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ENHANCING OR INHIBITING? THE DUAL ROLE OF AL TOOLS IN EFL WRITING PRACTICES

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ABSTRACT

This study investigates the dual role of Artificial Intelligence (AI) tools in supporting English as a Foreign Language (EFL) writing. Tools like Grammarly and ChatGPT are found to enhance students' technical writing accuracy such as grammar, vocabulary, and sentence structure by offering instant feedback. However, concerns persist regarding their limited contribution to the development of higher-order writing skills. Conducted with 100 Indonesian tertiary-level EFL students, this mixed-methods research used surveys and interviews to evaluate the impact of AI tools on writing performance. Quantitative results showed a moderate positive correlation (Spearman's $\rho = 0.450$, $p = 0.001$) between frequent AI use and improvements in surface-level writing. However, participants scored low on creativity and originality ($M = 2.37$), implying that AI-assisted writing tends to be rigid and lacks personal voice. Qualitative data also highlighted that AI-generated feedback lacks the depth and contextual sensitivity of human instruction. The study concludes that while AI tools are useful for supporting basic writing accuracy, they should not replace teacher feedback. Instead, a blended approach combining AI tools with human guidance is recommended to foster critical thinking, creativity, and rhetorical skills, ensuring more comprehensive EFL writing development.

Keywords: *AI tools, EFL writing, Grammarly, ChatGPT, writing instruction, learner autonomy*

1. INTRODUCTION

Writing in English, particularly for learners whose first language is not English, presents a multifaceted challenge. English as a Foreign Language (EFL) learners often grapple with mastering vocabulary, grammar, and syntax, while simultaneously striving to organize ideas coherently and maintain logical flow in their writing. The complexity of writing in a second language is compounded by cultural differences in rhetorical structures and academic conventions. As noted by Allen and McNamara (2017) and Fitrawati et al. (2023), EFL learners must navigate not only linguistic hurdles but also the expectations of academic discourse communities, which may differ significantly from those in their native languages.

Moreover, the cognitive demands of writing in a second language can lead to increased cognitive load, affecting learners' ability to express complex ideas effectively. Wale and Bogale (2021) and Flower and

Vol 8, No 2 (2025): ESTEEM

Hayes (2019) highlight that limited linguistic resources often result in difficulties conveying nuanced arguments, leading to oversimplified or fragmented texts. Consequently, EFL learners require substantial support to develop their writing proficiency, encompassing both linguistic accuracy and rhetorical competence (Yavari & Shafiee, 2019; Mohammadzadeh et al., 2020; Baleghizadeh & Maryam, 2019).

These challenges are further exacerbated by pedagogical limitations. Feedback, a core component of writing development, is often insufficient due to high student-teacher ratios, lack of time, and limited teacher training in writing instruction. Lopez (2021) noted that providing high-quality feedback on a single student paper may take 20–30 minutes, which is unsustainable in classrooms with 40 or more students. In many Indonesian public universities, a lecturer typically handles between 100 to 150 students per semester (BPS, 2023). As a result, feedback is frequently delayed, overly general, or focused only on surface-level issues such as grammar and spelling, neglecting content and argument structure. Additionally, EFL learners may find it challenging to develop and organize their ideas effectively, leading to issues with content development and logical flow. Chen and Cui (2022) emphasize that these challenges are exacerbated by limited exposure to English in daily life, restricting opportunities for practice and reinforcement.

Furthermore, EFL learners may lack familiarity with the conventions of academic writing in English, such as the use of thesis statements, topic sentences, and cohesive devices. This unfamiliarity can result in texts that do not meet the expectations of academic discourse communities. Wale and Bogale (2021) and Al Awlaqi and Ghozali (2023) note that EFL learners often struggle with adopting appropriate academic tone and style, which are essential for effective communication in academic settings. Feedback plays a pivotal role in the development of writing skills among EFL learners. It serves as a mechanism for learners to identify their strengths and weaknesses, facilitating targeted improvements in their writing. Feedback can be categorized into local-level feedback, which addresses issues such as grammar, vocabulary, and punctuation, and global-level feedback, which focuses on aspects like argumentation, coherence, and content organization (Crosthwaite et al., 2022; Fahmi & Rachmijati, 2021; Malini et al., 2022).

