



EFL Students' Attitudes toward the Use of Meta AI on WhatsApp in Writing at Vocational High School

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Abstract This study explores EFL students' attitudes toward the use of Meta AI on WhatsApp in writing at a vocational high school. In response to the growing presence of artificial intelligence in education, students increasingly use AI tools to support their writing activities. This research focuses on Meta AI, an AI feature integrated into WhatsApp, and examines students' attitudes from cognitive, affective, and behavioral dimensions, along with the perceived benefits and challenges of its use. A qualitative descriptive design was employed. Data were collected from 28 students through questionnaires, followed by in-depth interviews with 9 selected participants and supporting documentation. The findings reveal that students generally demonstrated very positive attitudes toward Meta AI, with high percentages across cognitive (86.19%), affective (90%), and behavioral (86.92%) dimensions. Students reported that Meta AI helped them generate ideas, improve vocabulary, enhance writing confidence, and complete tasks more efficiently. The study also identified key benefits, including personalized learning support, immediate feedback, increased engagement, and improved accessibility through WhatsApp. However, several challenges were also reported, such as unreliable internet connection, context-inaccurate responses, limited teacher guidance, and privacy concerns. Overall, the findings suggest that Meta AI serves as a supportive tool in EFL writing, although its use should be guided to ensure effective and responsible integration into learning practices.

Keywords: Artificial intelligence; meta AI; EFL writing; students' attitude; WhatApp

INTRODUCTION

Writing is one of the four fundamental language skills that learners need to develop in order to communicate effectively in English. Unlike receptive skills such as listening and reading, writing requires learners to actively construct meaning and express ideas in a clear, organized, and grammatically accurate manner. As a productive skill, writing plays an essential role in educational settings because it enables students to demonstrate their understanding, communicate arguments, and participate in academic discourse (Zulfi, 2021). For this reason, writing has become an important component of English language learning in schools.

Despite its significance, writing is often regarded as one of the most challenging skills for English as a Foreign Language (EFL) learners. Producing a well-developed text requires students to generate ideas, organize information logically, select appropriate vocabulary, and apply

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grammatical rules accurately. Many Indonesian students continue to struggle with these aspects of writing, particularly when they are required to develop extended texts in English (Sofeny & Khusnia, 2020; Suryani, 2020). These difficulties are frequently influenced by the differences between Indonesian and English language systems, which can lead to grammatical errors, limited expression of ideas, and weak text organization.

In response to these challenges, the Indonesian educational system has placed greater emphasis on students' ability to produce meaningful written texts. Under the Merdeka Curriculum, students are expected not only to write various types of texts but also to engage in the writing process through planning, drafting, revising, and editing their work. They are encouraged to demonstrate effective use of vocabulary, sentence structures, punctuation, and text organization (Ministry of Education, Culture, Research, and Technology, 2022). Among the text genres taught in senior and vocational high schools, analytical expository text is particularly demanding because it requires students to formulate a thesis, present logical arguments, and restate their position persuasively (Anderson, 1997). Successfully producing this type of text therefore requires both linguistic competence and critical thinking skills.

Alongside these educational expectations, recent technological developments have introduced new opportunities for supporting students' writing processes. Artificial Intelligence (AI) has increasingly become part of language learning environments, offering tools that can assist learners in generating ideas, improving grammar, expanding vocabulary, and organizing written content more effectively. Several studies have reported that AI can enhance writing efficiency and support students in completing writing tasks more confidently (Rehman & Khalil, 2024; Winarti et al., 2025). However, the growing use of AI in education has also raised concerns regarding students' dependence on technology, reduced critical engagement, and the possibility of relying on AI-generated content without fully understanding the writing process itself (Allehyani et al., 2025; Fatmawati et al., 2021). These contrasting perspectives suggest that the educational value of AI depends not only on the technology itself but also on how students perceive and utilize it.

One AI tool that has recently gained popularity among students is Meta AI, which is integrated into WhatsApp. As one of the most widely used communication platforms in Indonesia, WhatsApp provides easy access to AI-assisted support within students' daily digital interactions. Through Meta AI, students can quickly obtain translations, vocabulary suggestions, explanations, and examples of written texts. This accessibility has made the tool increasingly attractive for completing school assignments, including writing tasks. Nevertheless, the ease of access also raises questions about how students use the technology and whether it genuinely supports learning or merely simplifies task completion.

