Evaluating the Impact of ChatGPT on ESL Students' Perceptions of Writing Skills and Academic Integrity

Omar Serwor Massoud and Jing Zhang

Abstract

This is a preliminary study which investigates the role of an artificial intelligence (AI) tool, ChatGPT, in shaping ESL students' perceptions of their writing skills, with a specific focus on its contribution to enhancing their self-efficacy in structuring paragraphs, citing and referencing, and paraphrasing and summarizing effectively. Using a mixed-methods approach, this research utilized surveys of 19 students and qualitative data from a teacher's journal to assess ChatGPT's role in enhancing students' self-efficacy in grammar, paragraph structuring, paraphrasing and summarizing, and citation and referencing, while also addressing its impact on their perceptions of academic integrity. The study found that ChatGPT enhanced students' self-efficacy in organizing paragraphs and citing and referencing effectively, while also raising awareness about academic integrity. It concludes that ChatGPT can be a valuable aid in writing instruction, provided it is carefully integrated to avoid over-reliance and to uphold academic honesty. The study adopts a constructive approach to examining how generative AI tools like ChatGPT shape ESL students' perceptions of English writing, providing practical insights for enhancing teaching strategies and fostering students' self-efficacy, with significant implications for the effective integration of AI in higher education.

Introduction

As technology continues to shape education, tools like OpenAI's ChatGPT are becoming increasingly relevant in the age of artificial intelligence (AI). Writing, one of the key components of language acquisition, requires students to develop skills in grammar, coherence, cohesion, and vocabulary usage. Traditionally, these skills have been refined through instructor feedback and peer review. With the introduction of AI tools like ChatGPT, there is growing interest in how these technologies can enhance traditional learning by providing immediate feedback and guidance. Despite the increasing adoption of online tools for various writing tasks, limited research exists on ChatGPT's impact on specific writing outcomes, such as grammar accuracy and paragraph organization in ESL classrooms (Song & Song, 2023) and particularly rare studies on ESL students' self-efficacy of the improvement of their writing abilities. Additionally, concerns about academic integrity have surfaced, raising questions about the influence of AI on students' adherence to ethical standards. This preliminary study explores the role of ChatGPT in influencing ESL students' perceptions of their writing abilities during a six-week period of implementation, with a particular focus on its impact on their self-efficacy in structuring paragraphs, citing and referencing, and paraphrasing and summarizing effectively. Using a mixed-methods approach, the study integrates student surveys and qualitative insights from a teacher's journal to evaluate ChatGPT's role, while also addressing its influence on students' perceptions of academic integrity.

1. Literature Review AI in Language Education

The use of AI in education, particularly language learning, has evolved significantly over the decades. Early innovations, such as Computer-Assisted Language Learning (CALL) in the 1990s, introduced computer-based programs that enabled learners to practice language skills and marked the first significant integration of technology into language education (Liang et al., 2021). Following this, the 2000s saw the emergence of Mobile-Assisted Language Learning (MALL), which leveraged mobile technologies to support vocabulary learning, writing assistance, and reading comprehension (Rüschoff & Ritter, 2001; Kukulska-Hulme, 2013). More recently, Intelligent Computer-Assisted Language Learning (ICALL), driven by advancements in Natural Language Processing (NLP) and machine learning, has transformed language learning by offering personalized and adaptive experiences (Heift, 2021).

AI tools have played a pivotal role in enhancing language education by providing tailored learning materials, correcting writing errors, facilitating conversation practice, and delivering customized tutoring (Pokrivcakova, 2019; Huang et al., 2023). For example, Stockwell (2007) demonstrated how learners could practice challenging vocabulary tailored to their individual needs. Similarly, AI-powered tools like automated grading systems and intelligent tutoring systems have been shown to improve student engagement and enable individualized instruction (Khatun & Miwa, 2016). By adapting content to students' language proficiency levels, these tools empower learners to progress at their own pace (Pandorova et al., 2019).

However, the adoption of AI in language education is not without challenges.

Concerns about the reliability and accuracy of AI-generated feedback persist, particularly in assessing complex tasks like writing (Grimes & Warschauer, 2010; Marr, 2024). Unclear or inconsistent feedback can lead to student frustration, while doubts about the effectiveness of AI tools have occasionally resulted in demotivation among both teachers and students (Roscoe & McNamara, 2013). Furthermore, a lack of familiarity with AI tools has contributed to resistance among some educators, hindering their broader adoption (Pokrivcakova, 2019). Despite these challenges, the integration of AI into language education represents a significant advancement, offering both opportunities and limitations that warrant further exploration.

