Journal of Posthumanism
2024
Volume: 4, No: 1, pp. 736–746
ISSN: 2634-3576 (Print) | ISSN 2634-3584 (Online)
posthumanism.co.uk

DOI: https://doi.org/10.63332/joph.v4i1.4190

Text Production Versus Text Orchestration: The Efficacy of ChatGPT in EFL Academic Writing

Bandar Aljafen[1]

Abstract

EFL writing in educational settings has been greatly impacted by AI tools as it has transitioned from independent text production to text orchestration, a process in which students utilize AI to organize their writing, improve language use, and generate ideas. Integration of new technologies in education calls for careful evaluation of its pros and cons. This quasi-experimental study analyzes how EFL learners' text production and writing quality are affected by ChatGPT-mediated writing. The study sample of 102 intermediate EFL students from Qassim University were assigned in equal numbers to two groups, viz., control (CG) and experimental (EG). Over a period of ten weeks, participants undertook academic essay writing based on a standardized assessment system with CG using conventional educational resources and EG using ChatGPT for idea generation, linguistic inputs, and structural organization. Writing performance was evaluated using the IELTS analytic rubric that assesses four parameters of writing output. Writing performance of both groups and role of ChatGPT in aiding the EG were examined using one-way ANOVA, independent samples t-tests, and descriptive statistics using IBM SPSS (Version 26). Results indicated higher mean scores in the EG than CG across all categories with statistically significant differences across groups ($t = 4.86–6.18$, $p < 0.001$; $F = 18.72$, $p < 0.001$). The study concluded that AI-mediated writing significantly improves writing organization, linguistic accuracy, and vocabulary use, making a case for transitioning EFL learners' writing from independent text production to AI-assisted text orchestration. The study has implications for many stakeholders including teachers, edtech developers, and learners.

Keywords: *EFL writing, ChatGPT, AI in language learning, writing quality, IELTS.*

Introduction

Traditional EFL Writing Instruction and Academic Writing

Academic writing is a significant component in the EFL higher education curriculum as its objective is to empower non-native speakers/ learners of English to share ideas, argue, and engage in scholarly exchange (Mustafa et al., 2022; Selim, 2024). Successful academic writing is not only about linguistic competence but also the capacity to arrange information intelligibly and construct a cohesive argument, while also adhering to academic norms. Despite classroom experiments with different approaches to language learning and teaching, EFL learners continue to face challenges in vocabulary use, grammatical appropriacy, and organization of thoughts, shortcomings that affect the quality and clarity of their writing (Aldabbus & Almansouri, 2022; Ramzan et al., 2023; Aminah & Supriadi, 2023).

Traditional approaches to writing in EFL have focused on text production process in which learners are left to their own devices to produce the content on their own, manage the writing structure, and refine their drafts with the help of iterative writing practice (Yousofi, 2022). The

[1] Department of English Language and Literature, College of Languages and Humanities, Qassim University, Buraydah, Saudi Arabia; Email: Jfn@qu.edu.sa

process promotes critical thinking, language proficiency, and learners' active involvement in the writing process (Zou et al., 2023.). In this approach, writing development is facilitated by teacher feedback, peer review, and structured writing activities to enhance learners' skills to develop meaningful, cohesive, and coherent texts (Rizkiani et al., 2024).

Emergence of AI-Assisted Writing in EFL

The development of AI technology which gained momentum in the past few years created new possibilities to assist writing. Two AI tools that register high usage are ChatGPT and Grammarly, both of which are equipped with grammar check, vocabulary recommendation, sentence reorganization, and idea generation features (Williams, 2024). With their superior instant feedback and assistance mechanisms through the writing process, these applications are equally popular with language learners and teachers which has led to globally positive attitudes towards AI applications as essential components of contemporary academic writing (Pitukwong & Saraiwang, 2024). Moreover, the complexity of writing in a foreign language and the scaffolding of AI applications are gradually altering the nature of EFL writing (Liu et al., 2024). Instead of creating the text by themselves, writers can rely on AI systems for hints, reorganization of information, and refinement of language (Warschauer et al., 2023). This learner-machine interaction demonstrates a more general change in writing practices with technology adopting a supporting role and learners feeling less intimidated by the exercise. In addition, this giant leap in the writing classroom mandates that educators and researchers adjust education pedagogy and philosophy to align with digitization in writing (Johinke et al., 2023; Khalifa & Albadawy, 2024; Al-Sofi, 2024; Yang & Lin 2025).