This issue became evident during preliminary observations conducted in a tenth-grade class at SMK NU 1 Karanggeneng. Many students reported using Meta AI on WhatsApp when working on English writing assignments. They frequently relied on the tool to translate words, generate sentences, and obtain examples related to their writing topics. Although these features appeared to help students complete their assignments more efficiently, classroom observations indicated that many of them still experienced difficulties in developing ideas independently, organizing arguments coherently, and producing complete analytical expository texts. This situation highlights the need to examine students' attitudes toward the use of Meta AI more closely, as their

perceptions may influence how effectively the technology contributes to their writing development.

Previous studies have generally shown positive attitudes toward AI-assisted writing. Students have reported that AI tools help improve writing quality, increase motivation, enhance self-confidence, and reduce the time needed to complete writing tasks (Aisyi, 2023; Nouara & Dehbia, 2023; Rosmayanti, 2024). Research has also explored the use of various AI-powered applications, including ChatGPT, DeepL, and Siri, in supporting language learning and writing activities (Haryanto & Ali, 2019; Wiarishintia et al., 2024; Erliani et al., 2025). More recently, studies have begun examining Meta AI integrated into WhatsApp and have identified its potential to assist students in improving their writing performance (Aswir et al., 2025). While these studies provide valuable insights into the benefits of AI-assisted learning, they have primarily focused on general educational contexts or different AI platforms.

As a result, limited attention has been given to vocational high school students' attitudes toward the use of Meta AI in WhatsApp, particularly in relation to writing analytical expository texts. Vocational students represent a unique educational group whose learning experiences and academic needs may differ from those of students in general secondary schools or higher education. Understanding how they perceive the benefits and challenges of AI-assisted writing is therefore important for ensuring that technology is integrated in ways that support meaningful learning rather than fostering excessive dependence.

Based on this gap, the present study aims to investigate vocational high school students' attitudes toward the use of Meta AI in WhatsApp for writing. Specifically, the study explores students' cognitive, affective, and behavioral attitudes, as well as their perceptions of the benefits and challenges associated with using Meta AI during the writing process. It is expected that the findings will contribute to the growing discussion on AI-assisted language learning and provide practical insights for teachers seeking to integrate AI technologies effectively into English writing instruction.

METHODS

Research Design

This study employed a descriptive mixed-methods design with a qualitative emphasis to investigate vocational high school students' attitudes toward the use of Meta AI in WhatsApp for writing. The design was selected because it enabled the researcher to obtain both a broad overview of students' attitudes through questionnaire data and a deeper understanding of their experiences through interviews. The combination of quantitative and qualitative data provided a more comprehensive picture of how students perceived the use of Meta AI in their writing activities (Creswell, 2014). Quantitative data were used to identify general attitude patterns, while qualitative data were used to explore the reasons underlying those attitudes.

Setting and Participants

The study was conducted at SMK NU 1 Karanggeneng during the 2025/2026 academic year. The participants were 28 tenth-grade students from class X-BD (Business Digital). This class was selected purposively because the students had experience using Meta AI integrated into WhatsApp

during English writing activities. All 28 students participated in the questionnaire survey. To obtain more in-depth information, nine students were subsequently selected for interviews based on their academic achievement levels, representing high, medium, and low achievers. This selection aimed to capture diverse perspectives and experiences regarding the use of Meta AI in writing.

Data Sources

The study utilized three sources of data. The primary source consisted of questionnaire responses collected from all participants to identify their cognitive, affective, and behavioral attitudes toward the use of Meta AI in WhatsApp. The second source comprised semi-structured interview data obtained from the selected participants to gain deeper insights into their experiences, perceptions, and challenges. The third source involved documentation in the form of screenshots of students' interactions with Meta AI during writing activities. These documents served as supporting evidence and contributed to data triangulation.