Theoretical Aspect

Lev Vygotsky (1978) introduced the concept of the Zone of Proximal Development (ZPD), a metaphorical space where learners receive assistance from more knowledgeable others, enabling them to develop beyond what they could achieve independently, indicating that learning occurs not only through individual cognitive processes but also significantly through social interactions within one's environment. This concept aligns with Stephen Krashen's (1985) i+1 Input Hypothesis, which argues that language acquisition occurs when learners are exposed to input slightly beyond their current ability level. Self-efficacy, defined as an individual's belief in their ability to succeed in specific tasks (Bandura, 1997), also plays a critical role in learning. Research demonstrates that students' confidence in their writing abilities, a key aspect of selfefficacy, significantly influences their motivation, persistence, and overall writing outcomes in academic settings (Pajares, 2003). These foundational theories not only offer valuable insights into how learning occurs but also provide a framework for understanding the role of AI tools, such as ChatGPT, in education. For instance, ChatGPT has been explored as a tool aligned with Vygotsky's concept of the more knowledgeable other.

Stojanov (2023) explored the use of ChatGPT 3.5 as an educational tool, framing it within Vygotsky's concept of a more knowledgeable other. This study aligned with Krashen's (1985) notion of providing input slightly beyond learners' current level (i+1) and suggested that tools like ChatGPT can help build self-efficacy by offering immediate and adaptive feedback, boosting learners' confidence in their abilities. Additionally, this research suggested that while ChatGPT can be beneficial for active learning and engagement, its effectiveness depends on careful integration and the learner's ability to critically engage with the material. This means that ChatGPT should be carefully integrated into structured learning environments where teachers provide guidance, and students are equipped with critical thinking skills to evaluate its outputs effectively. Without such measures, learners may struggle to use the tool meaningfully.

AI and Academic Integrity

The adoption of AI tools like ChatGPT have created both opportunities and challenges in academia. In this study, academic integrity is defined as students' adherence to ethical writing practices, including proper citation, referencing, and the avoidance of plagiarism. This concept is crucial in the context of integrating AI tools like ChatGPT, which raises questions about their influence on students' ethical behavior in writing. Since its release in November 2022, ChatGPT has become a valuable tool for assisting students with writing tasks, but it has also raised concerns about academic integrity and plagiarism (Bin-Nashwan et al., 2023; Cotton et al., 2023). Universities such as Stanford and Oxford have prohibited the use of AI tools like ChatGPT and Google's Gemini in assessed work, aiming to prevent cheating while allowing students to use them as study aids in non-assessed contexts (Stanford University, 2023; University of Oxford, 2023).

This challenge mirrors historical concerns about academic dishonesty. As early as the 7th century in China, ghostwriting was used in civil service examinations, with severe punishments for those caught cheating (Lang, 2013; Iqbal, 2023). While the methods have changed, the issue of maintaining academic integrity in education remains central, particularly with the rise of AI tools. Niloy et al. (2024) found that the use of AI chatbots, including ChatGPT, negatively impacts students' understanding of academic integrity. Their study highlighted those pedagogical limitations, such as increased procrastination fueled by AI chatbot usage, can lead to reduced academic integrity. This raises concerns about academic misconduct and plagiarism. Thus, it is necessary to investigate the relationship between AI usage and academic integrity. However, few empirical studies have been conducted to provide related evidence. Considering these challenges and the lack of empirical evidence, this study hypothesizes that students with higher self-efficacy in citing and referencing according to academic standards are more likely to demonstrate greater academic integrity. This leads to a broader exploration of how AI tools like ChatGPT can address critical gaps in academic writing practices.

Research Gap

Most of the previous research on AI tools like ChatGPT has focused on their impact

on students' writing skills, particularly in grammar accuracy, organization, coherence, and vocabulary (e.g., Song & Song, 2023; Mahapatra, 2024). The findings demonstrate that AI fosters student engagement and motivation by offering personalized, realtime feedback, effectively acting as a virtual tutor in the learning process. Based on Vygotsky's ZPD, they position AI as a "more knowledgeable other," providing scaffolding for self-regulated learning. However, while some studies highlighted the improvements in general writing performance, they leave gaps in exploring specific areas such as paragraph structuring, paraphrasing, summarizing, and citation practices, which are essential academic writing skills.

