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INTEGRATING AI-POWERED WRITING ASSISTANTS TO ENHANCE EFL STUDENTS' ACADEMIC WRITING SKILLS: A MIXED-METHODS STUDY IN HIGHER EDUCATION

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ABSTRACT

Purpose: This study investigates the impact of AI-powered writing assistants on the academic writing performance of EFL students in higher education and explores students' perceptions of these tools as part of their learning process.
Design/methodology/approach: A convergent mixed-methods design was employed involving 25 undergraduate students from the English Education Program at STKIP Muhammadiyah Sungai Penuh. Students participated in pretest–posttest writing tasks using Grammarly Premium and ChatGPT, followed by semi-structured interviews. Writing performance was assessed using a rubric adapted from IELTS Task 2, and data were analyzed using paired-samples t-tests and thematic analysis.
Findings: The results revealed a statistically significant improvement in students' academic writing, with the mean score increasing from 63.0 to 80.5 ($p < .001$, $d = 1.75$). Gains were particularly strong in task response, coherence, and lexical resource. Interview data showed that students perceived AI tools as supportive and non-threatening, increasing their confidence, writing autonomy, and awareness of academic tone. However, concerns were raised regarding over-reliance and ethical usage.
Originality/value: This study contributes to the growing literature on AI in language learning by providing empirical evidence on the effectiveness and perception of AI-assisted writing in EFL contexts. It also highlights the importance of guided, ethical, and reflective integration of AI tools in writing instruction to maximize pedagogical outcomes.

1. Introduction

In the evolving landscape of digital education, the development of academic writing skills remains a critical component of English as a Foreign Language (EFL) learning, particularly in higher education contexts. Academic writing not only reflects students' mastery of linguistic structures but also demonstrates their ability to express critical thought, synthesize ideas, and engage with scholarly discourse. Despite the increased emphasis on writing in EFL curricula, many university students continue to face challenges in producing well-structured, coherent, and grammatically accurate academic texts. These difficulties often stem from limited exposure to authentic writing models, inadequate feedback, and a lack of autonomous learning strategies.

In recent years, the integration of technology-enhanced learning tools has offered promising avenues to address such pedagogical challenges. Among these innovations, Artificial Intelligence (AI)-powered writing assistants, such as Grammarly, QuillBot, and more recently, ChatGPT, have emerged as widely used tools in academic settings. These

platforms offer immediate, personalized feedback on grammar, vocabulary, coherence, tone, and even content organization—factors crucial to academic writing competence. Moreover, they are accessible, learner-friendly, and capable of supporting independent learning beyond the classroom. However, while their popularity is growing, the empirical investigation into their actual pedagogical effectiveness in the EFL context remains relatively underdeveloped.

Previous studies have examined the impact of digital feedback tools on writing development (e.g., Wang et al., 2020; Lee & Park, 2021), but few have investigated the role of AI-powered assistants as integrated components of writing instruction. Furthermore, existing research often focuses on error correction and surface-level improvement, overlooking how these tools influence higher-order writing skills, such as argumentation, academic tone, and logical flow. In addition, students' perceptions of such tools—whether they foster dependency, promote autonomy, or influence motivation—remain largely unexplored in non-native English contexts, particularly in Southeast Asia.

This study addresses several research gaps. First, it explores the effectiveness of AI-powered writing assistants in improving the academic writing performance of EFL students. Second, it examines students' perceptions of using such tools as part of their academic writing process. Third, it investigates the pedagogical implications of integrating AI tools in formal classroom instruction. By doing so, this study contributes to the growing body of literature on AI-enhanced language learning and seeks to bridge the gap between technological innovation and practical EFL pedagogy. The rationale for focusing on academic writing is twofold. From a linguistic standpoint, academic writing represents the most cognitively demanding skill among the four language competencies—requiring control over syntax, vocabulary, cohesion, and argumentation. From a professional standpoint, writing is a vital tool for students in higher education to participate in scholarly activities, such as paper publication, thesis writing, and international communication. Enhancing these skills, therefore, directly supports students' academic success and global competitiveness.

The novelty of this study lies in its integration of AI writing tools not as supplementary aids, but as core pedagogical components within a structured writing curriculum. By employing a mixed-methods design, the study not only evaluates the quantitative improvement in students' writing performance, but also investigates the qualitative dimension—namely, how students engage with, perceive, and reflect on their use of AI tools in the learning process. This holistic approach allows for a deeper understanding of the educational potential and limitations of AI in EFL settings.