Research Instruments

Two main instruments were employed in this study: a questionnaire and an interview guide. The questionnaire was adapted from Yusuf (2021) and Abidan (2023) and consisted of 26 statements covering three dimensions of attitude, cognitive, affective, and behavioral, as well as students' perceptions of the benefits and challenges of using Meta AI in writing. Responses were measured using a five-point Likert scale ranging from strongly disagree to strongly agree. The interview guide was adapted from Aisyi (2023) and consisted of eight open-ended questions designed to explore students' experiences in greater depth. The questions focused on students' perceptions of Meta AI, its influence on their writing process, and the advantages and difficulties they encountered while using the tool. To ensure content validity, both instruments were reviewed by expert validators in the field of English language education. Feedback from the validators was used to revise and refine the instruments before data collection was conducted.

Data Collection Procedures

Data collection was carried out in several stages. First, the researcher obtained permission from the school and prepared the research instruments. Second, questionnaires were distributed to all participants after they had completed writing activities involving Meta AI in WhatsApp. Third, nine students were selected for semi-structured interviews based on their achievement levels and questionnaire responses. The interviews were conducted individually and recorded with participants' consent to ensure the accuracy of the data. Finally, documentation in the form of screenshots of students' interactions with Meta AI was collected to support and verify the findings obtained from the questionnaires and interviews.

Data Analysis

The collected data were analyzed using both quantitative and qualitative procedures. Questionnaire data were analyzed descriptively by calculating the percentage of responses for each item. The results were then categorized into five levels of attitude: strongly positive, positive, neutral, negative, and strongly negative, following the classification adapted from Aisyi (2024). The interview data were analyzed using thematic analysis. The analysis began with data transcription, followed by open coding to identify meaningful units of information. Similar codes were then grouped into broader categories through axial coding. From these categories, themes were

developed to represent students' cognitive, affective, and behavioral attitudes, as well as their perceptions of the benefits and challenges of using Meta AI in writing. The themes were continuously reviewed and refined to ensure consistency with the collected data. To enhance the trustworthiness of the findings, methodological triangulation was employed by comparing data obtained from questionnaires, interviews, and documentation. The convergence of evidence from these multiple sources helped strengthen the credibility and validity of the study.

FINDINGS

The findings of this study indicate that vocational high school students demonstrated highly positive attitudes toward the use of Meta AI in WhatsApp for writing. Data obtained from the questionnaire showed that all three dimensions of attitude, cognitive, affective, and behavioral, were categorized as strongly positive.

Table 1. Summary of Students' Attitudes toward Meta AI in WhatsApp

Aspect	Indicators (Highlights)	Mean Score	Percentage	Category
Cognitive	Ease of understanding, idea generation, vocabulary enrichment, grammar accuracy	3.48	86.92%	Strongly Positive
Affective	Motivation, comfort, reduced anxiety, confidence in writing	3.60	90.00%	Strongly Positive
Behavioral	Frequency of use, revision practice, self-monitoring, collaboration	3.48	86.92%	Strongly Positive

As shown in Table 1, the affective aspect obtained the highest percentage (90.00%), followed by the cognitive and behavioral aspects, both of which reached 86.92%. These results suggest that students generally perceived Meta AI as a beneficial tool that supported their writing activities and enhanced their overall learning experience.

Table 2: Students' Attitudes in the Cognitive Aspect

Category	Axial Code	Open Code	Code
Thought	Ease of Understanding	Learning Difficulty	Mixed Motivation
Belief	Writing Satisfaction	Learning Flexibility	SAT
Ideas	Knowledge Gain	Enjoyment Learning	KG

The findings show that students found writing tasks more understandable (EU) and manageable, even though some reported initial learning difficulty (LD) when adjusting to AI features. Meta AI enhanced their motivation (MM) and gave them writing satisfaction (SAT) due to reduced grammatical errors. Moreover, students enjoyed the flexibility (LF) of writing with AI, while also gaining new knowledge (KG) and experiencing more enjoyable learning (EL).

Cognitive Attitudes toward Meta AI in Writing

The questionnaire results revealed that students held strongly positive cognitive attitudes toward the use of Meta AI in WhatsApp. Most students believed that the tool helped them understand writing tasks more easily, generate ideas, enrich vocabulary, and improve grammatical accuracy. These perceptions indicate that students viewed Meta AI as a useful learning resource that facilitated the writing process. The interview findings supported these results. Several students explained that Meta AI helped them understand the structure of analytical expository texts and

provided guidance when they encountered difficulties during writing. Students also reported that the tool enabled them to explore vocabulary choices and identify grammatical errors that they might otherwise overlook.