Burkhard (2022) and Kim et al. (2024) explored students' perceptions and experiences with AI-powered writing tools, highlighting their potential benefits and challenges. Burkhard (2022) identified diverse student attitudes, with some using these tools uncritically, risking unintentional plagiarism, while others avoided them due to skepticism or a lack of learning strategies. Kim et al. (2024), on the other hand, found that students perceived AI tools as multitasking writing assistants, virtual tutors, and digital peers that could enhance their technical writing abilities, performance, and confidence. However, both studies revealed significant challenges, such as dependency on AI, tool limitations, and insufficient task-specific guidance. Despite these insights, there is still a lack of research on how AI tools can specifically enhance self-efficacy in academic writing tasks, such as paragraph structuring, paraphrasing, summarizing, and citation practices.

This is a critical gap, as self-efficacy is closely tied to students' ability to persist and succeed in writing tasks. This need for further investigation as noted by Sullivan et al. (2023), who observed that much of the conversation centered on institutional concerns about cheating, with minimal focus on how students perceive AI's role in developing writing skills. These gaps highlight the need for research that examines how AI tools can assist with paragraph structuring, paraphrasing, summarizing, and citation practices, while also fostering students' self-efficacy in academic writing to ensure they develop these critical skills confidently and independently.

2. Research Questions

This study aims to evaluate students' perceptions regarding the use of ChatGPT in an ESL writing course. It specifically focuses on whether and to what extent ChatGPT contributes to improving students' self-efficacy in structuring paragraphs effectively and in citing and referencing successfully. The research questions (RQ) are:

- 1. Can ChatGPT help students enhance their self-efficacy in structuring paragraphs effectively? If yes, to what extent can it achieve this?
- 2. Can ChatGPT assist students in improving their self-efficacy in citing and referencing? If yes, to what extent can it facilitate this?
- 3. Can ChatGPT help students enhance their self-efficacy in paraphrasing and summarizing effectively? If yes, to what extent can it achieve this?

3. Methodology

Participants

The participants of the study consisted of a total of 19 individuals, including 18 first-year students and one second-year student majoring in English or closely related fields. The participants ranged in age from 19 to 20, with ten males and nine females. They were lower-intermediate (A2-B1 CEFR) English learners. These participants were enrolled in a required general writing class as part of their English program. The course was specifically tailored to match their proficiency levels, with content and objectives designed to meet their needs. The class met once a week for six weeks, with each session lasting 90 minutes. The course aimed to enhance students' vocabulary, grammar, and writing skills through tailored objectives. Students developed an expanded vocabulary and improved grammar for use in writing. They practiced organizing coherent paragraphs, generating creative ideas, and crafting informative and argumentative texts. The course also emphasized revising and editing skills to ensure clarity, coherence, and accuracy in academic writing.

ChatGPT was introduced in Week 2 of the course as a tool to assist students in various aspects of their writing. The teacher demonstrated specific ways to use ChatGPT effectively for tasks such as improving paragraph flow, generating topic sentences, correcting grammar, and formatting citations. Students were shown how to use prompts effectively and interpret ChatGPT's feedback critically. For example, prompts like "Suggest a good order for my ideas in this paragraph" and "How do I cite a website in MLA format?" were used to guide their practice. Students engaged in ChatGPT-assisted writing tasks to refine grammar, organize paragraphs, and practice citation formatting. These included generating topic sentences, adding supporting details, rephrasing ideas, creating concise summaries, and practicing MLA citation formats. Additionally, students engaged in critical evaluation of ChatGPT's outputs, identifying errors (e.g., incorrect MLA formatting) and making necessary corrections. This combination of guided demonstrations and hands-on practice allowed students to develop both technical writing skills and the ability to critically assess AI-generated content.

Research Design

This study employed a mixed-methods research design to examine the integration of ChatGPT into an ESL writing course and its impact on students' self-efficacy in writing. Quantitative data were collected through student surveys, which assessed their confidence in writing and their experiences with ChatGPT. Qualitative data were gathered from the teacher's journal, which provided detailed observations on how ChatGPT supported lessons, engaged students, and influenced their perceptions of progress in writing. By combining these data sources, the study offered a holistic perspective on the role of ChatGPT in shaping students' self-efficacy in grammar, paragraph structuring, and academic integrity, while also identifying challenges in integrating AI tools into classroom activities.

The first author, serving as the course instructor, documented observations and reflections from each session in a teacher's journal. The second author worked collaboratively with the first author to design the study, including developing the research framework and creating the questionnaire. Together, they analyzed both qualitative and quantitative data, ensuring the findings were robust and valid. ChatGPT was used as a writing assistant, offering real-time feedback on students' drafts. Students interacted with ChatGPT during class by submitting drafts or specific writing queries to receive suggestions on grammar, paragraph structuring, and citation practices. The teacher supervised these interactions and integrated key examples into classroom discussions to enhance students' understanding of the feedback.

