prevent misunderstandings and convey complex ideas accurately. Strong writing skills are essential for academic achievement, as they are often a significant component of assessments, assignments, and research projects. However, English language learners often face motivation constraints due to time limitations, which hinders their ability to allocate sufficient time and effort toward improving their writing abilities (Lee, 2017). The emergence of AI-powered writing tools, accessible on mobile devices, provides a novel avenue to address the challenges associated with developing writing proficiency through traditional training methods (Zawacki-Richter et al., 2019; Jia et al., 2022; Kohnke, 2023). AI-powered writing tools can automatically detect and correct grammatical errors, stylistic issues, and punctuation mistakes, providing real-time feedback to users. These tools can offer suggestions for improving sentence structure, word choice, and overall readability, helping users refine their writing skills. According to the studies conducted by Liu et al. (2021) on the influence of AI-supported language learning on the writing skills of English as a Foreign Language (EFL), the AI-supported approach had a significant positive impact on their writing abilities. Equivalently, Yan (2023) investigated the impact of ChatGPT, an AI-assisted language learning tool, on the writing skills of EFL learners and reported significant improvements in their writing performance as a result of AI-assisted language learning. Despite the growing interest and research on AI-assisted writing tools, there is a key gap in the literature that requires further exploration. Most studies focus on the immediate benefits of AI-assisted writing tools, such as improved grammar and stylistic corrections. There is limited research on the long-term impact of these tools on users' writing skills development and retention. Consequently, this study explores the longer-term effect of AI on EFL students' writing skills and whether the ChatGPT can be a valuable writing tool in the EFL context.

Literature Review

The integration of advanced technologies has significantly influenced the educational experience of English as a Foreign Language (EFL) students. One such technological innovation that has garnered attention is ChatGPT, a state-of-the-art language model developed by OpenAI. Open-AI's latest development in introducing conversational chatbots, ChatGPT-3.5 and ChatGPT-4, has made it easier for teachers and learners to apply AI

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technologies in teaching and learning (Taecharungroj, 2023). However, the release of ChatGPT has revolutionized the tools and applications used for writing. In comparison with already available chatbots, this latest ChatGPT by open-AI is more efficient in text generation, particularly for long essays and creative writings, and has the most striking ability to produce a human-like performance for various academic and professional tasks (Rasul et al., 2023; Suaverdez & Suaverdez, 2023). This artificial intelligence (AI) tool has demonstrated remarkable capabilities in natural language understanding and generation, offering a unique potential to enhance EFL students' writing competence. ChatGPT can be effectively utilized in diverse language learning courses to enhance learners' writing abilities (Barrot, 2023). As educators and learners seek effective strategies to improve language proficiency, understanding the impact of ChatGPT on EFL students' writing skills becomes a crucial avenue for exploration. ChatGPT's influence on writing competence, considering its implications for language acquisition, creativity, and overall learning outcomes is of paramount importance in the context of English language education. Moreover, ChatGPT serves as an interactive writing companion, encouraging EFL students to practice and refine their skills in a low-pressure environment.

Recent strides in Artificial Intelligence (AI) have introduced innovative tools, with AI-based chatbots (Paliwal, et al., 2020; Suhel et al., 2020) such as ChatGPT emerging as a noteworthy consideration for enhancing students' writing skills within the context of language learning. For instance, Kohnke (2023) conducted a study exploring the use of a chatbot in an English for Academic Purposes (EAP) course and found that students perceived the chatbot as a valuable tool for writing practice and feedback. Similarly, Wei et al. (2023) investigated the effects of an AI-based writing system on Chinese learners' writing performance, reporting positive outcomes in terms of writing accuracy and fluency. These studies establish a significant basis for emphasizing the potential advantages of utilizing AI-driven chatbots to enhance writing skills within the framework of Second Language Acquisition (SLA).