Aim of the Research

This study aims to examine how AI-mediated writing affects EFL learners' academic writing skills. It also aims to evaluate the effects of AI-assisted text orchestration versus conventional independent text production on writing quality, organization, vocabulary utilization, and grammar application.

Previous Research

Tsai et al. (2024) reports that ChatGPT-assisted essay revisions resulted in considerably higher scores across vocabulary, grammar, organization, and content in a controlled research done in February 2023 with 44 EFL college students. Since such help does not fully reflect learners' true writing competence, the improvements were particularly noticeable among lower-scoring students, changing grade distributions and raising issues about fairness in writing evaluation.

Mohammad (2024) assessed the effects of Quillbot on twenty-five EFL students' writing and paraphrasing in a pre-post-test quasi experimental study. Findings were triangulated using data from semi-structured interviews and writing tests. A dependent-sample t-test showed improved writing output with the use of Quillbot especially in summarizing, grammar usage, rewriting sentences, paraphrasing, apart from enhanced overall writing quality. However, the study had a small sample size with no controls for comparison which restricted the application of results to other contexts.

In Mleiki's (2024) semi-structured interviews, AI influences the writing skills of EFL learners. The results showed that students' confidence, writing skills, and critical thinking are improved by AI. However, overreliance on AI can undermine critical thinking and compromise academic achievement. The study provides valuable insights into finding a balance between AI and traditional methods of teaching English as a foreign language.

Zheng and Drybrough (2023) analyzed the language translation skills of five Chinese doctoral students at a British university during dissertation planning, note-taking, and drafting. This study

presented six language translation skills that helped students manage the recursive writing process and achieve immediate and broader writing goals. This course was found to empower teachers to facilitate change in student work and challenges the conventions of a monolingual classroom.

Research Gap

The previous section on research on AI as an educational tool indicates dearth of studies using controlled experimental designs and predetermined assessment criteria to compare AI-based writing strategies with traditional, solo writing process. Therefore, there is a need to determine how AI-mediated writing techniques enhance the writing quality of EFL students and enable the transition in academic writing from text generation to AI-assisted text orchestration (Mleiki, 2024; Zheng & Drybrough, 2023).

This research resolves the identified gap by using a longitudinal quasi-experimental approach to investigate how AI-assisted writing affects EFL learners' academic writing skills. In contrast to previous studies, this research included a larger cohort of learners, and it measures writing improvement using quantitative statistical analysis in a two group pre-post-test design. Thus, this study provides systematic evidence on AI-mediated writing quality using the IELTS analytic rubric and the ease of switching to AI-assisted text orchestration rather than independently creating texts.

Methodology

In a longitudinal quasi-experimental design this study enrolled 102 Saudi intermediate EFL learners, randomly assigned in equal numbers to EG and CG. The two groups were assigned standardized academic essay writing tasks over a ten-week period. The EG employed ChatGPT to help with idea generation, language improvement, and content structuring whereas the CG used conventional instruction in writing. After the writing performance was measured using the IELTS analytical rubric, one-way ANOVA, independent sample t-tests, and descriptive statistics were performed.

Participants

This research was conducted at Qassim University, Saudi Arabia, during the first semester of the year 2024. The research was implemented within the Academic Writing course (ENG 247) offered to undergraduate EFL students. The course focuses on developing students' academic writing abilities, including essay organization, argument development, vocabulary use, and grammatical accuracy. The research was carried out during the semester in a number of course sections, each of which normally has more than twenty-five students enrolled in it. Thus, an adequate sample size was ensured while preserving the real classroom learning experience by integrating multiple course content. The research was embedded within regular course instruction and required participants to undertake structured academic writing tasks as part of their coursework. During the intervention period, students engaged in essay-based writing activities while interacting with ChatGPT which is an AI writing tool to support idea generation, language refinement, and structural organization. This classroom-based implementation allowed the research to examine how AI tools influenced EFL learners' writing practices and the transition from independent text production to AI-assisted text orchestration in an authentic academic context.

Intervention Phase (Ten Weeks)

The two groups in this study engaged in regular academic writing over ten weeks. The EG were instructed to use ChatGPT for generating ideas, improving language, and structuring the essays. It may be added here that the group was already familiar with the application as much as the CG.