Data Collection

In this study, a mixed-methods approach was used, combining both quantitative and qualitative data to closely examine student progress and the use of AI tools over six weeks, from April 9, 2024, to May 14, 2024.

 Quantitative data were collected via a survey, employing a questionnaire comprising six closed-format questions (see Appendix A). The questionnaire was presented bilingually, in both English and the students' native language, Japanese. This design ensured that students could fully understand the questions, thereby minimizing potential misunderstandings and enabling more accurate and meaningful responses. The questionnaire items were designed to evaluate changes in students' self-efficacy related to paragraph structuring, paraphrasing and summarizing, citation, and referencing. To achieve this, the survey was administered at the end of the six-week instructional period that included the introduction of ChatGPT. Students were asked to retrospectively assess their self-efficacy at both the start and the end of the course. This method allowed students to reflect on their perceived progress over the semester. Considering research ethics and participants' privacy, a consent form was also included in the first part of the questionnaire. Responses were measured using two five-point Likert scales: one ranging from 1 (not confident) to 5 (very confident) for questions 1, 3, and 5, and another ranging from 1 (significant decrease in confidence) to 5 (significant increase in confidence) for questions 2, 4, and 6. The two scales were employed to align with the nature of the questions: while questions 1, 3, and 5 assessed static levels of self-efficacy, questions 2, 4, and 6 focused on perceived changes in self-efficacy over the six-week course. The reliability of the scales, as assessed by Cronbach's Alpha, was found to be 0.880 for the first scale (Q1, Q3, Q5) and 0.864 for the second scale (Q2, Q4, Q6), indicating high levels of internal consistency for both scales.

2. The qualitative data came from the teacher's journal, which documented observations and reflections from each session. The journal provided details on how ChatGPT was used in class, students' reactions, and their progress in writing. Each journal entry described key moments in lessons, highlighting how ChatGPT helped with grammar, paragraph structure, and academic integrity.¹ It also noted challenges faced with integrating AI tools into writing activities. The journal, detailed in Appendix B, complements the quantitative data by giving insight into classroom dynamics and students' evolving relationship with AI tools.

Before data collection began, informed consent was obtained from all participants (Appendix C). Students were informed of the study's goal to explore the impact of ChatGPT on their writing skills. All participants were assured of anonymity, voluntary participation, and the importance of their honest feedback in contributing to the study. This data collection method provided a detailed view of student performance and the role of AI tools in supporting their learning.

Data Analysis

The qualitative data were analyzed using thematic analysis (Braun & Clarke, 2019),

following a systematic three-step process. First, the authors conducted an in-depth, iterative reading of the teacher's journal entries, with particular attention to identifying language and expressions that reflected students' improvements in English writing and their perceptions of using ChatGPT. Second, each author independently analyzed the data, organizing the content into meaning clusters and generating preliminary codes, adhering to the thematic analysis guidelines outlined by Braun and Clarke (2019) and Zhang (2022). The authors then engaged in a collaborative process to compare, discuss, and refine these codes, resulting in the identification of several initial codes. In the final step, the authors systematically categorized and organized these codes, which led to the development of the final themes and subthemes.

Both descriptive and inferential statistical methods were employed to analyze the quantitative data. Initially, the Kolmogorov-Smirnov and Shapiro-Wilk tests were conducted to assess the normality of the data distribution. Based on the results of these tests, a nonparametric approach was chosen to compare differences between variables. Specifically, the Wilcoxon signed-rank test was utilized to examine changes in students' self-efficacy before and after the six-week course, with respect to paragraph structuring, paraphrasing and summarizing, as well as citing and referencing according to academic standards.

Finally, the findings from the qualitative and quantitative analyses were integrated, offering a comprehensive perspective on the influence of ChatGPT in the classroom. This integration enabled a deeper understanding of the impact of ChatGPT on students' writing development and overall learning experience.

4. Results

Qualitative Data Analysis

Following the three-step thematic analysis procedure, the two authors found four related texts out of the six teaching journal entries, among which 16 initial codes were identified, which finally resulted in the identification of two themes and five subthemes, as depicted in Table 1.