One of the notable impacts of ChatGPT on EFL students' writing competence is the provision of instant and personalized feedback. Traditional language learning environments often struggle to provide timely corrections and suggestions, leading to a gap in understanding and improvement. ChatGPT, equipped with its natural language processing capabilities, offers real-time feedback, pinpointing grammatical errors, suggesting vocabulary enhancements, and providing nuanced insights into sentence structure. It serves as a valuable tool by offering instant feedback and constructive suggestions to learners, assisting them in error identification and overall writing improvement (Link et al., 2022). The continuous interaction

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contributes to the enhancement of language proficiency, as students receive not only correction but also exposure to varied language patterns. Students' perception of ChatGPT (Javaid et al., 2023) as a conversation partner contributes significantly to their writing proficiency. These chatbots hold promise as tools that can potentially enhance students' writing skills (Wang et al., 2023).

The creative potential of ChatGPT plays a pivotal role in inspiring EFL students to explore and expand their writing skills. Students tend to feel more at ease and less anxious when interacting with ChatGPT, resulting in heightened motivation and a greater willingness to participate in writing tasks (Shoufan, 2023). ChatGPT's adaptability allows for tailored interactions based on individual learner needs. EFL students can receive customized prompts, targeted exercises, and specific language challenges, aligning with their proficiency levels and learning objectives. Some learners prefer ChatGPT as their primary writing aid, while others see it as a complementary tool to be used alongside human feedback (Mun˜ oz et al., 2023; Eloundou et al., 2023).

Numerous studies have investigated the positive impact of AI-assisted language learning tools on English language learners' language acquisition skills (Suryana et al., 2020; Divekar et al., 2021; Liu, 2021; Bašić et al., 2023; Bishop, 2023; Fitria, 2023). For instance, Rahman et al. (2022) examined the role of an AI-assisted language learning tool in identifying and addressing grammatical errors, leading to the development of writing skills among EFL learners. The findings demonstrated significant improvement in the writing proficiency of English as a Foreign Language (EFL) students, with the learners expressing favorable perceptions regarding the impact of AI-assisted language learning on their writing capabilities. Utami and Winarni (2023) conducted a case study on three Indonesian EFL learners, exploring their use of AI-assisted language learning for academic research writing. By employing a mixed method of quantitative data gathered through surveys and qualitative insights acquired from interviews, the results unveiled a positive influence of AI-assisted language learning tools on the academic research writing of learners, leading to heightened engagement in these tasks. In a study by Yan (2023), the contribution of ChatGPT as an AI-powered language learning tool to EFL learners' English writing was explored. The findings highlighted a significant impact of the AI tool in boosting learners' writing proficiency and improving their effectiveness in task completion. Nonetheless, concerns were raised by learners regarding potential adverse effects on their academic writing skills in the long run. They underscored the importance of guidance in the proper utilization of the tool for their academic writing assignments. Abdullayeva and Musayeva (2023) examined the influence of ChatGPT on EFL learners' writing skills and found that it contributed by providing writing prompts, immediate feedback, and revision suggestions. Nazari et al. (2021) conducted

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a true experimental study investigating the effects of AI-assisted language learning on EFL learners' writing performance. The results indicated that students who employed the AI-powered tool demonstrated superior writing performance compared to those who did not. Furthermore, the learners utilizing AI exhibited substantial engagement on behavioral, cognitive, and emotional levels during activities supported by AI in writing. In a quasi-experimental research design, Liu et al. (2021) explored the impact of AI on EFL learners' writing skills. The results suggested significant enhancements in writing skills when compared to the traditional classroom setting. The AI-assisted language learning method additionally boosted learners' self-efficacy, self-regulated learning, and alleviated cognitive load, thereby contributing to their proficient performance in writing.