However, prior to the study, they were not permitted to use AI for writing assignments as part of university regulations. At the same time, the researcher delivered a brief talk on ethical use of AI as a writing tool and informed the participants that all submissions would be subjected to plagiarism checks to ensure they used ChatGPT only as an aid and not as the writer. On the other hand, the CG performed the same writing tasks using traditional writing materials, which included textbooks, lecture notes, and teacher feedback. The similarity between the situations in the writing schedule and task requirement ensured level ground for the groups leaving no scope for interference from any factor other than the intervention which ensured the study generated reliable results.

Academic Writing Tasks

The participants were assigned a set of academic essay writing tasks simulating the IELTS standardized English writing test during the intervention period. All essays were part of the participants' course work, in other words, they were only assigned tasks that are designed specifically for them.

Writing Evaluation

The essays were assessed using the IELTS analytic rubric for writing comprising of TR, CC, LR, and GA. All the essays were graded per the evaluation criteria to ensure clarity and objectivity in the evaluation process. This methodology made it possible to have a more in-depth analysis of various facets of writing quality instead of using a single aggregate scoring value. Several writing samples of each participant were recorded to trace the dynamics of the writing performance, as well as to infer whether AI-assisted writing can lead to the quantitative enhancement of EFL learners in academic writing skills oriented towards AI-assisted text orchestration.

Demographic Characteristics

Table 1 and Figure 1 present the participants' demographic information.

Table 1: Participants' Demographic Information

Variable	Category	Frequency (n)	Percentage (%)
Group	EG	51	50.0
	CG	51	50.0
Gender	Female	55	53.9
	Male	47	46.1
Age	18–20 years	41	40.2
	21–23 years	39	38.2
	24–26 years	22	21.6
Academic Level	Undergraduate	75	73.5
	Postgraduate	27	26.5
English Learning Experience	5–7 years	46	45.1
	8–10 years	56	54.9