Table 1

Themes	Subthemes	Example Excerpts		
Students' attitudes towards ChatGPT	1. Students' willingness to use ChatGPT	"The students seemed excited to use ChatGPT." (Week 6)		
Students' improvements in English writing with the assistance of ChatGPT	2. Students' improvements in grammar	"I observed that some students found ChatGPT helpful in better understanding capitalization, punctuation, and subject-verb agreement." (Week 3)		
	3. Students' improvements in paragraph organization	"I observed improvements in their ability to address grammatical errors and structural issues, such as writing a good topic sentence." (Week 4)		
	4. Students' improvements in academic integrity	"I observed that students were becoming more aware of the importance of citing their work correctly and avoiding plagiarism." (Week 6)		
	5. Students benefit from ChatGPT's instructive function	"Some students mentioned that ChatGPT helped them recognize and correct their grammatical errors with its guidance." (Week 4)		

The Results of Thematic Analysis

Quantitative Data Analysis

Following data collection, the dataset was entered into IBM SPSS (Version 29) and meticulously screened for accuracy. One student's questionnaire data was excluded due to his withdrawal from the study. Another student's questionnaire data was also excluded because he chose the same response for all items, which was considered unusable data. No outliers or missing values were detected. To assess the distributional assumptions, the Kolmogorov-Smirnov and Shapiro-Wilk tests were performed (Qin & Bi, 2018). As illustrated in Table 2, the results indicated that the data were not normally distributed (p < .05). Consequently, the Wilcoxon signed-rank test was employed to compare the differences in students' self-efficacy before and after the six-week course.

Descriptive Statistics			8	Tests of Normality				
Items	Mean	Std. Deviation	Skewness	Kurtosis	Kolmogorov-Smirnov		Shapiro-Wilk	
		2001000			Statistic	Sig.	Statistic	Sig.
1	1.882	.993	.695	730	.284	.001	.810	.003
2	2.412	.939	.545	423	.316	.001	.839	.007
3	1.824	.951	.886	109	.277	.001	.809	.003
4	2.118	.781	.672	1.002	.325	.000	.832	.006
5	1.647	.862	.811	-1.147	.362	.000	.703	.000
6	2.235	.903	.054	775	.213	.039	.878	.029

Descriptive Statistics and the Test of Normal Distribution

Note. N = 17. p < .05

Table 2

Table 3 presents significant differences in students' self-efficacy before and after the six-week course in terms of effectively structuring paragraphs (p = .033) and citing and referencing according to academic standards (p = .004). On the other hand, no significant differences were detected in students' self-efficacy before and after the six-week course in terms of paraphrasing and summarizing accurately (p = .132).

Table 3

Wilcoxon Signed Ranks Test Statistics							
	Q1-Q2	Q3-Q4	Q5-Q6				
Z	-2.496	-1.508	-2.887				
Asymp. Sig. (2-tailed)	.013	.132	.004				

The Wilcoxon Test

Note. N = 17. p<.05

Q1-Q2 compare students' confidence in creating an effective paragraph structure at the start and at week six of the course. Q3-Q4 assess confidence in paraphrasing and summarizing accurately, without plagiarism, at the same time points. Q5-Q6 evaluate confidence in citing and referencing accurately according to academic standards.

Following Ellis (2010) and Qin and Bi (2018), the Pearson product-moment correlation coefficient (r) was calculated to measure the effect size (r_1 = .338; r_2 = .456). Both effect sizes were considered medium based on Cohen's standard (1988). However, r_2 was close to 0.5, indicating an almost large effect size. Thus, it can be concluded

that after a six-week writing course assisted by AI, students' self-efficacy in effectively structuring the paragraphs was significantly improved. Also, students' self-efficacy in citing and referencing according to academic standards was greatly enhanced.

5. Findings and Discussion Students' Improvement in Paragraph Organization

In this study, following a six-week writing course, qualitative data indicated that the use of an AI tool resulted in significant improvements in students' self-efficacy regarding paragraph organization, addressing RQ 1. Specifically, the findings suggest that ChatGPT can enhance students' self-efficacy in effectively structuring paragraphs. This result is consistent with the work of Song and Song (2023), where ESL students reported that ChatGPT significantly enhanced their ability to organize paragraphs in writing. These findings can be interpreted through the lens of Vygotsky's sociocultural theory and the concept of ZPD. ChatGPT, functioning as a more knowledgeable other, provided students with immediate and tailored feedback on their writing tasks. This scaffolding enabled students to move beyond their initial capabilities, fostering confidence in structuring paragraphs effectively. For instance, students reported that ChatGPT helped them identify and correct topic sentence issues, which aligns with Vygotsky's emphasis on the importance of guided assistance in learning.