ChatGPT can be a valuable assisting tool for essay writing in a number of ways, including generating ideas, improving sentence structure, grammar, and vocabulary, encouraging self-reflection, language practice etc. Students can use ChatGPT to generate ideas and outlines for their essays. Previous studies showed that ChatGPT could create quality essays on different topics (Huang, 2023). Furthermore, ChatGPT can provide real-time feedback on sentence structure, grammar, and writing style. This can help students identify and correct errors, improving the overall quality of their writing. Students can use ChatGPT to explore and incorporate a broader range of vocabulary into their essays. The model can suggest synonyms or alternative phrases, enriching the language used in the composition. ChatGPT may help researchers, students, and educators generate ideas (Roose, 2023) and even write essays of reasonable quality on a particular topic (Hern, 2023). As argumentative essays are one of the most advanced students' tasks in higher education, and as such pose a challenge for students (Latifi et al., 2021), one of the ways where ChatGPT could be tested is essay writing. Such essays empower students' ability to give an argument and build confidence in their knowledge preparing them not only for the academic environment but also for real-life situations (Valero Haro et al., 2022; Heitmann et al., 2014).

Despite the numerous benefits that Chat GPT has in terms of language acquisition, the issue of artificial intelligence (AI) and plagiarism has become a topic of concern and interest in the academic and creative realms. AI technologies have both the potential to aid in plagiarism detection and, paradoxically, raise challenges that may contribute to the evolution of more sophisticated forms of plagiarism. Instructors worry about the possibility of students using ChatGPT to complete their written assignments, as it has been demonstrated to generate reports within seconds, evading detection by plagiarism detection systems Khalil et.al (2023). Additionally, peer review may not distinguish ChatGPT-generated abstracts from those written by authors (Else, 2023) as they may be designed to mimic the style and format of

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genuine reports. It also led to questions on the ethics of using ChatGPT in different forms of academic writing, the AI authorship (Bishop, 2023; Grimaldi and Ehrler, 2023; Kung et al., 2023; Pourhoseingholi et al., 2023; Xiao, 2023), and raised issues of evaluating academic tasks like students' essays (Stokel-Walker, 2022; Whitford, 2022). Unavoidable content plagiarism issues were discussed, and solutions for adapting essay settings and guidelines were revised (Cotton et al., 2023; Hoang, 2023; Lo, 2023; Sallam, 2023; Stokel-Walker, 2022; Yeadon et al., 2023).

A number of studies have expressed concern over instructors' and students' dependence on ChatGPT. Kasneci et al. (2023) confirmed that ChatGPT's fast-produced solutions will hamper students' ability to think critically or solve problems. The authors also addressed a similar problem that might occur for instructors who use ChatGPT as a replacement for their lesson preparations. Lund and Wang (2023) shared the same concern about how much students and teachers depend on ChatGPT for research and writing tasks. However, if users are aware of the benefits of utilizing ChatGPT as a supplement to learning or to aid in the teaching process, the problem may be readily resolved (Pavlik, 2023). The ethical usage of ChatGPT in education needs a conversation about the possibility of jeopardizing data privacy and security. Large language models in ChatGPT may synthesize students' knowledge and use it for a variety of applications (Dwivedi et al., 2023). Furthermore, Kasneci et al. (2023) indicated that ChatGPT's personal information might be used for impersonation or deceit. ChatGPT's creation of synthetic information also increases the danger of sensitive data leakage, including personal, financial, and medical information (Lund & Wang, 2023). Users should take care and utilize ChatGPT appropriately to minimize this possible danger (Lund & Wang, 2023).

Numerous research on ChatGPT have shown favorable views from instructors regarding its educational applications, despite ethical concerns and limitations. However, existing studies have not extensively examined teachers' perspectives on incorporating ChatGPT for teaching language skills, nor have they thoroughly documented instructors' recommendations for its effective use in teaching contexts. Additionally, concerns have been raised by educators regarding potential issues such as over-reliance on technology, ethical considerations, and plagiarism.

Method

An Experimental Study

The systematic review of literature addressed the key themes related to the impact of ChatGPT on EFL students' writing skills, identifying various issues and detailing multiple aspects of each. These insights served as the foundation for the research. This chapter describes the research methodology

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and the techniques used to collect both quantitative data. It covers the variables under examination, the research design and experimental procedures employed, as well as the surveys and questionnaires used to gather data and analyze the research findings.