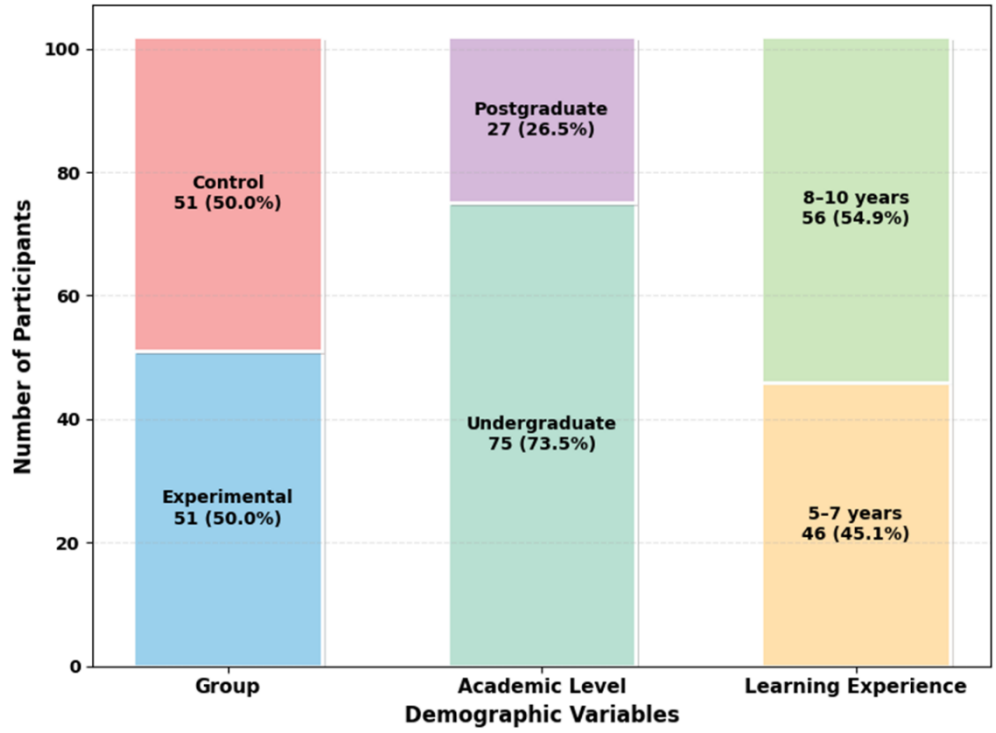

Figure 1: Distribution of participants across key demographic variables

Questionnaire

Based on earlier literature and ELT experts' feedback, a structured questionnaire was used to examine the participants' views and experiences of ChatGPT on EFL academic writing quality. Table 2 shows that the questionnaire gathered information on six aspects of the AI-based writing exercise: idea generation, writing confidence, language improvement, writing process, motivation, and attitudes towards AI-assisted writing. Each item was scored using a five-point Likert scale, where 1 represented *strongly disagree* and 5 represented *strongly agree*. This exercise was undertaken at the conclusion of the intervention requesting the participants to answer the survey to express their opinions about the usefulness and efficacy of ChatGPT as a tool in academic essay writing. Descriptive statistics are applied to identify general tendencies.

Table 2: Questionnaire for assessing attitudes to AI-mediated writing practices

Variable	No.	Question
Idea Generation	Q1	Does using ChatGPT help you generate ideas for academic writing?
	Q2	Does ChatGPT help you organize your essays more effectively?
Writing Confidence	Q3	Does ChatGPT make academic writing tasks easier to complete?
	Q4	Do you feel more confident when writing with AI support?

Language Improvement	Q5	Does ChatGPT help you improve your vocabulary in academic writing?
	Q6	Does ChatGPT help you identify and correct grammatical errors?
Writing Process	Q7	Does ChatGPT encourage you to revise and improve your writing?
	Q8	Do you spend more time developing ideas when using AI tools?
Motivation and Engagement	Q9	Does using ChatGPT increase your motivation to practice English writing?
	Q10	Does AI support help you understand how to improve your writing skills?
Attitude toward AI Writing	Q11	Do you think using AI technologies for academic writing is beneficial?
	Q12	Do you want to keep writing with AI technologies in the future?

Data Analysis

Quantitative data in this study was analyzed using IBM SPSS, Version 26 to identify differences between CG and EG in academic essay writing. Descriptive statistics were used in the first phase to summarize the score distribution and quantify overall writing performance. One-way ANOVA and independent samples t-tests were then used to assess the statistical significance of the differences in the groups' writing scores.

Descriptive Statistics

Descriptive statistics were used to analyze the writing performance of EG and CG by computing group averages. The mean (M) was calculated with

$$M = \frac{\sum Z}{N} \quad (1)$$

In Equation (1), Z stands for individual scores, and N shows the total number of observations.

One-way ANOVA

One way ANOVA was used to find if there were statistically significant differences between the performance of EG and CG and results were found as follows:

$$F = \frac{MS_{between}}{MS_{within}} \quad (2)$$

MS_{within} denotes the variance within groups, and $MS_{between}$ indicates the variance between groups. F stands for the F-statistic (F-value) given in Equation (2).

Independent Samples t-tests

The mean writing scores of EG and CG were compared using two samples t-test to ascertain whether the differences were statistically significant.

$$t = \frac{M_1 - M_2}{\frac{SD_1^2}{n_1} + \frac{SD_2^2}{n_2}} \quad (3)$$

In Equation (3), M_1 and M_2 represent group means, SD_1^2 and SD_2^2 are standard deviations, n_1 and n_2 are sample sizes, and t stands for the t-statistic (t-value).

Results

The findings section displays the statistical analysis of EFL students' writing performance in this study. All quantitative data was examined using IBM SPSS (Version 26). Descriptive statistics were initially used to determine the mean scores for each of the IELTS writing parameter in the rubric. The effect of ChatGPT-mediated writing on TR, CC, LR, and GA was assessed using one-way ANOVA and independent samples t-test to verify if there were any significant changes between the groups' performances.

Descriptive Statistics

Findings from descriptive statistics show that EG outperformed CG in all writing criteria. As presented in Table 3 and Figure 2, EG obtained higher mean scores in TR, CC, LR, GRA, and OWS. These results indicate that AI-mediated writing improved EFL learners' writing performance.