In summary, this research aims to investigate the following questions: 1) To what extent does the integration of AI-powered writing assistants improve EFL students' academic writing performance? 2) How do students perceive the role of AI writing tools in their academic writing development? 3) What are the pedagogical implications of incorporating AI writing assistants into EFL writing instruction?

By addressing these questions, the study offers practical insights for language educators, curriculum designers, and EdTech developers. It also contributes to ongoing discussions about the ethical, pedagogical, and cognitive implications of AI integration in language education. As we move toward an era where artificial intelligence is becoming increasingly pervasive in educational contexts, understanding how to leverage its benefits—while minimizing its risks—is essential for designing effective, equitable, and future-ready language learning environments.

2. Literature Review

The integration of digital technologies in language education has grown significantly over the past decade, particularly with the rise of artificial intelligence (AI)-based tools. In the context of English as a Foreign Language (EFL), technology-assisted writing instruction has gained increasing attention, given its potential to address key writing challenges such as lack of feedback, low motivation, and structural errors (Hyland & Hyland, 2019; Saeli & Cheng, 2020). However, despite numerous studies on Computer-Assisted Language Learning (CALL), few have focused specifically on the pedagogical impact of AI-powered writing assistants in formal academic writing instruction for EFL students.

2.1 Academic Writing in EFL Contexts

Academic writing is widely recognized as the most cognitively demanding skill for EFL learners. It requires not only mastery of grammar and vocabulary but also familiarity with genre conventions, critical thinking, logical organization, and academic tone (Nassaji & Tian, 2019). Many EFL learners struggle to produce coherent arguments, use academic expressions accurately, and revise their drafts effectively without guided instruction or timely feedback (Fang & Wang, 2021). Traditional feedback methods, such as teacher comments or peer reviews, although beneficial, are often limited by time, scope, and consistency (Shintani, 2016).

2.2 Digital Feedback and Writing Tools

Over the last few years, the use of digital feedback tools has been proposed as a viable solution to support writing development. Tools such as Grammarly, Microsoft Editor, and QuillBot provide instant corrections, vocabulary suggestions, and readability scores that help learners revise their writing in real time. According to Ranalli et al. (2021), the immediate nature of such feedback encourages learner autonomy, supports metalinguistic awareness, and reduces anxiety in the writing process. However, these tools have also been criticized for focusing primarily on surface-level features (grammar, spelling) rather than deeper writing dimensions like cohesion, argument development, and critical stance (Bai & Wang, 2023).

2.3 AI-Powered Writing Assistants

AI-powered writing assistants represent a more advanced evolution of digital tools, leveraging natural language processing (NLP) and machine learning to provide adaptive, context-sensitive feedback. Unlike traditional grammar checkers, AI tools can assess tone, style, coherence, and even semantic appropriateness. Tools like Grammarly Premium, ChatGPT, and Writefull exemplify this trend. For instance, recent studies by Dwivedi and Krishnan (2023) and Zou et al. (2022) found that students using AI-based tools showed improvements not only in grammatical accuracy but also in textual organization and vocabulary richness.

Despite their growing popularity, research on the educational impact of AI writing tools is still emerging. Several questions remain unanswered, such as how these tools affect student motivation, writing habits, and self-revision strategies (Li & Zhang, 2020). There is also a debate on whether such tools promote dependency or foster independent learning, and how instructors should ethically and pedagogically integrate them into formal instruction (Godwin-Jones, 2021).

2.4 Learner Perceptions and Pedagogical Integration

Learners' perceptions play a crucial role in the adoption and success of technological interventions. According to Lin and Lee (2022), students tend to view AI tools as supportive but may lack understanding of how to use them strategically. Moreover, without guided instruction, students may misuse AI tools by over-relying on automatic suggestions without critically evaluating their writing. This underscores the need for pedagogically informed integration of AI writing tools into classroom instruction, rather than using them as standalone or extracurricular resources.

Studies by Yoon and Jo (2023) emphasize that teacher mediation and scaffolding are critical in helping students interpret AI-generated feedback, reflect on their writing process, and transfer learned strategies to future tasks. Furthermore, integrating AI tools into process-based writing instruction—prewriting, drafting, revising, and reflecting—may offer the most comprehensive support for EFL academic writers.