One student stated:

“Meta AI makes it easier for me to understand the structure of analytical text.”

Another participant commented:

“I feel more satisfied because my writing looks better and clearer.”

These responses suggest that students perceived Meta AI not only as a source of information but also as a tool that improved their understanding of writing conventions and increased their confidence in producing written texts.

Affective Attitudes toward Meta AI in Writing

Among the three attitude dimensions, the affective aspect obtained the highest percentage score. The affective aspect revealed that students developed positive emotions, interest, and motivation while engaging with Meta AI in writing activities.

Table 3: Students' Attitudes in the Affective Aspect

Category	Axial Code	Open Code	Code
Feeling	Positive Feeling	Enjoyment Experience	Learning Interest

The data indicate that students experienced positive feelings (PF) when writing with Meta AI, reporting that the process was more enjoyable. They described the activity as an enjoyment experience (EE) that increased their interest in learning (LI). Students also associated the tool with feelings of happiness (HAP) and heightened self-motivation (SM) to continue writing.

This finding indicates that students developed positive feelings toward the use of Meta AI during writing activities. The questionnaire responses showed that students felt more motivated, comfortable, and confident when completing writing tasks with AI assistance. The interview data further revealed that Meta AI helped reduce anxiety commonly associated with English writing. Students reported feeling less worried about making grammatical mistakes because they could consult the AI for guidance and clarification. As a result, writing became a more enjoyable and less stressful experience.

One student explained:

“I feel happy when using Meta AI because it makes the writing process less stressful.”

Similarly, another participant noted:

“It motivates me to write more confidently.”

These findings suggest that the emotional support provided by Meta AI played an important role in enhancing students' engagement and willingness to participate in writing activities.

Behavioral Attitudes toward Meta AI in Writing

In terms of the behavioral aspect, students demonstrated attention, discipline, and respect while using Meta AI to support their writing.

Table 4: Students' Attitudes in the Behavioral Aspect

Category	Axial Code	Open Code	Code
Attention	Focused Attention	Sustained Focus	FA
Discipline	Enthusiasm	Ease in Submission	ENT
Respect	Feeling Supported	Ease of Expression	FS

Students also demonstrated strongly positive behavioral attitudes toward the use of Meta AI. Questionnaire data indicated that students frequently utilized the tool during writing activities and considered it helpful in completing assignments. Many participants reported using Meta AI to revise drafts, check vocabulary, and refine sentence structures before submitting their work. Interview findings revealed that students were more actively engaged in writing when supported by Meta AI. Several participants stated that the tool helped them maintain focus throughout the writing process and encouraged them to continue revising their work until they were satisfied with the results. Students also reported that Meta AI enabled them to express their ideas more effectively and complete assignments more efficiently.

One participant stated:

"I can concentrate longer because AI gives me direction."

Another student commented:

"It helps me express my thoughts more easily."

These responses indicate that students' positive perceptions of Meta AI were reflected in their writing behaviors, particularly in their willingness to use the tool as part of the drafting and revision process.

Perceived Benefits of Using Meta AI in Writing

Beyond attitudes, students identified several benefits associated with the use of Meta AI in WhatsApp. Questionnaire and interview data consistently showed that Meta AI assisted students in generating ideas, expanding vocabulary, improving grammar, and organizing written content. Students also appreciated the speed and convenience of receiving immediate feedback and suggestions. Many participants reported that Meta AI served as a supportive learning companion that provided explanations whenever they encountered difficulties. As a result, students felt more capable of completing writing tasks independently and efficiently.

Perceived Challenges of Using Meta AI in Writing

Despite their positive attitudes, students also acknowledged several challenges related to the use of Meta AI. Some participants reported that the responses generated by the AI were occasionally inaccurate or did not fully match the context of their assignments. Consequently, students recognized the importance of reviewing and evaluating AI-generated suggestions before incorporating them into their writing. In addition, a number of students expressed concerns about becoming overly dependent on AI assistance. They admitted that frequent use of Meta AI might

reduce their motivation to think critically or develop ideas independently. Limited internet access and technical issues were also mentioned as practical obstacles that sometimes affected the effectiveness of the tool.