Table 3: Descriptive Statistics of writing performance scores

Writing Criteria	Group	N	Mean (M)	SD	Minimum	Maximum
TR	EG	51	6.72	0.58	5.50	7.80
	CG	51	6.15	0.61	5.00	7.30
CC	EG	51	6.85	0.55	5.70	7.90
	CG	51	6.20	0.63	5.10	7.40
LR	EG	51	6.90	0.52	5.80	8.00
	CG	51	6.18	0.59	5.20	7.50
GRA	EG	51	6.78	0.57	5.60	7.90
	CG	51	6.12	0.64	5.10	7.40
OWS	EG	51	6.81	0.49	5.90	7.95
	CG	51	6.16	0.56	5.20	7.45

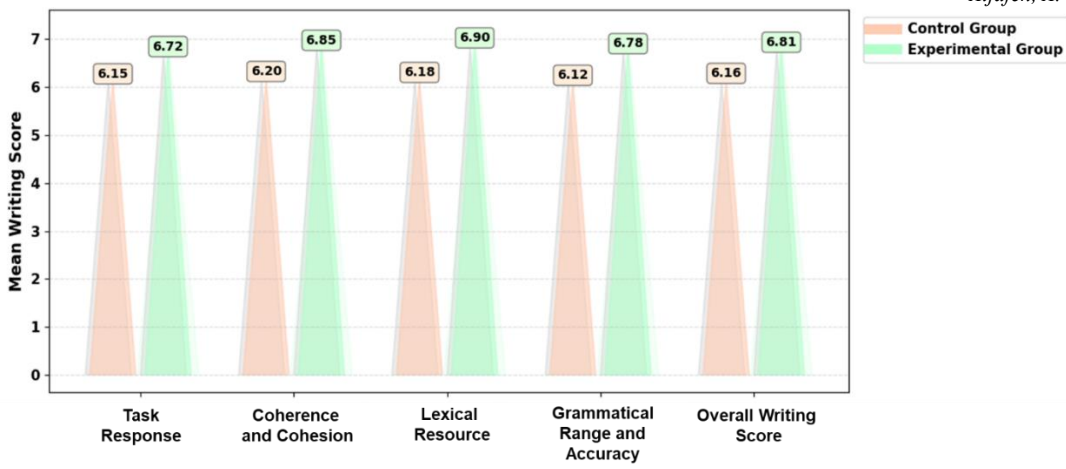

Figure 2: Mean writing scores of EG and CG across six writing criteria

One-Way ANOVA

One-way ANOVA was conducted to see whether writing performance of EG and CG differed significantly. Statistical findings showed that the two groups differed significantly indicating that ChatGPT-mediated writing supported EFL learners' output when compared to traditional writing techniques (Table 4).

Table 4: Results of ANOVA

Source of Variation	df	MS	SS	F	Sig. (p-value)
Between Groups	1	14.86	14.86	18.72	0.000
Within Groups	100	0.79	79.38	-	-
Total	101	-	94.24	-	-

Note: Mean Square = MS, Sum of Squares = SS

Independent Samples t-test

Comparison of writing performance of CG and EG was done using independent samples t-test. Results showed significant differences across all six writing criteria. EG had higher post-test scores in TR, CC, LR, GRA, and OWS compared to CG indicating that ChatGPT-mediated writing significantly improved EFL learners' writing performance (Table 5 and Figure 3).

Table 5: Pre-test and post-test statistical comparison of writing performance across groups

Writing Criteria	CG Pre-test (n = 51) M ± SD	CG Post-test (n = 51) M ± SD	EG Pre-test (n = 51) M ± SD	EG Post-test (n = 51) M ± SD	t-value	p-value
TR	6.08 ± 0.60	6.15 ± 0.61	6.10 ± 0.59	6.72 ± 0.58	4.86	<0.001
CC	6.12 ± 0.62	6.20 ± 0.63	6.15 ± 0.60	6.85 ± 0.55	5.21	<0.001
LR	6.10 ± 0.58	6.18 ± 0.59	6.12 ± 0.57	6.90 ± 0.52	6.03	<0.001
GRA	6.05 ± 0.63	6.12 ± 0.64	6.07 ± 0.61	6.78 ± 0.57	5.01	<0.001
OWS	6.07 ± 0.55	6.16 ± 0.56	6.09 ± 0.54	6.81 ± 0.49	6.18	<0.001