A preliminary study was initially conducted during the spring semester to examine the impact of ChatGPT on the writing skills of EFL students within the Georgian context. The BA students (freshmen) aged between 18-20 participated in the experiment representing B2 level all of whom were Georgians. It was confined to the higher educational institutions where the experiment was subsequently conducted. The preliminary study identified issues related to the impact of ChatGPT on EFL students' writing skills among university students, leading to the exploration of research grounds and the proposal of an experimental model.

The six-week experiment, conducted during the spring semester, was carried out at a higher education institution in Georgia. It involved six groups totaling 33 students, selected from upper-intermediate levels of English proficiency. In the experimental group, students were given a brief overview of the activity objectives and the role of ChatGPT in assisting with writing tasks. ChatGPT was introduced to the students and explained how it worked. A brief demonstration was provided of how they could use it to generate ideas, improve their writing, and receive feedback. The different features of ChatGPT, such as generating suggestions, providing feedback, and improving sentence structure were explained. Writing prompts or topics relevant to the students' language proficiency level and curriculum were provided. Students were provided with a list of vocabulary related to the topic and generated by ChatGPT and were asked to write essays in 150-200 words on a given topic within 20 minutes. ChatGPT also provided writing suggestions, alternative ways to phrase sentences, and ideas for expanding vocabulary to improve expressiveness and language fluency. Students used the vocabulary generated by ChatGPT to enhance the quality of essays and then asked ChatGPT to check the pieces of writing for grammar and spelling. Participants were encouraged to assess their strengths and weaknesses, integrate ChatGPT's feedback into their writing revisions, and utilize the platform's tools to monitor their progress. Students received individualized feedback on their essays. The writing instruction sessions using ChatGPT were conducted twice a week over a period of six weeks. To reduce the risk of plagiarism, strict measures were implemented. Participants were thoroughly instructed on using ChatGPT as a writing assistant, with a strong emphasis on creating original content rather than depending on AI-generated material. Significant emphasis was placed on the ethical use of AI in academic writing, advising participants on how to incorporate AI feedback while maintaining their unique writing style and ideas. These guidelines were intended to help participants utilize AI support

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while ensuring academic integrity. The scientific experiment featured ChatGPT usage as the independent variable, while the dependent variables included essay writing skills, the quality of essays, and the time required to complete the writing task. In a control group, traditional writing instruction was provided without access to ChatGPT. The researcher employed a deductive approach by explaining the overall structure of an essay, typically consisting of an introduction, body paragraphs, and a conclusion. They were instructed to describe the purpose of each section briefly. The participants were deductively taught paragraph structure by explaining the components of a well-developed paragraph: topic sentence (main idea), supporting details or evidence, and analysis or interpretation of the evidence. They were asked to write essays in 150-200 words on the same topics within 20 minutes as in the experimental group. These activities targeted different aspects of writing, including grammar, vocabulary, organization, coherence, and sentence structure. The participants were given personalized feedback on writing assignments, pointing out areas needing improvement and offering suggestions for enhancement. Participants in the control group received feedback only during regular classroom-based writing classes led by the teacher, ensuring continuous guidance and feedback throughout the 6-week intervention. The time allocated for practice outside of class was designed to be comparable to that of the experimental group. Writing instruction sessions for the control group were conducted twice a week over a six-week period during the spring semester. Participants were instructed to utilize conventional writing methods and resources.

In contrast to the experimental group, the control group did not receive AI-assisted feedback from ChatGPT. Instead, their feedback came from the teacher's expertise and teaching experience. The teacher stressed the importance of practice, provided guidance on effective writing strategies, and offered constructive criticism to help improve their writing skills.

Data analysis was conducted using SPSS, focusing on central statistical results and employing frequencies (mean, median, mode, skewness and kurtosis) to identify differences between stages.

Quantitative results

Initially, an examination was conducted on the descriptive statistics of the participants' pre-test and post-test results in overall writing, writing proficiency, and writing motivation across both groups. The summarized findings are presented in Table 1.