Teacher-generated feedback has traditionally been regarded as the most effective form of feedback, offering detailed, context-sensitive insights that support learners' development (Bitchener & Storch, 2016). Teachers can provide personalized feedback that considers the individual needs and proficiency levels of learners, addressing both surface-level errors and higher-order concerns. However, the provision of comprehensive feedback is time-consuming and may not be feasible in contexts with large class sizes or limited instructional time. The advent of Artificial Intelligence (AI) tools has revolutionized various aspects of education, including language learning and writing instruction. AI-based tools, particularly those powered by large language models (LLMs) such as ChatGPT, Bing AI, and Gemini, have shown promise in providing scalable and efficient writing feedback to EFL learners (Kasneci et al., 2023; Li et al., 2023; Rahayu et al., 2024; Ida Royani & Sihombing, 2024). These tools are capable of offering instant feedback on a wide range of writing errors, including grammar, punctuation, and spelling, which can be highly beneficial in improving writing accuracy and fluency.

By automating the feedback process, AI tools alleviate the burden on teachers, enabling them to focus on higher-order writing skills, such as idea development, organization, and logical coherence (Link et al., 2022). Moreover, AI tools can provide

Vol 8, No 2 (2025): ESTEEM

learners with immediate feedback, allowing for timely revisions and iterative improvement. This immediacy can enhance learner engagement and motivation, as students can see the impact of their revisions in real-time.

Despite their potential advantages, AI tools also present challenges and limitations in the context of EFL writing. One key issue is that AI-generated feedback often lacks the depth and contextual understanding required to address the more complex, global aspects of writing (Lin & Crosthwaite, 2024; Paludo & Montresor, 2024). While AI can provide immediate corrections for surface-level issues, it may not be able to offer nuanced suggestions for improving the overall structure, argumentation, and clarity of the writing.

Moreover, AI tools may struggle to provide personalized feedback tailored to the individual needs of each student, leading to the possibility of formulaic or repetitive suggestions (Teng, 2024; Madhavi et al., 2023). This lack of personalization can result in feedback that is less effective in addressing the specific challenges faced by individual learners. Additionally, overreliance on AI-generated corrections may lead students to engage less critically with their writing, potentially hindering the development of self-monitoring and self-correction skills (Ghafouri et al., 2024; El Maamri, 2025). Educators have also expressed concerns that the widespread use of AI tools may lead to the dehumanization of the feedback process, as students may miss out on the personalized insights and support that come from teacher-generated feedback (Zhang, 2020; Xu, 2024). The impersonal nature of AI feedback may affect the student-teacher relationship and reduce opportunities for meaningful interactions that support learning.

While existing research has explored the use of AI tools in writing instruction, there is still a lack of understanding about how these tools can be most effectively integrated into EFL writing pedagogy. Specifically, research on how the sequencing of AI and teacher feedback affects students' revision processes remains scarce (Lin & Crosthwaite, 2024; Teng, 2024). Understanding the optimal integration of AI-generated and teacher-generated feedback is crucial for maximizing the benefits of both approaches.

A preliminary study by Tran (2025) investigated the impact of two forms of feedback teacher-generated feedback and AI-generated feedback as well as the order in which the two types of feedback were provided, on EFL students' writing revision practices. The study found that the integration of teacher- and AI-generated feedback yielded the highest revision frequencies, demonstrating complementary strengths. AI-generated feedback addressed surface-level issues, while teacher-generated feedback focused on higher-order concerns. Although no statistically significant differences were found between the two orders of feedback, the sequence of AI-generated feedback followed by teacher-generated feedback resulted in a slightly greater quantity of revisions made by students. These findings highlight the potential of combining AI- and teacher-generated feedback to enhance writing revisions and provide pedagogical insights for integrating AI tools into academic writing courses. However, further research is needed to explore the most effective ways to integrate these feedback forms and to understand how different sequences of feedback impact student learning outcomes.