Note: M ± (SD) = Mean ± Standard Deviation

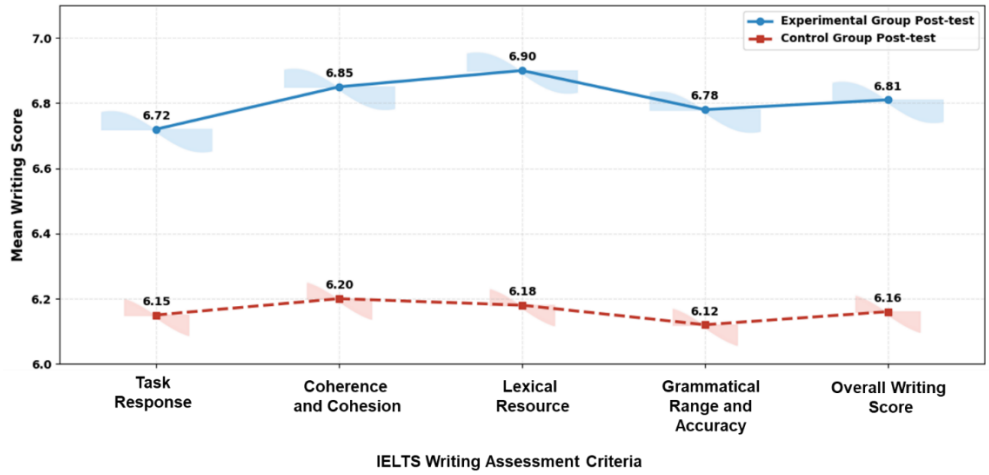

Figure 3: Mean writing scores across six writing criteria

Discussion

A longitudinal quasi-experiment method was used in this study with 102 intermediate EFL students assigned to EG and CG. While CG completed traditional writing assignments without AI assistance, EG used ChatGPT for the same tasks over a period of ten weeks. Writing performance was evaluated using the IELTS analytical rubric and the results were analyzed using one-way ANOVA, independent samples t-tests, and descriptive statistics.

The study overcame shortcomings of previous studies by using a large sample of 102 EFL students and established a controlled quasi-experimental design. The ten-week longitudinal writing activity provided a long-term, ChatGPT-mediated learning intervention to EG. Furthermore, the research provided a more in-depth evaluation of the implications of AI technology on the advancement of the EFL academic writing by integrating both qualitative examination of the ChatGPT-mediated writing experiences and quantitative information analysis.

Conclusion

This study addresses the dearth of empirical data on the contribution of AI tools to enhancing Saudi EFL learners' academic writing abilities. Having identified gaps in earlier studies, this quasi-experimental study was conducted with 102 EFL students over ten weeks.

Results showed that EG outperformed CG (6.15-6.20 range) on each of the six writing criterion: including TR (6.72), CC (6.85), LR (6.90), and GRA (6.78). CG recorded an average of 6.16, whereas EG demonstrated an overall improvement of 6.81. Significant differences were demonstrated using statistical analysis ($t = 4.86–6.18$, $p < 0.001$; $F = 18.72$). These results show that ChatGPT-mediated writing greatly improves the writing quality of EFL students and facilitates the transition from text generation to AI-assisted text orchestration.

Limitations and Future Scope

The study has some limitations: Its scope was narrowed due to focus on specific course content which does not reflect upon improvements in authentic writing. Furthermore, the long-term growth of academic writing cannot be adequately captured by a short instruction period and emphasis on certain writing standards. Future studies can use larger and more diverse sample sizes, longer research periods, and additional AI writing tools to better understand the long-term effects of AI-mediated writing on EFL learners.

Nomenclature and Acronyms

Table 6 presents the acronyms and symbols used in the research along with their full forms and descriptions for clarity.

Table 6: List of Acronyms and Symbols Used in the Research

Acronym / Symbol	Description
AI	Artificial Intelligence
EFL	English as a Foreign Language
TR	Task response
LR	Lexical resource
IELTS	International English Language Testing System
CC	Coherence and cohesion
GA	Grammatical accuracy
ANOVA	One-way analysis of variance
GRA	Grammatical Range and Accuracy
IBM	International business machines
EG	Experimental group
CG	Control Group
SPSS	Statistical Package for the Social Sciences

Acknowledgement:

The Researchers would like to thank the Deanship of Graduate Studies and Scientific Research at Qassim University for financial support (QU-APC-2024).

References

Aldabbus, S., & Almansouri, E. (2022). Academic writing difficulties encountered by university EFL learners. *British Journal of English Linguistics, 10*(3), 1–11.