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Table 1. Experimental Group 1 (Preliminary study) (B2 Level)

Session #	Topic of an essay	Mean	Median	Mode	Std. deviation	Skewness	Kurtosis	No of Students
1	The Future of Transportation: How Will We Travel in 2050?	3.0000	3.0000	3.00	.70711	.000	2.000	5
2	Technological Change and Its Impact on Daily Life	3.2857	3.0000	3.00	.48795	1.230	-.840	7
3	The biggest Change I have experienced	3.1000	3.0000	3.00	.56765	.091	1.498	10
4	The Impact of AI on our Daily lives	2.9231	3.0000	3.00	.64051	.053	.061	13
5	Will a robot replace a human?	3.3333	3.0000	3.00	.49237	.812	-1.650	12

During all sessions, the mean, median, and mode were very close to each other, mostly around the value of 3. This indicates a consistency in the central tendency of the scores given for the essays. The standard deviation values ranged from 0.48795 to 0.70711. Session 1 had the highest variability (0.70711), while Session 2 had the lowest (0.48795). This suggests that the scores were more spread out in Session 1 compared to Session 2. Standard deviation values indicated that while some sessions had more consistent scores, others had more variability. This might reflect the students' varying comfort levels with different essay topics. The skewness and kurtosis values provided insights into the shape of the score distributions. Sessions with high skewness and kurtosis values indicated that scores were not normally distributed, suggesting potential outliers or varying levels of essay quality. The data indicates that while students generally scored around 3 on their essays, the variability and distribution shapes differed across sessions. This could be due to the different topics and how comfortable students were with them. Positive skewness in some sessions suggests that some students struggled more, while the relatively consistent central tendency values imply that the scoring was uniform.

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Table 2. Control Group (B2 Level)

Session #	Topic of an essay	Mean	Median	Mode	Std. deviation	Skewness	Kurtosis	No of Students
1	Connections between the environment and the nature	2.5000	2.5000	2.00	.52705	.000	-2.5771	10
2	How Automation and AI are Transforming Human Resources	2.4000	2.0000	2.00	.51640	.484	-2.277	10
3	Money is essential for Happiness	2.6000	3.0000	3.00	.51640	-.484	-2.277	10
4	We are responsible for the health of our planet	2.6000	3.0000	3.00	.51640	-.484	-2.277	10
5	You need no formal education for a successful life	2.9000	3.0000	3.00	.73786	.166	-.734	10
6	Only generation Z can help Georgia to become successful and prosperous country	2.9000	3.0000	3.00	.56765	-.091	1.498	10

The mean scores ranged from 2.4 to 2.9, with medians and modes often at 3. This suggested that the central tendency of scores was slightly below average, generally around 2.5 to 3. Standard deviation values ranged from 0.51640 to 0.73786. Session 5 had the highest variability, while Sessions 2, 3, and 4 had the lowest variability, indicating more consistent scores in these sessions. Session 1 shows no skewness (0.000), indicating a perfectly symmetrical distribution. Sessions 2 and 5 showed positive skewness (0.484 and 0.166), indicating a right-skewed distribution with more scores below the mean. Sessions 3, 4, and 6 show negative skewness (-0.484, -0.484, -0.091), indicating a left-skewed distribution with more scores above the mean. Sessions 1, 2, 3, and 4 had significantly negative kurtosis values (-2.5771, -2.277, -2.277, -2.277), indicating platykurtic distributions with lighter tails and flatter peaks. Session 5 showed slightly negative kurtosis (-0.734), indicating a platykurtic distribution. Session 6 has positive kurtosis (1.498), indicating a leptokurtic distribution with heavier tails and a sharper peak. It is suggested that the control group's scores were generally consistent but slightly

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below the average score of 3. The low to moderate standard deviation values indicated that the scores were relatively consistent within each session, with Session 5 showing the most variability. The skewness and kurtosis values revealed that most distributions were either symmetrical or slightly skewed, with generally platykurtic distributions indicating flatter distributions with lighter tails.