Given the considerations outlined above, the purpose of this study is to examine the dual role of AI tools in EFL writing practices by investigating both their enhancing and inhibiting effects on students' writing development. Specifically, this study aims to explore how AI-generated feedback impacts students' writing processes and whether it fosters or hinders students' ability to engage with and revise their writing. Furthermore, the study will explore the

Vol 8, No 2 (2025): ESTEEM

interaction between AI-generated and teacher-generated feedback, analyzing how the combination of these two forms of feedback affects students' writing refinement. The study will address the following research questions is 1) How does AI-generated feedback impact the revision processes of EFL learners? 2) How does the sequencing of AI and teacher-generated feedback affect writing refinement in EFL contexts?

By addressing these questions, the study seeks to provide insights into how AI tools can be integrated into EFL writing instruction to support learners' development. Additionally, the findings may inform the design of AI tools to better meet the needs of EFL learners, ensuring that AI feedback complements teacher-generated feedback in a way that enhances overall writing proficiency.

2. LITERATURE REVIEW

Writing Challenges for EFL Students

Academic writing is an essential component of tertiary-level education, especially in non-native English-speaking countries, where students must demonstrate proficiency in writing for academic success. For EFL students, however, writing presents numerous challenges, ranging from grammar and vocabulary limitations to difficulties in organizing thoughts and maintaining coherence in their writing (Chen & Cui, 2022; Wale & Bogale, 2021). These challenges are further compounded by time constraints in language instruction, with limited hours allocated to developing writing skills (Hasan et al., 2018). According to Patwary et al. (2023), tertiary-level students in Bangladesh, for example, struggle with mastering essential writing skills, for instance vocabulary organization, grammar correction, and coherence, due to insufficient instructional time. Consequently, students may expand weak writing abilities, impacting their academic performance (Hasan et al., 2020). Given these challenges, treating the writing difficulties faced by students is fundamental to enhancing their academic success.

AI's Contribution to Writing Development

AI tools have increasingly been seen as valuable resources for treating the writing challenges faced by EFL learners. Studies have shown that AI-based writing assistants, for instance Grammarly, play a fundamental role in improving writing skills by providing immediate, automated feedback on grammar, spelling, punctuation, and syntax (Shahriar & Laboni, 2023). For instance, Shahriar and Laboni (2023) found that AI tools help tertiary-level students by correcting grammatical structures and spelling errors, significantly enhancing their writing accuracy. Similarly, Barrot (2023) highlighted the role of ChatGPT in developing writing skills by offering interactive experiences that engage learners in language input and output, fostering both writing fluency and creativity. These AI tools are seen as catalysts in increasing students' confidence and motivation to write more complex sentences and engage more deeply with the writing process.

AI tools also help students overcome writer's block and embolden them to experiment with new vocabulary and writing styles (Alharbi, 2023). In this regard, AI tools facilitate students' engagement in writing by providing real-time suggestions, thereby improving their writing performance and boosting their self-efficacy in the process. Nazari et al. (2021) further support this notion, demonstrating that AI-powered tools significantly refine students' engagement, self-efficacy, and writing proficiency. Their study found that students who used AI tools for writing showed higher levels of cognitive, behavioral, and emotional engagement compared to those who did not use AI, with a notable refinement in their overall writing performance.