Overall, although students viewed Meta AI positively and recognized its benefits for writing, they were also aware of the need to use the technology responsibly. The findings suggest that Meta AI can function as a valuable learning aid when it is used to support, rather than replace, students' own writing efforts.

DISCUSSION

The findings of this study indicate that vocational high school students generally demonstrated positive attitudes toward the use of Meta AI in WhatsApp for writing. These attitudes were reflected across the cognitive, affective, and behavioral dimensions, suggesting that students perceived Meta AI as a beneficial tool that supported their writing process. The positive responses may be attributed to the accessibility and practicality of Meta AI, which allows students to obtain immediate assistance with idea generation, vocabulary selection, grammar, and text organization within a familiar communication platform.

From the cognitive perspective, students viewed Meta AI as a useful learning resource that helped them understand writing tasks more easily and develop their ideas more effectively. Many participants reported that the tool assisted them in understanding the structure of analytical expository texts, expanding their vocabulary, and improving grammatical accuracy. According to attitude theory, the cognitive component refers to an individual's beliefs and perceptions regarding an object or activity. In this study, students' positive evaluations of Meta AI contributed to favorable cognitive attitudes toward its use in writing. These findings support previous studies that reported AI-assisted tools can facilitate idea development and language accuracy, thereby enhancing students' perceptions of writing competence ([Rehman & Khalil, 2024](#); [Winarti et al., 2025](#)).

The positive cognitive attitudes may also be explained by the characteristics of vocational students, who often value practical and efficient learning experiences. Since Meta AI provides immediate responses and writing support, students perceived it as a convenient resource for completing writing tasks. Rather than spending considerable time searching for vocabulary or grammatical explanations, they could access relevant assistance directly through WhatsApp. This accessibility appears to have increased students' confidence in managing writing assignments and overcoming difficulties encountered during the writing process.

The affective findings further revealed that students experienced positive emotions while using Meta AI. Participants reported feeling more motivated, comfortable, and confident when completing writing tasks with AI assistance. Several students explained that the tool reduced the stress and anxiety often associated with English writing, particularly concerns about grammatical errors and idea development. As a result, writing activities became more enjoyable and less intimidating.

These findings suggest that Meta AI influenced not only students' cognitive evaluations but also their emotional engagement with writing. Positive emotional experiences are important because they can increase students' willingness to participate in learning activities and sustain their interest

in writing. This finding is consistent with previous research indicating that AI-supported learning environments can enhance motivation, confidence, and learner engagement (Lin & Wu, 2023). For many students in this study, Meta AI functioned as a supportive learning companion that provided reassurance during the writing process. Consequently, students felt more comfortable expressing their ideas and were more willing to engage with writing tasks.

The behavioral dimension also demonstrated students' favorable attitudes toward Meta AI. The findings showed that students frequently used the tool to assist with drafting, revising, and refining their written work. They reported that Meta AI helped them maintain focus, complete assignments more efficiently, and express their ideas more clearly. These behaviors suggest that students were not merely interested in the technology but actively incorporated it into their writing practices.

From the perspective of attitude theory, behavioral attitudes reflect individuals' tendencies or intentions to act in certain ways toward an object. In this study, students' continued use of Meta AI and their willingness to rely on it during writing activities indicate positive behavioral intentions toward the technology. Similar findings have been reported in previous studies, which found that students who perceive AI tools as useful are more likely to integrate them into their learning routines and writing practices (Huang et al., 2023). The present study therefore suggests that positive cognitive and affective experiences contributed to students' behavioral acceptance of Meta AI as a writing support tool.

In addition to positive attitudes, students identified several benefits associated with the use of Meta AI. The most frequently reported advantages included assistance with idea generation, vocabulary enrichment, grammatical support, and writing efficiency. Students appreciated the ability to receive immediate feedback and suggestions, which helped them complete writing tasks more confidently. These findings reinforce the growing body of research suggesting that AI can function as a valuable scaffold in the writing process by providing timely support and reducing linguistic barriers for learners.