Al-Sofi, B. B. M. A. (2024). Artificial intelligence-powered tools and academic writing: To use or not to use ChatGPT. *Saudi Journal of Language Studies, 4*(3), 145–161. https://doi.org/10.1108/SJLS-06-2024-0029

Aminah, M., & Supriadi, T. F. (2023). Writing difficulties faced by English foreign language students. *Jurnal Ilmiah Hospitality*, *12*(1), 253-262. https://doi.org/10.47492/jih.v12i1.2663

Johinke, R., Cummings, R., & Di Lauro, F. (Eds.). (2023). Reclaiming the technology of higher education for teaching digital writing in a post-pandemic world a post-pandemic world. *Journal of University Teaching and Learning Practice*, *20*(2), 1-16.

Khalifa, M., & Albadawy, M. (2024). Using artificial intelligence in academic writing and research: An essential productivity tool. *Computer Methods and Programs in Biomedicine Update, 5*, 100145. https://doi.org/10.1016/j.cmpbup.2024.100145

Liu, G. L., Darvin, R., & Ma, C. (2024). Unpacking the role of motivation and enjoyment in AI-mediated informal digital learning of English (AI-IDLE): A mixed-method investigation in the Chinese context. *Computers in Human Behavior, 160*, 108362.

Mleiki, A. K. (2024). Integrating AI into EFL learning: ChatGPT's impact on writing skills. *International Journal of English and Education, 13*(3), 112–126.

Mohammad, T. (2024). Challenging traditional EFL writing classroom using AI-mediated tool: A paradigm shift. *World Journal of English Language, 14*(2). https://doi.org/10.5430/wjel.v14n2p211

Mustafa, A., Arbab, A. N., & El Sayed, A. A. (2022). Difficulties in academic writing in English as a second/foreign language from the perspective of undergraduate students in higher education institutions in Oman. *Arab World English Journal, 13*(3), 41–53. https://doi.org/10.24093/awej/vol13no3.3

Pitukwong, K., & Saraiwang, S. (2024). Exploring the effectiveness of digital writing tools on Thai EFL students' writing. *Contemporary Educational Technology, 16*(3), ep519.

Ramzan, M., Mushtaq, A., & Ashraf, Z. (2023). Evacuation of difficulties and challenges for academic writing in ESL learning. *University of Chitral Journal of Linguistics and Literature*, *7*(I), 42-49.

Rizkiani, S., Maulana, A., Resmini, S., & Satriani, I. (2024). Examining the use of AI tools in academic writing: Effects on the critical thinking skills of EFL learners. *JELA (Journal of English Language Teaching, Literature and Applied Linguistics), 6*(2), 111–121. https://doi.org/10.37742/jela.v6i2.155

Selim, A. S. M. (2024). The transformative impact of AI-powered tools on academic writing: Perspectives of EFL university students. *International Journal of English Linguistics, 14*(1), 14. https://doi.org/10.5539/ijel.v14n1p14

Tsai, C. Y., Lin, Y. T., & Brown, I. K. (2024). Impacts of ChatGPT-assisted writing for EFL English majors: Feasibility and challenges. *Education and Information Technologies, 29*(17), 22427–22445.

Warschauer, M., Tseng, W., Yim, S., Webster, T., Jacob, S., Du, Q., & Tate, T. (2023). The affordances and contradictions of AI-generated text for writers of English as a second or foreign language. *Journal of Second Language Writing*, *62*.

Williams, W. (2024). *A new AI challenger—Grammarly emerges as surprising challenger to Copilot, ChatGPT & Gemini, exclusive TechRadar poll finds*. *TechRadar*.

Yang, W., & Lin, C. (2025). Translanguaging with generative AI in EFL writing: Students' practices and perceptions. *Journal of Second Language Writing*, *67*, https://doi.org/10.1016/j.jslw.2025.101181

Yousofi, R. (2022). Grammarly deployment (in) efficacy within EFL academic writing classrooms: An attitudinal report from Afghanistan. *Cogent Education, 9*(1). https://doi.org/10.1080/2331186X.2022.2142446

Zheng, Z. Z., & Drybrough, A. G. (2023). Translanguaging in the academic writing process: Exploring Chinese bilingual postgraduate students' practices at a British university. *Journal of English for Academic Purposes, 65*, 101269.

Zou, D., Xie, H., & Wang, F. L. (2023). Effects of technology enhanced peer, teacher and self-feedback on students' collaborative writing, critical thinking tendency and engagement in learning. *Journal of Computing in Higher Education*, *35*(1), 166-185. https://doi.org/10.1007/s12528-022-09337-y