Vol 8, No 2 (2025): ESTEEM

Perceptions of AI Tools Among EFL Learners

The acceptance and utility of AI tools in writing development are influenced by students' perceptions and experiences with these tools. Lee et al. (2024) and Amin (2023) conducted a study to explore tertiary-level students' perceptions of AI tools, revealing that students generally view AI tools positively, recognizing their potential to enhance comprehension, productivity, and creativity in academic writing. However, the study also highlighted the need for improving AI literacy among both students and educators to ensure the effective use of these tools in learning environments. Similarly, Roe et al. (2023) and Wei (2023) emphasized the significance of comprehending the pedagogical uses of AI tools in language learning. Their study found that AI tools, for instance machine translators and automated writing evaluation systems, are useful in helping students produce writing that aligns with academic standards. However, the rapid advancement of AI technology raises concerns about academic integrity, as some educators worry about the authenticity of student work generated with the assistance of AI tools.

Challenges and Limitations of AI Tools

While AI tools offer significant benefits in terms of enhancing writing skills, they are not without limitations. Alharbi (2023) conducted a systematic review of AI applications in educational settings and found that AI tools, while effective in correcting surface-level errors, often fail to provide comprehensive feedback on higher-order writing concerns, for instance content organization and argument development. This limitation suggests that while AI tools are valuable for improving grammar and syntax, they cannot displace the nuanced and context-specific feedback provided by human teachers. Furthermore, AI tools may sometimes hinder students' creativity and critical thinking. Some learners report that their writing becomes more formulaic due to over-reliance on AI suggestions, limiting their ability to expand a unique writing style (Teng, 2024). This over-reliance on AI for error correction also reduces students' engagement with manual revision processes, which are fundamental for developing independent writing skills (Teng, 2024; Guo & Wang, 2024).

The Integration of AI Tools with Teacher Feedback

A growing body of research suggests that AI tools should be used in conjunction with traditional teacher feedback to maximize their benefits in language learning. Studies have shown that AI-generated feedback can address local-level issues for instance grammar and punctuation, while teacher-generated feedback can focus on global aspects for instance content, structure, and coherence (Crosthwaite et al., 2022; Lin & Crosthwaite, 2024). For example, Dai et al. (2023) explored the effectiveness of combining AI feedback with teacher input, concluding that this hybrid approach results in more comprehensive revisions and better writing outcomes. This integration of AI and teacher feedback ensures that students receive both immediate corrections and deeper, more personalized guidance on their writing. In summary, AI tools offer promising benefits for enhancing EFL writing skills, peculiarly by treating surface-level issues and supporting students' writing processes. However, they also present challenges, peculiarly in promoting critical thinking and fostering creativity. Therefore, a balanced approach that integrates AI feedback with teacher-generated feedback can help maximize the benefits of AI tools while mitigating their limitations. The findings from this literature underscore the potential of AI tools in supporting EFL writing development, but also highlight the need for further research into the ethical

Vol 8, No 2 (2025): ESTEEM

implications and pedagogical integration of these technologies.

3. METHODS

Research Design

This study aims to investigate the dual role of AI tools in EFL writing practices, focusing on how these tools enhance or inhibit the writing development of learners. A mixed-methods approach was employed, combining both quantitative and qualitative data collection techniques to provide a comprehensive comprehending of the impact of AI tools on EFL writing.

Population and Scope

The target population for this research consists of EFL learners who are using AI tools (for instance Grammarly, ChatGPT, and others) to enhance their English writing skills. The study specifically focuses on tertiary-level students from various universities in Indonesia who have experience in utilizing AI-based writing assistants. This scope was chosen to explore the broader implications of AI tool use within an academic context, peculiarly among learners at the tertiary level. The research will involve both private and public universities across Indonesia to reflect diverse student experiences with AI tools in writing.

Sampling Technique and Sample Size

For the quantitative data collection, a simple random sampling technique was used to ensure that every member of the population had an equal chance of being selected. This method helps in obtaining an unbiased sample, which is fundamental for the reliability of the data. A total of 100 respondents participated in the online survey. For the qualitative data collection, a purposive sampling technique was employed. This method was used to select a specific group of participants who could provide rich, in-depth insights into their experiences with AI tools in writing. The interviews were designed to explore individual experiences, challenges, and benefits related to the use of AI in writing. Following Krejcie and Morgan's (1970) guidelines, the sample size for the survey was determined to be appropriate for a population of this scale.