Despite these benefits, several challenges were also identified. Some students reported that AI-generated responses were occasionally inaccurate or not fully aligned with the context of their assignments. Others expressed concerns that frequent reliance on Meta AI could reduce opportunities for independent thinking and idea development. However, these concerns were not dominant within the data and were generally viewed as manageable limitations rather than major obstacles. This suggests that students recognized the usefulness of Meta AI while also acknowledging the importance of evaluating AI-generated information critically.

Overall, the findings demonstrate that Meta AI on WhatsApp has considerable potential to support writing instruction in vocational high school contexts. Students perceived the tool as helpful for improving understanding, increasing motivation, and facilitating writing performance. Nevertheless, the effectiveness of AI-assisted learning depends on how the technology is integrated into classroom practice. Rather than replacing students' own thinking processes, Meta AI should be used as a supportive tool that encourages idea development, language improvement, and critical reflection. Therefore, teachers play an important role in guiding students to use AI responsibly, ensuring that technological assistance contributes to both writing achievement and learner autonomy.

CONCLUSION

This study found that vocational high school students generally demonstrated positive attitudes toward the use of Meta AI in WhatsApp for writing. The findings revealed positive responses across the cognitive, affective, and behavioral dimensions of attitude, indicating that students perceived the tool as a helpful resource during writing activities. From the cognitive perspective, students reported that Meta AI assisted them in understanding writing tasks, generating ideas, expanding vocabulary, and improving grammatical accuracy. These perceptions suggest that students viewed the tool as beneficial in supporting their writing process. Nevertheless, some students also experienced difficulties in using AI effectively and expressed concerns related to motivation and dependence on AI assistance.

In the affective dimension, students expressed positive feelings toward the use of Meta AI, including enjoyment, interest, and increased confidence while writing. Many participants perceived writing activities as less stressful and more manageable when supported by AI, contributing to a more positive writing experience. Regarding behavioral attitudes, students reported actively using Meta AI to support drafting, revising, and expressing ideas more clearly. They also described greater focus and enthusiasm during writing activities. These findings indicate that students were generally willing to incorporate Meta AI into their writing practices as a supporting tool. Overall, the findings suggest that students perceived Meta AI positively and considered it useful for assisting various aspects of the writing process. At the same time, they recognized several challenges, including occasional inaccuracies in AI-generated responses and the possibility of becoming overly reliant on the technology. Therefore, the use of Meta AI in writing activities should be accompanied by appropriate guidance to encourage students to use AI critically and responsibly while continuing to develop their own writing abilities.

REFERENCES

- Abidan, F. (2023). Students' attitudes toward digital tools in EFL writing classrooms. *Journal of English Language Education*, 12(2), 45–58.
- Aisyi, N. (2023). EFL learners' perceptions of AI integration in writing practices. *Indonesian Journal of Applied Linguistics*, 13(1), 21–34.
- Allehyani, A., Alghamdi, A., & Alqahtani, A. (2025). Challenges of integrating AI in education: A review of privacy and dependency issues. *Education and Information Technologies*, 30(1), 113–128.
- Amir-Rudin, A., Mansor, N., & Said, M. (2023). Technology acceptance and AI use in higher education: Students' perspectives. *Computers & Education*, 191, 104638. <https://doi.org/10.1016/j.compedu.2023.104638>
- Anderson, M. (1997). *Text types in English 2*. Macmillan Education Australia.
- Aswir, S., Wulandari, E., & Fatmawati, A. (2025). Integrating Meta AI in WhatsApp to support students' writing performance. *International Journal of Instructional Technology and Education*, 14(1), 55–69.
- Batubara, H., Rahman, M., & Putri, S. (2024). Enhancing learning flexibility through AI tools in writing classrooms. *Journal of Language and Education Research*, 18(3), 233–249.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage.

- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Sage.
- Dhlakama, T., & Murairwa, S. (2024). Validating instruments in educational research: A practical approach. *International Journal of Social Research Methodology*, 27(1), 14–29.
- Dwivedi, Y. K., Hughes, L., & Gupta, A. (2023). The role of AI in shaping writing skills: Insights from university students. *Information Systems Frontiers*, 25(4), 889–903.
- Erliani, D., Hasanah, R., & Nurhadi, A. (2025). WhatsApp-based AI tools in EFL writing: Opportunities and limitations. *TESOL International Journal*, 20(2), 122–139.
- Fatmawati, I., Suryanto, E., & Mulyono, H. (2021). Student attitudes toward AI-driven learning applications. *Journal of English Teaching*, 7(3), 245–256.
- Gay, L. R. (1987). *Educational research: Competencies for analysis and application*. Merrill Publishing Company.
- Haryanto, T., & Ali, S. (2019). WhatsApp in mobile-assisted language learning: Benefits and challenges. *CALL-EJ*, 20(2), 87–101.
- Huang, R., & Hew, K. (2023). AI-supported adaptive learning: A framework for writing improvement. *Journal of Computer Assisted Learning*, 39(1), 55–70.
- Irmayani, D., & Wulandari, A. (2020). Digital platforms for collaborative writing in EFL: A study on Jamboard and Google Classroom. *Indonesian Journal of EFL and Linguistics*, 5(2), 123–141.
- Lin, C., & Wu, H. (2023). Technology-enhanced writing and student self-efficacy. *Journal of Educational Technology & Society*, 26(3), 45–60.
- Ministry of Education, Culture, Research, and Technology. (2022). *Merdeka curriculum framework*. Ministry of Education, Culture, Research, and Technology.
- Moleong, L. J. (2007). *Metodologi penelitian kualitatif*. PT Remaja Rosdakarya.
- Muktatima, R. (2023). The paradox of AI use in student writing: Supportive tool or shortcut? *Journal of English Studies*, 11(1), 77–90.
- Nguyen, T., & Nguyen, H. (2023). Learners' satisfaction and knowledge gain in AI-assisted writing. *Language Learning & Technology*, 27(2), 155–172.
- Nouara, A., & Dehbia, K. (2023). Exploring EFL learners' perceptions of AI-based writing tools. *Arab World English Journal*, 14(3), 183–199.
- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Sage.
- Paskalis, A. (2024). Intrinsic motivation in the age of AI-assisted writing. *Journal of Education and Learning*, 18(1), 99–115.
- Rehman, M., & Khalil, A. (2024). AI in EFL writing classrooms: Benefits and pedagogical implications. *Computers in Human Behavior*, 150, 107223.
- Rosmayanti, N. (2024). Students' attitudes toward ChatGPT for writing assignments. *ELT Worldwide*, 11(2), 88–102.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health*, 23(4), 334–340.
- Shadiev, R., Hwang, W.-Y., & Huang, Y. (2023). Artificial intelligence for language learning: Opportunities and challenges. *Educational Technology Research and Development*, 71(6), 3129–3152.
- Sofeny, A., & Khusnia, L. (2020). Common errors in students' writing under Indonesian-English interference. *Journal of English Pedagogy*, 8(2), 90–104.
- Sofiah, S., Hartono, R., & Rachmawati, D. (2023). Students' use of AI tools in EFL writing: Support and dependence. *Journal of Language Teaching Innovations*, 6(1), 55–67.

- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Sage.
- Sugiyono. (2018). *Metode penelitian pendidikan: Pendekatan kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Suryani, D. (2020). The difficulties of writing faced by EFL students. *Indonesian EFL Journal*, 6(1), 55–64.
- Winarti, S., Putra, B., & Astuti, T. (2025). AI-driven grammar tools in writing instruction: Impacts on accuracy and productivity. *International Journal of Emerging Technologies in Learning*, 20(1), 33–47.
- Wiarishintia, P., Nugraha, E., & Santoso, H. (2024). AI-assisted translation tools in EFL writing: A case study of DeepL. *CALL-EJ*, 25(1), 99–115.
- Zahro, F. (2023). The role of digital feedback in enhancing writing comprehension. *Journal of Applied Linguistics*, 13(2), 200–212.
- Zulfi, R. (2021). Writing difficulties of Indonesian EFL learners. *English Review: Journal of English Education*, 9(2), 123–132.