2.5 Research Gaps and Positioning

While the use of AI-powered writing tools is gaining momentum globally, empirical studies that explore their systematic integration into EFL academic writing classrooms remain limited, especially in Southeast Asian contexts. Much of the current literature emphasizes technical affordances, yet lacks robust investigation into learning outcomes, student engagement, and instructional design surrounding these tools. In addition, there is a shortage of mixed-methods studies that combine quantitative writing performance data with qualitative insights into students' experiences, perceptions, and reflections. This methodological gap limits our understanding of how AI writing tools function as pedagogical agents rather than mere editing software. Taken together, the literature suggests that AI-powered writing assistants hold strong potential to support EFL academic writing. However, to fully harness their educational benefits, more research is needed that examines their classroom implementation, learner perception, and long-term writing development. This study builds upon and extends previous work by investigating the pedagogical integration of such tools through a mixed-methods approach in a higher education EFL setting.

3. Method

This study employed a convergent parallel mixed-methods design, combining both quantitative and qualitative approaches to gain a comprehensive understanding of the effectiveness and perception of AI-powered writing assistants in academic writing instruction for EFL learners. The integration of numerical performance data and descriptive insights enabled a multifaceted evaluation of the pedagogical intervention.

3.1 Research Context and Participants

The research was conducted at STKIP Muhammadiyah Sungai Penuh, specifically within the English Language Education Study Program. A total of 25 undergraduate students from semester 3 to 5 participated in this study. The participants were selected through purposive sampling based on the following criteria: (1) they had completed at least one academic writing course, (2) they were currently enrolled in a writing-related subject, and (3) they had access to the internet and basic knowledge of using AI-based tools. The majority of the participants were aged between 19 and 22 years, and all of them had an intermediate level of English proficiency (B1–B2 CEFR level), as verified by their most recent TOEFL or institutional English test scores. Participation in the study was voluntary, and informed consent was obtained before data collection began.

3.2 Research Instruments

To collect comprehensive data, the study employed the following instruments:

1. Academic Writing Test

   writing task (essay-based) was administered as both pretest and posttest to measure students' academic writing performance. The task required students to write a 300–350-word argumentative essay on a given topic relevant to higher education. The essays were assessed using a standardized rubric covering five criteria: content relevance, organization, grammar, vocabulary use, and academic tone. The students' pretest and posttest essays were evaluated based on the following rubric adapted from IELTS Writing Task 2. Each dimension was scored on a 20-point scale, for a total of 100 points. Table 1 presents the assessment dimensions and descriptions.

Table 1. Academic Writing Assessment Rubric

Assessment Dimension	Description	Maximum Score
Task Response	Relevance and completeness of ideas; addressing all parts of the task	20
Coherence and Cohesion	Logical organization, paragraphing, use of cohesive devices	20
Lexical Resource	Range and accuracy of vocabulary, academic expressions, word choice	20
Grammatical Range and Accuracy	Use of complex sentence structures, accuracy of grammar and punctuation	20
Academic Tone and Style	Formality, clarity, objectivity, and consistency with academic writing norms	20
Total		**100**

Source: Cambridge Assessment English (2019)

2. AI Writing Tools: Students were introduced to two AI-powered writing assistants—Grammarly and ChatGPT. Grammarly provided automated grammar, vocabulary, and clarity feedback, while ChatGPT was used for guided revision suggestions and idea expansion.
3. Interview Guide, a semi-structured interview protocol was developed to explore students' experiences and perceptions of using AI tools in their writing. Ten participants were randomly selected for the interview based on their availability and performance variability.
4. Observation Field Notes, during the writing sessions, the researcher documented classroom activities, students' interaction with the tools, and behavioral patterns related to writing habits.

3.3 Procedure

The research was carried out over four weeks, consisting of three main phases:

1. Week 1 – Pretest and Orientation: Students completed the pretest writing task under controlled conditions. Afterward, they received a one-hour workshop on how to use Grammarly Premium and ChatGPT ethically and effectively for academic purposes.
2. Week 2–3 – Treatment Sessions: During these two weeks, students completed two

academic writing tasks (different from pre/posttest topics) using the AI tools as part of their revision process. Instructional guidance was provided on how to interpret the AI-generated feedback and improve their drafts accordingly.