Validity and Reliability

The questionnaire and interview tools were carefully designed to align with the research goals, using clear language to ensure meaningful responses. A pilot test with 20 different participants confirmed the instrument's construct validity through significant Pearson correlations ($r = 0.455–0.950$), showing strong alignment between items and the overall scale. Reliability testing using Cronbach's alpha yielded a moderate score of 0.621, indicating acceptable internal consistency, though some items may need refinement. Overall, the instruments were found to be valid and reasonably reliable for collecting data on EFL learners' perceptions of AI tool use.

To interpret the responses, the following grading scale was applied based on the Range Equation:

- 1.00–1.75 = Very Low Degree
- 1.76–2.50 = Low Degree
- 2.51–3.25 = Medium Degree
- 3.26–4.00 = High Degree

Data Collection and Analysis

The study adopted a mixed-methods approach to examine the link between AI tool use and EFL learners' writing proficiency. Descriptive statistics (mean, mode, and standard deviation) were first used to summarize survey data and capture general trends in learners' perceptions of AI tools. To explore the association between AI usage frequency and writing performance, Spearman's rank-order correlation was applied, revealing a moderate positive

Vol 8, No 2 (2025): ESTEEM

correlation (ρ = 0.450, p = 0.001), suggesting that frequent AI use relates to improved surface-level writing accuracy. Lastly, thematic analysis of open-ended responses provided deeper insight into learners' experiences, highlighting both the benefits (e.g., efficiency) and concerns (e.g., lack of contextual understanding). This combined approach ensured a comprehensive analysis of AI's technical and cognitive impact on EFL writing.

Data Analysis

Demographic Data of Participants (n = 100)

Demographic Variable	Category	Percentage (%)
Age	15-20	25.0%
	21-25	35.0%
	26-30	20.0%
	31-35	12.0%
	36-40	8.0%
Gender	Female	60.0%
	Male	38.0%
	Prefer not to say	2.0%
Educational Level	High School (SMA/SMK)	20.0%
	Diploma	15.0%
	Bachelor (S1)	55.0%
	Postgraduate (S2/S3)	10.0%
English Proficiency	Beginner (Pemula)	28.0%
	Intermediate (Menengah)	42.0%
	Advanced (Lanjutan)	20.0%
	Proficient (Mahir)	10.0%
Frequency of AI Tool Usage	Daily	22.0%
	Several times/week	30.0%
	Several times/month	14.0%
	Only as needed	20.0%
	Rarely	12.0%

4. RESULTS AND DISCUSSION

Table 1: Spearman Correlation and Normality Test Results

Test	Variable 1	Variable 2	Correlation Coefficient (r)	Significance (p-value)
Normality Test	Use of AI Tools	-	-	< 0.001
	English Writing Ability	-	-	0.002
Spearman Correlation Test	Use of AI Tools	English Writing Ability	0.450	0.001

questions	mode	mean	std dev	description
I regularly use AI tools (e.g.. Grammarly. ChatGPT) to refine my English writing.	3	3,31	0,611474	Medium
AI tools help me write faster and more efficiently.	4	3,47	0,573672	High
I rely on AI tools for grammar and spelling correction.	4	3,43	0,636475	High
I primarily use AI tools to enhance my vocabulary (e.g.. synonyms. word suggestions).	3	3,45	0,53619	High
AI tools help boost my confidence in writing.	4	3,45	0,6538	High