Furthermore, this improvement aligns with Krashen's i+1 Input Hypothesis, which posits that language acquisition occurs when learners are exposed to input slightly beyond their current ability level. ChatGPT offered contextual suggestions and examples that were appropriately challenging, helping students develop a clearer understanding of paragraph structure. This tailored input was particularly effective in bridging the gap between students' existing skills and desired outcomes. This result corroborates the findings of Stojanov (2023), who framed ChatGPT as a tool capable of supporting active learning and engagement within the ZPD. In this study, students benefited from ChatGPT's ability to provide relevant and motivating content, such as generating examples of cohesive paragraph structures. However, similar to Stojanov's caution, some students expressed concerns about becoming overly reliant on AI tools, highlighting the need for careful integration into the learning process.

These qualitative findings suggest that ChatGPT can effectively function as an instructional scaffold, supporting students in developing self-efficacy in paragraph organization. For educators, this highlights the importance of integrating AI tools in a way that complements traditional teaching methods, providing a balance between

guided assistance and opportunities for independent learning.

On the other hand, quantitative data indicated a significant enhancement in students' self-efficacy regarding effective paragraph structuring (r_1 = .338, medium effect size), addressing the sub-question of RQ1. Specifically, the use of AI in writing courses demonstrated a measurable impact on improving students' confidence in organizing paragraphs. The medium effect size observed in this study suggests that ChatGPT had a moderate yet meaningful influence on students' self-efficacy in this area. While the statistical significance is clear, the practical significance lies in ChatGPT's potential to complement traditional teaching methods, particularly in resource-limited environments where immediate feedback is not always feasible. This finding underscores the value of integrating generative AI tools like ChatGPT as a scalable support mechanism in enhancing specific aspects of self-efficacy for ESL learners.

Students' Improvement in Academic Integrity

The qualitative analysis revealed an increased student awareness of proper citation practices and a conscious effort to avoid plagiarism. Correspondingly, quantitative data demonstrated a significant improvement in students' self-efficacy in citing and referencing according to academic standards (r_2 = .456, almost large effect size). Thus, the answer to RQ2 is affirmative: ChatGPT can assist students in improving their selfefficacy in citing and referencing, significantly enhancing their self-efficacy in adhering to academic standards. These findings suggest that integrating ChatGPT into English writing classrooms has substantial potential to promote students' academic integrity. This could help alleviate concerns about the potential negative impact of AI tools on academic integrity in the contemporary educational landscape. Furthermore, this study supports the notion that AI can serve as an effective learning aid if educators guide students on its ethical use, aligning with the research by Sullivan et al. (2023), which advocates for positioning AI as a positive learning tool rather than a means for academic dishonesty.

Students' Benefits from ChatGPT's Instructive Function

The qualitative data from this study indicated that students significantly benefited from using ChatGPT. For instance, according to the teaching journal from Week 4, "Some students mentioned that ChatGPT helped them recognize and correct their grammatical errors with its guidance." Additional examples include observations from Week 5, where "Students used ChatGPT to refine the quality of their sentences," and from Week 6, where it was noted that "some students found ChatGPT useful for brainstorming activities, particularly when working in pairs." These observations align with the findings of Song and Song (2023), which identified AI as a positive guide in enhancing students' English writing skills.

Students' Improvement in Grammar

The qualitative data revealed that students made improvements in grammar, including areas such as subject-verb agreement. This aligns with the findings of Song and Song (2023) and Mahapatra (2024), which suggest that integrating ChatGPT can enhance college students' grammatical accuracy. Similarly, research by Kim et al. (2024) found that GenAI-assisted systems were effective in helping students proofread their grammatical errors, leading to improvements in their language usage. These findings offer encouraging evidence that AI tools can function as effective "educators" in explaining grammatical issues, which may be particularly beneficial for shy students who are hesitant to seek clarification from their instructors.

Students' Attitudes Towards AI

In this study, the qualitative data revealed that students generally held positive attitudes toward the use of AI in English writing courses. For instance, according to the Week 2 teaching journal, "many students were excited to use ChatGPT." By Week 6, some students expressed that ChatGPT was "useful for brainstorming activities, especially when working in pairs." These observations are consistent with the findings of Burkhard (2022), Song and Song (2023), and Mahapatra (2024), all of whom reported that college students had favorable perceptions of using AI tools in their studies.

Students' Improvement in Paraphrasing and Summarizing

No qualitative evidence was found to suggest that integrating ChatGPT into writing courses enhances students' paraphrasing and summarizing skills. Additionally, the quantitative data indicated no significant change in students' self-efficacy in these areas before and after the six-week period. Thus, the answer to RQ3 is negative. This finding contradicts previous research, such as Marzuki et al. (2023), where several teachers reported that AI tools facilitated students' paraphrasing skills. The discrepancy may be attributed to the small sample size in the present study, which may have limited the ability to detect significant differences.