The control group's scores were relatively consistent but lower compared to the experimental groups. The distributions were mostly symmetrical or slightly skewed, with flatter and lighter tails for most sessions. This suggests that the control group had a more uniform performance with fewer high scores compared to the experimental group using ChatGPT.

Table 3. Experimental Group 2 (B2 Level)

Session #	Topic of an essay	Mean	Median	Mode	Std. deviation	Skewness	Kurtosis	No of Students
1	Connections between the environment and the nature	3.7000	4.0000	4.00	.48305	-1.035	-1224	10
2	How Automation and AI are Transforming Human Resources	3.8000	4.0000	4.00	.42164	-1.779	1.406	10
3	Money is essential for Happiness	3.7000	4.0000	4.00	.48305	-1.035	-1.224	10
4	We are responsible for the health of our planet	3.9000	4.0000	4.00	.31623	-3.162	10.000	10
5	You need no formal education for a successful life	3.9000	4.0000	4.00	.31623	-3.162	10.000	10
6	Only generation Z can help Georgia to become successful and prosperous country	4.0000	4.0000	4.00	.00000	1.334		

For all sessions, the mean, median, and mode were around 3.7 to 4. This indicated that the majority of scores were very close to 4, suggesting high performance across all topics. The standard deviation values were low, ranging from 0.00000 to 0.48305, indicating that the scores within each session were highly consistent. Sessions 1, 3, 4, and 5 show significant negative skewness (-1.035, -1.035, -3.162, -3.162), indicating a left-skewed

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distribution where scores are clustered towards the higher end. Session 2 shows a high negative skewness (-1.779), also indicating a left-skewed distribution. Session 6 shows positive skewness (1.334), indicating a right-skewed distribution. Sessions 1 and 3 have negative kurtosis (-1.224), indicating a platykurtic distribution with lighter tails. Session 2 has positive kurtosis (1.406), indicating a leptokurtic distribution with heavier tails. Sessions 4 and 5 have high positive kurtosis (10.000), indicating very peaked distributions. Kurtosis for Session 6 is not provided. The central tendency measures suggest that students consistently performed well, with most scores clustering around 4. The low standard deviation values indicated that the scores were very consistent, showing little variability within each session. The significant negative skewness in most sessions indicated that many students scored at the higher end of the scale. The mixed kurtosis values suggested that while some distributions were flatter with lighter tails, others were more peaked with heavier tails. The mean scores for Experimental Group 2 are consistently higher than those of the control group. Experimental Group 2 showed lower standard deviation values, indicating more consistent performance. The control group had more symmetrical or slightly skewed distributions with generally platykurtic distributions, whereas Experimental Group 2 had more left-skewed distributions with a mix of platykurtic and leptokurtic distributions. Experimental Group 2, using ChatGPT, showed consistently higher and more uniform scores compared to the control group. The low variability and high scores indicate that ChatGPT might have positively impacted students' writing performance. The distribution shapes suggest that most students in Experimental Group 2 performed at a high level, with fewer low scores compared to the control group.

Table 4. Rubric-based assessment results- Raters 2 and 3 Correlations

Correlations

		VAR00001	VAR00002
VAR00001	Pearson Correlation	1	.717
	Sig. (2-tailed)		.109
	N	6	6
VAR00002	Pearson Correlation	.717	1
	Sig. (2-tailed)	.109	
	N	6	6

The correlation coefficient between VAR00001 and VAR00002 is 0.717. This value indicates a strong positive correlation between the two variables. A correlation coefficient close to 1 suggests that as one variable increases, the other variable also tends to increase. The significance value (p-value) for the correlation between VAR00001 and VAR00002 is 0.109. This

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value is greater than the common significance level of 0.05. This indicates that the correlation is not statistically significant at the 5% level. In other words, there is not enough evidence to conclude that the correlation between the variables is significantly different from zero. The number of observations (N) used in the correlation analysis is 6 for both variables. This is a small sample size, which can affect the reliability of the correlation results. With small sample sizes, there is more variability, and the correlation coefficients may not be as stable or reliable. In conclusion, while there is a strong positive correlation observed between VAR00001 and VAR00002, the lack of statistical significance and the small sample size suggest that these results should be interpreted with caution. Consequently, Further study with a larger sample size may be needed to draw more reliable conclusions.