Vol 8, No 2 (2025): ESTEEM

			35	
I feel comfortable using AI tools to support my writing practice.	4	3,48	0,574108	High
I often use AI tools to check the clarity and coherence of my writing.	3	3,4	0,632456	Medium
AI tools refine the overall quality of my writing.	4	3,49	0,574369	High
I feel that using AI tools has refined my grammar and syntax.	3	3,34	0,635925	Medium
AI tools provide valuable feedback that helps me comprehend my mistakes better.	3	3,37	0,642729	Medium
AI tools help me explore a broader vocabulary than I usually use.	4	3,48	0,574108	High
AI tools sometimes limit my creativity in writing.	2	2,53	1	Low
I feel that my writing style has become more formulaic due to the use of AI tools.	3	2,91	0,939095	Medium
I feel that using AI tools makes me less engaged in manually revising my writing.	2	2,43	1	Low
I sometimes feel that my writing is less original because of AI tool suggestions.	2	2,37	1	Low
I tend to rely too much on AI tools for error correction.	2	2,47	1	Low
I find myself using AI tools even when I already know the answer to a writing problem.	3	2,73	0,968039	Medium
I sometimes feel that AI tools make me less confident in my own writing skills.	2	2,35	1	Low
Without AI tools. I would struggle more to complete writing tasks.	3	2,58	1	Medium
I believe that using AI tools refines my writing. but I still prefer to make the final decisions about content and writing style.	4	3,41	0,649538	High
AI tools help me meet deadlines and manage writing tasks more effectively.	4	3,44	0,652993	High
I feel more confident submitting my writing after using AI tools for feedback.	3	3,35	0,653835	High
AI tools motivate me to write more regularly.	4	3,42	0,680882	High
I think AI tools embolden me to experiment with new writing techniques.	4	3,41	0,664756	High
Using AI tools can make me lazy in improving my own writing skills.	2	2,31	1	Low
I feel that AI tools sometimes hinder my ability to think critically about my writing.	2	2,27	0,998549	Low
I believe AI tools should be used as a complement. not a displacement. for learning to write.	3	3,42	0,650846	Low

Based on the data in Table 1, the results indicate that both the "Use of AI Tools" and "English Writing Ability" variables exhibit significant deviations from normality, as shown by the p-values of < 0.001 and 0.002, respectively. This suggests that both variables are not normally distributed. The Spearman correlation coefficient between these two variables is 0.450, with a p-value of 0.001, indicating a moderate positive correlation. This means that increased use of AI tools is associated with refinements in students' English writing abilities, peculiarly in surface-level aspects for instance grammar and spelling. However, the results also suggest that while AI tools are effective for treating these issues, their impact on higher-order writing skills, for instance content development and logical coherence, may be limited.

Vol 8, No 2 (2025): ESTEEM

Discussion

The demographic composition of the study participants (n = 100) offers crucial context in understanding the broader implications of AI tools in EFL writing development. The majority of the respondents (35.0%) fall within the 21–25 age range, which corresponds with the standard demographic of tertiary-level students. This alignment affirms the relevance of the data to the core population under investigation university-level English language learners. A significant female majority (60.0%) also reflects broader global and regional trends in language learning, where female students are often more actively engaged in language-related academic pursuits.

Educational background also plays an important role in shaping how learners interact with writing technologies. The fact that 55.0% of the respondents hold a Bachelor's degree suggests that these participants are already embedded in academic environments with frequent demands for English writing output. This academic exposure creates a compelling need for tools that can streamline and enhance their writing processes, which in turn may explain the relatively high adoption rate of AI tools reported in this study. Additionally, the remaining respondents those from high school (20.0%) and diploma-level education (15.0%) suggest that even learners with less advanced academic backgrounds are turning to AI technologies, possibly due to their perceived accessibility and ease of use.

When examining English proficiency levels, it is notable that the largest group (42.0%) identified as intermediate users, followed by beginners (28.0%), advanced learners (20.0%), and a small proportion of proficient users (10.0%). This spread is critical, as it demonstrates that AI tools are particularly appealing and perhaps more impactful for learners who are still developing foundational writing skills. These learners are more likely to benefit from AI features that address surface-level issues such as grammar and vocabulary areas where intermediate and beginner EFL writers commonly struggle (Chen & Cui, 2022; Wale & Bogale, 2021).