3. Week 4 – Posttest and Interviews: Students completed the posttest writing task. The researcher then conducted one-on-one interviews with ten selected participants. Each interview lasted approximately 15–20 minutes and was audio-recorded for transcription.

3.4 Data Analysis

Quantitative data from the pretest and posttest writing scores were analyzed using descriptive statistics (mean, standard deviation) and paired-samples t-test to identify significant differences in writing performance before and after using AI tools. Qualitative data from the interviews were transcribed verbatim and analyzed using thematic analysis (Braun & Clarke, 2006) to identify recurring patterns, sentiments, and reflections related to the AI-assisted writing experience. To ensure the validity and trustworthiness of qualitative findings, triangulation was applied through multiple sources (interviews, observations, writing samples), and member checking was conducted with several participants to confirm interpretations.

4. Result

This section presents the findings of the study, including both quantitative results from the writing performance assessment and qualitative insights from the semi-structured interviews. The results are structured based on the research questions.

4.1 Descriptive

Table 2. Descriptive Statistics of Academic Writing Scores (N = 25)

Dimension	Pretest (M ± SD)	Posttest (M ± SD)	Mean Gain
Task Response	13.6 ± 2.1	17.2 ± 1.9	+3.6
Coherence and Cohesion	12.8 ± 2.4	16.4 ± 2.0	+3.6
Lexical Resource	12.2 ± 2.0	15.8 ± 1.8	+3.6
Grammatical Range and Accuracy	11.9 ± 2.3	15.1 ± 1.9	+3.2
Academic Tone and Style	12.5 ± 1.9	16.0 ± 2.1	+3.5
Total Score	**63.0 ± 7.3**	**80.5 ± 6.9**	**+17.5**

The results indicate a notable improvement in all dimensions of academic writing. On average, students' total writing scores increased by 17.5 points after the use of AI tools. The largest gains were observed in Task Response, Coherence and Cohesion, and Lexical Resource, suggesting that AI feedback helped students structure their arguments more clearly and expand their vocabulary usage.

A thematic analysis of the semi-structured interviews with ten students yielded three dominant themes: (1) Increased Writing Confidence and Independence, (2) Enhanced Awareness of Academic Style and Structure, and (3) Ethical Concerns and the Need for Instructor Guidance. Each theme is supported by student quotations to demonstrate the depth of learner reflection and variation in experience.

1. Increased Writing Confidence and Independence

Students consistently reported that the AI tools, particularly Grammarly, increased their

confidence in self-editing and reduced anxiety about grammatical accuracy. Many described the tools as "non-judgmental writing assistants" that allowed them to revise multiple times without fear of negative feedback.

> *"When I use Grammarly, I feel more confident because it shows me what is wrong and why. I don't have to wait for the teacher to correct everything."*
>
> *Participant 4, Female, Semester 4*

Several students also stated that the tools encouraged independent revision, allowing them to complete writing tasks more efficiently and without needing constant external support.

> *"Before, I always relied on my classmates or lecturers to check my writing. Now, I try to solve the problems first using Grammarly or ChatGPT, then ask for help only if necessary."*
>
> *Participant 1, Male, Semester 5*

This pattern aligns with the self-regulated learning framework, in which learners take increasing responsibility for planning, monitoring, and evaluating their writing processes.

2. Enhanced Awareness of Academic Style and Structure

While Grammarly was praised for improving grammar and clarity, ChatGPT was recognized for its support in developing content structure and academic tone. Many students used it to explore how to rephrase ideas more formally or to see examples of well-organized paragraphs.

> *"Sometimes I don't know how to start or conclude my essay. I ask ChatGPT, and it gives me some academic ways to write it better."*
>
> *Participant 6, Female, Semester 3*
>
> *"I noticed that my vocabulary is always simple. ChatGPT shows me how to say things in a more academic way."*
>
> *Participant 8, Male, Semester 4*

This exposure to models of academic discourse enabled students to compare their own writing with more formal standards, thereby enhancing their awareness of genre conventions and stylistic appropriateness.

3. Ethical Concerns and the Need for Instructor Guidance

Despite the positive responses, some students expressed **ethical reservations** regarding the overuse or misuse of AI-generated suggestions. They questioned the boundary between using AI as a learning tool versus depending on it too much.