Conclusion

In conclusion, this study explored the impact of ChatGPT on ESL students' selfefficacy of writing skills and academic integrity. The findings showed that the use of ChatGPT enhanced students' confidence in grammar accuracy, paragraph structuring, and in academic integrity. By offering immediate and tailored feedback, ChatGPT supported student learning and played a scaffolding role in improving their self-efficacy in specific writing tasks. This study represents a novel contribution to the field by quantitatively and qualitatively examining the role of generative AI tools in influencing ESL students' perceptions of their writing abilities and ethical practices, an area that has received limited empirical attention. This is preliminary and small-scale research about the relationship between AI tool usage and improvements in students' self-efficacy in writing skills and academic integrity. However, several limitations must be acknowledged. First, the conclusions rely on students' self-reported perceptions of their self-efficacy at the start and end of the semester, which could have been influenced by multiple factors beyond the use of ChatGPT, such as teaching quality, student motivation, and individual learning capabilities. This potential confounding effect may weaken the validity of the findings. Second, the small sample size, lack of random sampling, and limited number of questionnaire items further restrict the generalizability and reliability of the results. Future research is recommended to apply regression analysis to disentangle the specific contributions of AI tools like ChatGPT from other variables influencing self-efficacy in writing. Additionally, experimental designs with larger, randomized samples could provide stronger evidence for the causal impact of generative AI tools on writing outcomes and self-efficacy. While this study highlights the potential of ChatGPT as a valuable learning aid, it does not emphasize concerns about over-reliance on AI tools. This aspect was not a focus of the findings but remains an area for future exploration, as maintaining a balance between AI-assisted learning and fostering independent writing skills is crucial for ensuring academic integrity and long-term student development.

Note

The teacher periodically observed students' screens during class to gain insights into the feedback provided by ChatGPT and asked students' feeling of using ChatGPT.

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Appendix A: Self-Assessment of Writing Skills in ESL Students (English version)

Q1. At the start of the course, how confident were you in creating an effective paragraph structure?

Q2. By week 6 of the course, how has your confidence in creating an effective paragraph structure changed?

Q3. At the start of the course, how confident were you in paraphrasing and summarizing accurately, without plagiarism?

Q4. By week 6 of the course, how has your confidence in accurately paraphrasing and summarizing changed?

Q5. At the start of the course, how confident were you in citing and referencing accurately according to academic standards?

Q6. By week 6 of the course, how has your confidence in citing and referencing accurately changed?

Appendix B: Teacher's Journal

Week 1: Course Introduction (4/9/2024, Tue) In the first session, I introduced the course, focusing on English writing, basic grammar, and sentence structure. I guided the students through the syllabus, set up their accounts on Moodle, and provided the textbook materials. We completed Activities 1-5 in Unit 1: Paragraph Basics. Additionally, we worked on vocabulary and sentence-building exercises, and I administered a pretest to assess their initial skills. For writing and grammar skills, I covered the course structure, basic grammar, and sentence structure. For homework, I asked the students to preview Unit 1: Paragraph Basics activities 6-15 (pp. 10-16) and complete Building Better Vocabulary and Sentence Activities 16-22 (pp. 17-20).

Week 2: Basic Paragraph Structure (4/16/2024, Tue) In the second session, I reviewed the homework for Unit 1: Paragraph Basics activities 16 to 22 with the students. I taught them about the elements that make up a paragraph and helped them analyze sample paragraphs to understand the structure. The grammar focus was on capitalization, punctuation, subject-verb agreement in the simple present, and correcting subject-verb agreements. During this session, I also introduced ChatGPT 3.5, which does not require any payment, and helped the students set it up for initial use in writing and grammar tasks. However, many students were excited to use ChatGPT. I explained to them that they were not allowed to use the application during homework assignments but could use it as a tutor and guide. We reviewed and completed all assigned homework, and I noticed some students were starting to grasp the fundamental concepts, though the class pace needed to be slowed down a bit for others. For homework, I assigned the preview of Unit 2: Developing Ideas (pp. 24-30) and asked them to write Paragraph #1 (100-150 words) on one of the topics from p.21.