This observation aligns with the findings from Cognitive Load Theory (Sweller, 1988), which posits that learners with limited cognitive capacity in a second language benefit from offloading surface-level cognitive tasks, such as syntax correction and spelling, to external tools. The automation of these repetitive and technical elements allows learners to focus their mental energy on planning and organizing their ideas a point echoed by Hartshorn et al. (2010), who found that reduced cognitive load contributes to improved writing fluency.

The frequency of AI tool usage also reinforces the centrality of these tools in contemporary academic writing practices. With 30.0% of participants using AI tools several times per week and 22.0% using them daily, it is evident that these tools have become embedded into students' writing routines. These figures are congruent with findings by Koltovskaia (2023), who observed that frequent use of Grammarly among university students correlates with increased confidence and perceived writing competence. The high usage rate also reflects the perception of AI tools as accessible, user-friendly, and capable of providing instant feedback, which is particularly valuable in environments with limited teacher support or delayed grading cycles (Han, 2021).

Statistical findings from the Spearman correlation test further support the positive impact of AI tools on English writing development. The significant correlation coefficient ($\rho = 0.450$, $p = 0.001$) points to a moderate positive relationship between the frequency of AI tool usage and the perceived improvement in writing proficiency. This result reinforces prior literature that highlights the efficacy of AI tools in refining grammar and enhancing vocabulary usage

Vol 8, No 2 (2025): ESTEEM

(Shahriar & Laboni, 2023; Barrot, 2023). Specifically, the survey item "AI tools refine the overall quality of my writing" received a high mean score (3.49), which confirms that learners themselves perceive measurable improvements in their output quality.

Interestingly, while the correlation is positive, its moderate strength suggests that the impact of AI tools is somewhat bounded. That is, although AI tools help address surface-level concerns, they fall short in fostering deeper cognitive skills such as original argument construction, critical thinking, and rhetorical sophistication. This limitation is well-documented in the literature. For example, Lin and Crosthwaite (2024) argue that while AI tools such as ChatGPT are excellent at generating grammatically accurate sentences, they are less capable of offering context-sensitive feedback that nurtures higher-order thinking. Similarly, in this study, items related to creativity and originality yielded notably lower scores. Statements such as "I feel that my writing is less original because of AI tool suggestions" (M = 2.37) and "AI tools make me less engaged in manually revising my writing" (M = 2.43) illustrate the perception that AI tools can inadvertently stifle self-expression.

From a theoretical perspective, these findings validate core assumptions of the Feedback Intervention Theory (Kluger & DeNisi, 1996), which emphasizes that the effectiveness of feedback is influenced by its relevance, clarity, and learners' ability to interpret and apply it. While AI feedback often offers clarity and immediacy, it lacks personalization and contextual nuance, making it less effective in promoting deeper revisions. This supports the claim that while AI tools offer functional support for lower-order concerns, they fall short in offering global-level feedback that supports critical engagement with text structure and argument logic (Teng, 2024).

The Sociocultural Theory (Vygotsky, 1978) further helps explain the perceived shortcomings of AI tools in replicating the scaffolding provided by human instructors. Although AI tools can simulate peer-level interaction, they do not possess the pedagogical adaptability or empathy required to tailor instruction to an individual's learning zone. Survey results confirm this interpretation. For instance, the statement "AI tools limit my creativity in writing" received a low mean score of 2.53, indicating student awareness that AI-generated suggestions may lead to more standardized, less innovative outputs. Such findings echo those of Ghafouri et al. (2024), who documented concerns that excessive reliance on AI feedback may hinder the development of students' independent revision skills.