Discussion

This study aimed to explore the impact of ChatGPT on EFL students' writing skills. To thoroughly investigate this phenomenon, a quantitative approach was used and an experimental study was conducted, enabling the systematic collection and analysis of quantitative data. The quantitative analysis provided significant insights, demonstrating significant improvements in participants' academic writing performance as a result of AI-powered language learning. These enhancements were particularly evident in the participants' organizational skills, coherence, grammar, vocabulary and spelling. These quantitative findings resonate with the observations made by Liu et al. (2021) and Yan (2023), who underscored the profound contributions of AI-assisted language learning tools in advancing EFL learners' writing abilities. Moreover, these findings harmonize with the outcomes identified by Rahman et al. (2022) and Utami and Winarni (2023), which accentuated the positive influence of AI-powered language learning on EFL learners' motivation and their heightened engagement in writing tasks. The AI-assisted language learning tool offered the learners suitable alternatives for their written texts, making this approach more favorable compared to conventional writing instruction (Zhao, 2022). The AI tool facilitated the production of well-written texts by generating writing ideas, grammatically accurate sentences, and suitable lexical resources. This improved the learners' engagement in the required writing tasks within the AI-supported class. The increased engagement in writing activities likely contributed to the development of the learners' academic writing skills. Consistent with the findings of Hwang et al. (2023), the present study suggests that the positive outcomes can be attributed to the personalized language learning experience facilitated by the AI-assisted language learning tool during collaborative writing tasks. Additionally, participants reported significant improvements in their writing skills due to using ChatGPT. The intervention's success in

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enhancing organization and coherence in their essays highlights the potential of AI-assisted tools to support the writing process (Zhao, 2022; Barrot, 2023). Incorporating suggestions and examples from ChatGPT led to an enriched vocabulary and enhanced writing fluency. This mirrors the findings of studies that have highlighted AI's contribution to vocabulary development and writing fluency (Ippolito et al., 2022; Su et al., 2023). While the benefits of AI-assisted writing instruction are evident, participants also recognized certain challenges. Concerns about contextual accuracy identified in this study align with previous research, underscoring the importance of thoughtful integration of AI-generated feedback (Utami and Winarni, 2023). Furthermore, the issue of over-dependence on ChatGPT surfaced as a significant concern. It is crucial to find a balance between leveraging AI feedback and encouraging independent critical thinking and creativity (Utami and Winarni, 2023). Continuous improvement and adaptability of AI systems to cater to the changing needs of language learners are indeed critical aspects for its sustained effectiveness (Su et al., 2023).

Taking everything into consideration, significant improvements were found in organizational skills, coherence, grammar, vocabulary, and spelling of all participants. They reported enhanced engagement and better-written texts facilitated by ChatGPT. However, concerns about contextual accuracy and over-reliance on AI were noted, highlighting the importance of balanced integration to encourage independent thinking. Further studies are necessary to yield more reliable results.

Conclusion

Based on the experimental study conducted on the impact of ChatGPT on EFL students' writing skills, significant findings emerged. The use of ChatGPT in the experimental group led to marked improvements across various metrics including organizational skills, coherence, grammar, vocabulary, and spelling. Compared to the control group, which received traditional writing instruction, the experimental group consistently achieved higher scores and demonstrated more uniform performance. These outcomes underscore the potential of AI-assisted tools like ChatGPT to enhance academic writing proficiency among EFL learners, supporting engagement and quality in writing tasks. However, challenges such as concerns about contextual accuracy and over-dependence on AI also surfaced, suggesting the need for balanced integration strategies to foster independent critical thinking alongside AI support. Further research with larger sample sizes is recommended to strengthen these findings and explore nuanced impacts over longer periods.

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