Week 3: Developing Ideas for Writing (4/23/2024, Tue) This session focused on teaching the students how to brainstorm ideas in working groups and apply descriptive adjectives in their writing. I also taught them to recognize positive and negative adjectives and how to select a good title for their paragraphs. We started with vocabulary activities, and then the students got into groups to review their homework (activities 6-9), which took about 15 minutes. I explained capitalization, punctuation, and subject-verb agreement to them. Students used ChatGPT to support their writing tasks. I explained to them that they could use the ChatGPT application in conjunction with my guidance. They could also use it for translation services to clarify any technical terms or unfamiliar concepts. I observed that some students found ChatGPT helpful in better understanding capitalization, punctuation, and subject-verb agreement. I emphasized the importance of not becoming too dependent on the tool, stressing that they should use it as an aid rather than allowing it to do their homework for them. The students acknowledged this distinction, and I noticed that some were beginning to show a stronger grasp of these concepts in their writing. I assigned a writing assessment for homework and asked them to complete activities 10-15, including writing their first paragraph. It seemed like the students were a bit more engaged this week, particularly in applying descriptive language. For homework, I asked them to preview Unit 2: Developing Ideas (pp. 31-37) and complete Building Better Vocabulary and Sentence Activities 16-22 (pp. 37-41).

Week 4: Developing Ideas for Writing (Continued) (4/30/2024, Tue) This session focused on reviewing the homework, particularly the Building Better Vocabulary and Sentence Activities 16-22. This session continued exploring English writing, basic grammar, and sentence structure by completing activities 8 to 16. I provided feedback on paragraph structure and vocabulary. Students utilized ChatGPT to revise their work, and I observed improvements in their ability to address grammatical errors and structural issues, such as writing a good topic sentence. Some students mentioned that ChatGPT helped them recognize and correct their grammatical errors with its guidance. We also worked on paragraph exercises, though the session got sidetracked with a geography lesson, which impacted the overall flow of the class. Despite this, I could see some progress in their ability to organize paragraphs more effectively. For homework, I asked them to preview Unit 3: Topic Sentences (pp. 44-51), complete activity 23 (p.42), and write Paragraph #2 (100-150 words) on one of the topics from p.43.

Week 5: Topic Sentences (5/7/2024, Tue) In this session, I reviewed the students' homework and helped them understand and write effective topic sentences. We looked at example topic sentences and focused on writing complex sentences, including understanding independent and dependent clauses, as well as adjective and adverb clauses. I also introduced MLA citation techniques. Students used ChatGPT to refine the quality of their sentences, and I noticed that several of them were beginning to better grasp the nuances of sentence structure and grammar, especially in distinguishing between different types of clauses. We didn't finish activities 16 to 22, so I told them to complete activities 11 to 19 for homework. Overall, the lesson was okay, and the students seemed excited to use ChatGPT. For homework, I assigned Building Better Vocabulary and Sentence Activities 12-18 (pp. 56-59) and asked them to preview pages 62-71 of Unit 4: Supporting and Concluding Sentences. Week 6: Topic Sentences (Continued) (5/14/2024, Tue) In this session, we reviewed the students' homework on building better vocabulary and sentences (activities 12-18). We focused on writing complex sentences, identifying different types of sentences, and correct comma usage. I also emphasized the importance of using citations to avoid plagiarism and guided students through citation exercises using ChatGPT. We reviewed how to use MLA format, including visiting Purdue University's online guide on MLA formatting. I noted that while ChatGPT could assist in understanding citation formats, it sometimes made errors, such as incorrectly italicizing parts of references. I highlighted these issues, and I observed that students were becoming more aware of the importance of citing their work correctly and avoiding plagiarism. Some students found this exercise particularly helpful as they practiced in-text citations and creating a works cited page. I noticed that some students found ChatGPT useful for brainstorming activities, especially when working in pairs. While the citation exercise was challenging for many, I noticed that some students showed improvements in their citation skills. Afterward, students completed a post-test survey. Additionally, I asked them to complete a paragraph but didn't assign any textbook exercises, which I plan to do next session. I gave them supplementary reading for Unit 3 on topic sentences, which we will cover and explain next session. For homework, I asked them to preview Unit 4: Supporting and Concluding Sentences (pp. 62-70).

Appendix C: Consent Form (English Version)

Study Purpose

This study investigates how AI tools contribute to improving the writing skills of ESL students while maintaining academic integrity.

Data Protection and Privacy

Your personal information will be strictly protected. Any data you provide, such as survey responses or written work, will be anonymized and cannot be traced back to you, ensuring your privacy is fully maintained.

Use of Data

The collected data will be used to analyze the effectiveness of English writing education. Insights from this study may be shared with educators and researchers to improve educational practices. However, your personal information will never be disclosed.

Voluntary Participation

Participation in this study is completely voluntary. You may withdraw at any time without any negative consequences or impact on your academic standing. If you choose to withdraw, you may request the removal of any data you have provided.

Acknowledgment

By participating in this study, you acknowledge that you have been informed about the purpose, procedures, and use of your data. If you have any questions or need further information, please contact [massoudosn@gmail.com]