Additionally, the responses to the item "I tend to rely too much on AI tools for error correction" (M = 2.47) indicate a degree of self-awareness among learners regarding their potential over-dependence. This observation reflects a broader pedagogical concern namely, that AI tools may cultivate habits of passivity in writing, whereby students begin to expect solutions rather than engage in problem-solving. This issue is well-articulated within Metacognitive Theory, which underscores the importance of learners' ability to self-monitor and evaluate their own writing processes (Guo & Wang, 2024). AI tools, by automating part of the revision cycle, risk displacing the learner's internal dialogue, thus diminishing opportunities for metacognitive growth.

Nevertheless, a promising outcome of this study is that learners do not appear to view AI tools as replacements for teacher feedback. The item "I believe AI tools should be used as a complement, not a displacement, for learning to write" received a high mean score of 3.42, reinforcing the notion that learners value human input in the writing process. This finding is encouraging and aligns with the Constructivist Learning Theory (Piaget, 1973), which holds that learners build knowledge actively and socially. The ideal model, therefore, is one in

Vol 8, No 2 (2025): ESTEEM

which AI tools are integrated into a human-mediated learning environment a stance advocated by numerous scholars (Crosthwaite et al., 2022; Dai et al., 2023).

In conclusion, this interpretation of both quantitative and qualitative findings reveals several key insights:

1. AI tools are highly effective for addressing mechanical aspects of writing such as grammar, punctuation, and vocabulary. This is supported by high mean scores across items related to efficiency, confidence, and accuracy.
2. AI tools have a limited role in enhancing higher-order writing skills. The low scores in creativity and originality indicate a gap in AI's ability to nurture rhetorical or critical engagement.
3. Learners show awareness of the benefits and limitations of AI tools. They recognize the importance of using these tools in moderation and alongside traditional pedagogical feedback.
4. There is a strong preference for hybrid learning models that combine the speed and scalability of AI with the depth and insight of teacher feedback.

These findings not only echo the results of studies such as those by Kasneci et al. (2023) and Barrot (2023), but also extend their implications by quantifying learner perceptions within the Indonesian tertiary EFL context. Importantly, this study contributes to the field by proposing a balanced instructional paradigm one that neither over-relies on AI nor dismisses its practical utility. In practical terms, this means that English language educators should consider adopting blended feedback approaches in their classrooms. For example, teachers might use AI tools to streamline the proofreading process, allowing class time to focus on peer-review workshops or rhetorical analysis activities. This approach would maximize instructional time while still ensuring that students benefit from immediate, low-level corrections.

The findings also raise important considerations for developers of AI educational technologies. There is a clear need to enhance the capabilities of these tools in providing context-aware feedback. Developers might consider integrating AI tools with teacher dashboards or peer-feedback modules to create more holistic systems of support. Moreover, improving the personalization features of AI tools such as allowing users to specify writing goals or stylistic preferences could help mitigate concerns about formulaic writing.

5. CONCLUSION

This study explores the dual role of AI tools in EFL writing instruction, revealing that while platforms like Grammarly and ChatGPT enhance technical aspects—such as grammar and vocabulary—they offer limited support for higher-order skills like critical thinking and originality. A moderate correlation ($\rho = 0.450$) was found between AI use and improved surface-level writing, but students expressed concerns about formulaic output and reduced creativity. These findings emphasize that AI lacks the contextual and pedagogical depth of human feedback.

Educationally, the study advocates for a balanced approach, integrating AI tools for early drafting and technical revision, while relying on teacher or peer input for deeper content development. Teachers should guide students in critically evaluating AI feedback and design tasks that foster argumentation and analysis.

Limitations include a focus on Indonesian students and reliance on self-reported data. Future research should explore long-term AI use effects, compare feedback sequences (AI vs. teacher-first), and assess specific AI features' influence on various writing genres. Investigating teacher perspectives and AI literacy could also

Vol 8, No 2 (2025): ESTEEM

inform more effective classroom integration strategies.

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