> *"I think ChatGPT is helpful, but sometimes I wonder if I am learning or just copying what it says, and I want to use the tools properly, but I don't know the limit. Should we use it for generating content or only for checking?"*
>
> *Participant 10, Female, Semester 5*

Others highlighted the need for teachers to guide them on when and how to use AI tools responsibly within academic integrity standards.These reflections suggest that while students appreciate the utility of AI writing assistants, they also recognize the importance of critical engagement and ethical boundaries in academic contexts.

The interview data reveal that AI-powered writing tools positively impact students'

confidence, autonomy, and stylistic awareness, yet simultaneously raise questions about their ethical use and pedagogical boundaries. These findings emphasize the importance of explicit instruction and reflective training when integrating AI into language learning environments.

4.2 Paired Sample T-test

To examine whether the integration of AI-powered writing assistants significantly improved students' academic writing performance, a paired samples t-test was conducted to compare the mean scores of the pretest and posttest across five assessment dimensions.

Table 3. Paired Samples t-Test

Dimension	M (Pre)	M (Post)	Mean Difference	t	df	p-value	Effect Size (d)
Task Response	13.6	17.2	3.6	7.21	24	< .001	1.44
Coherence and Cohesion	12.8	16.4	3.6	6.85	24	< .001	1.37
Lexical Resource	12.2	15.8	3.6	6.49	24	< .001	1.30
Grammatical Range and Accuracy	11.9	15.1	3.2	5.88	24	< .001	1.18
Academic Tone and Style	12.5	16.0	3.5	6.74	24	< .001	1.35
Total Score	**63.0**	**80.5**	**17.5**	**8.76**	**24**	**< .001**	**1.75**

The results of the paired-samples t-test, as presented in Table 3, demonstrate a statistically significant improvement in all five dimensions of academic writing following the integration of AI-powered writing assistants. The mean total writing score increased from 63.0 to 80.5, with a mean difference of 17.5 points, which is both statistically and pedagogically substantial (t 24) = 8.76, p < .001). Each individual component—Task Response, Coherence and Cohesion, Lexical Resource, Grammatical Range and Accuracy, and Academic Tone and Style—showed significant gains with p-values less than .001, indicating that the observed differences are not due to chance.

Furthermore, the effect sizes (Cohen's d) for all dimensions ranged from 1.18 to 1.75, suggesting large practical effects across the board (Cohen, 1988). Among the dimensions, the greatest improvements were observed in Task Response (d = 1.44) and Coherence and Cohesion (d = 1.37), indicating that the use of AI tools effectively enhanced students' ability to develop relevant content and structure their essays more logically. The dimension with the lowest, yet still strong, effect was Grammatical Range and Accuracy (d = 1.18), implying that while AI tools significantly aided grammar correction, gains in this area may also depend on learners' underlying language proficiency and revision habits.

These findings suggest that the use of AI-powered tools such as Grammarly and ChatGPT provides not only surface-level corrections but also promotes higher-order improvements in academic writing, such as argument development, lexical variety, and formal academic tone. The statistically significant increases across all measured components confirm that AI-assisted writing environments can substantially support EFL learners' academic writing development, particularly when used in pedagogically structured settings. This empirical evidence aligns with previous research (e.g., Zou et al.,

2022; Bai & Wang, 2023), reinforcing the pedagogical potential of AI integration in higher education language instruction.

5. Discussion

The findings of this study demonstrate that the integration of AI-powered writing assistants, specifically Grammarly Premium and ChatGPT, contributed significantly to improving EFL students' academic writing performance. The quantitative results showed a statistically significant increase in students' total writing scores, with an average gain of 17.5 points from the pretest to the posttest. This increase was confirmed by a paired-samples t-test ($t(24) = 8.76$, $p < .001$) and a large effect size (Cohen's d = 1.75), indicating a strong pedagogical impact. Among the five writing dimensions assessed, the most substantial improvements were found in task response and coherence, suggesting that the AI tools effectively supported both idea development and structural control.

These results align with sociocognitive theories of learning, particularly Vygotsky's concept of the Zone of Proximal Development, where learners progress through scaffolded assistance from more knowledgeable others—or, in this case, intelligent systems. Grammarly provided accurate, real-time feedback that improved grammatical range and accuracy, while ChatGPT offered examples of coherent paragraph construction and formal tone, guiding learners toward more academic expression. This is in line with findings from Zou et al. (2022), who emphasized that AI tools are capable of supporting both surface-level corrections and higher-order discourse features. Bai and Wang (2023) similarly found that extended use of Grammarly improved syntactic complexity and lexical variety in EFL student writing.

More than mechanical correction, the AI tools appeared to foster deeper engagement with the writing process itself. Learners became more aware of their writing challenges and more proactive in revising content, structure, and language use. This corresponds with the concept of feedback loops described by Ranalli et al. (2021), in which learners internalize and apply automated feedback for continuous improvement. The current study revealed that students used ChatGPT not only to rephrase sentences but also to restructure arguments and clarify positions—suggesting a shift from simple editing to active composition support. This process supports Hyland's (2016) model of writing as recursive and cognitively complex, where tools can act as scaffolding in planning, drafting, revising, and reflecting.

The interviews further revealed that the AI tools positively influenced students' confidence and autonomy. Many participants described Grammarly and ChatGPT as non-threatening assistants that allowed them to take control of their revisions without relying solely on teachers or peers. These outcomes support the development of self-regulated learning, as conceptualized by Zimmerman (2000), where students engage in metacognitive planning and monitoring of their work. This affective shift is consistent with Li et al. (2020), who observed increased learner self-efficacy when using automated feedback tools.

However, the study also uncovered emerging ethical concerns. Some students expressed uncertainty about the boundaries between using AI tools for learning and becoming overly dependent on them. There were questions about authorship, originality, and whether constant reliance on AI suggestions might reduce critical thinking and personal voice in writing. These concerns are echoed in recent scholarship by Godwin-Jones (2022) and Yoon and Jo (2023), who warned of the "black-box" nature of AI and its potential to obscure learner agency. The ethical ambiguity in tool use highlights the urgent need for

explicit instruction on digital literacy and responsible AI integration.

From a pedagogical perspective, these findings imply that the role of instructors must evolve. Teachers are no longer the sole providers of feedback but must instead act as facilitators who guide students in interpreting and evaluating AI-generated suggestions. This echoes the TPACK framework developed by Mishra and Koehler (2006), which stresses that effective technology integration requires not only technical knowledge but also pedagogical skill and content expertise. Students must be taught not only how to use AI tools but how to learn with them—how to discern useful feedback from inappropriate suggestions, how to maintain their own academic voice, and how to avoid unethical practices such as over-editing or idea substitution.

These findings carry several implications for EFL curriculum design. Writing courses should formally include AI tool literacy as a skill set, teaching learners not just functionality but also critical engagement and reflective usage. Embedding AI tools into the stages of process writing—brainstorming with ChatGPT, editing with Grammarly, and revising based on AI feedback—may encourage deeper cognitive processing and ownership of learning. Instructors may also implement reflective tasks to help students evaluate the AI tools' suggestions and articulate how those changes influence their writing. Cho (2022) and Cotos et al. (2017) have similarly emphasized the importance of scaffolding students' engagement with technology, not just its adoption.

While the outcomes of this study are encouraging, several limitations must be acknowledged. The sample size was relatively small and limited to a single institution, which may affect generalizability. Additionally, the duration of the intervention was short, and long-term impacts of AI use on writing development were not assessed. Future research could explore the sustained effects of AI writing tools over an academic semester, involve larger and more diverse samples, and include teacher perspectives on implementation challenges. Research might also compare outcomes across genres of writing or examine differences based on proficiency levels to better understand who benefits most from these tools.

In conclusion, the integration of AI writing assistants into EFL instruction demonstrates strong potential to enhance writing performance, foster learner independence, and increase engagement with academic discourse. However, their use must be carefully mediated through explicit pedagogy, ethical guidelines, and critical reflection. When supported effectively, AI tools can become powerful allies in developing not only the mechanics but also the mindset of academic writing.

6. Conclusions

Based on the findings and discussion can conclude that: First, the integration of AI-powered writing assistants significantly enhances EFL students' academic writing performance, as demonstrated by substantial improvements in task response, coherence, and grammatical accuracy. Second, students perceive these tools as supportive and non-threatening aids that foster greater confidence, independence, and awareness of academic writing conventions. Third, the pedagogical implications highlight the need for guided and ethical integration of AI tools, where instructors play a crucial role in facilitating critical engagement, reflective practice, and responsible use in the EFL writing classroom.

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