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AI Utilization in ...
Yofi Ariski, dkk

AI UTILIZATION IN LANGUAGE LEARNING: INVESTIGATING THE MOTIVES AND IMPACT OF ARTIFICIAL INTELLIGENCE ON STUDENTS' WRITING SKILLS

Yofi Ariski [1], Safrul Muluk [2]
Universitas Islam Negeri Ar-Raniry, Indonesia[1*]
Korespondensi: yofiariski@gmail.com[1*], safrul.muluk@ar-raniry.ac.id[2*]

ABSTRACT
The purpose of this study is to investigate the motives for using AI (Artificial Intelligence) and its impact on the writing skills of EFL (English as a Foreign Language) students. Using mixed methods, this study involved 30 active EFL students. Data were collected through a Likert scale questionnaire to measure the motives for using AI and a writing test before and after using AI. The results showed that the main motives for using AI were to improve writing quality (85%), to help in the editing process (78%), and to increase time efficiency (72%). The analysis of writing skills showed significant improvements in organization (+25%), vocabulary (+30%), and grammar (+28%). However, there was a decrease in originality (-15%). The implications of this study provide new insights into the integration of AI in language learning and the importance of balancing the use of technology with the development of independent writing skills.
Keywords: Artificial Intelligence, writing skills, EFL learning, motives for using AI

1. INTRODUCTION

The development of Artificial Intelligence (AI) technology has brought significant changes in various aspects of life, including the world of education, especially language learning (Simangunsong et al., 2023). In the last decade, the emergence of various AI platforms such as ChatGPT, Grammarly, and similar applications have provided innovative solutions to help students develop their English skills. This phenomenon has become increasingly relevant given the demands of the digital age, which require learners to be able to produce quality written content efficiently (Nurfidari et al., 2024). According to a recent survey released by Statista Consumer Insights, Indonesia ranks fourth among the most enthusiastic countries in the adoption of artificial intelligence (AI) in daily life. The survey indicates that 41 percent of respondents in Indonesia expressed their enthusiasm for using AI technologies, such as ChatGPT, for various needs (Qomariyah, 2024).
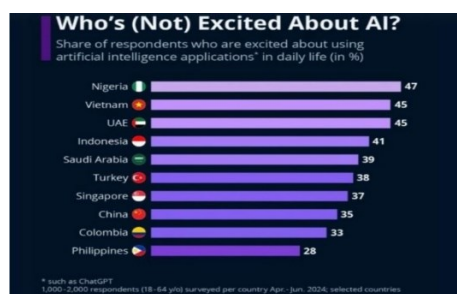

Figure 1. The graph of AI usage in the world

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AI Utilization in ...
Yofi Ariski, dkk

The digital transformation of language learning has created a new paradigm in the teaching and learning process. Artificial intelligence is not just a simple tool, but has evolved into a virtual assistant that can provide real-time feedback, suggestions for improvement, and even generate content that can be customized according to the user's needs. This presents both challenges and opportunities for educators and learners in optimizing the language learning process (Nurfidari et al., 2024). Although the use of AI in language learning has shown promising potential, there are still concerns about its impact on learners' natural writing skills (Akhyar et al., 2023). Some previous studies have shown a tendency for AI dependence to affect learners' creativity and critical thinking skills. Therefore, it is important to have an in-depth understanding of the motives for using AI and its impact on writing skills.

In Indonesia, the phenomenon of using AI in learning English as a foreign language (EFL) has become a significant trend, especially at the higher education level. The rapid development of artificial intelligence (AI) technology has had a significant impact on various fields, including education. AI-based tools, such as automatic grammar checkers, summarization tools, and translation applications, facilitate learning by providing quick feedback and personalized materials. With AI, students can access a wider range of relevant learning resources based on their needs. For example, translator apps not only help students understand new vocabulary, but also provide the right context for its use. This allows students to learn languages in a more interactive and enjoyable way, increasing their motivation to learn (Ziturrahmi, 2024).

In the context of language learning, AI can play an important role in improving writing and reading skills by analyzing grammar and syntax and making suggestions for improving content. These programs are able to evaluate students' writing in detail, highlighting errors and suggesting appropriate improvements. In addition, AI can help create exercises that are tailored to the student's skill level, making learning more effective. Thus, AI serves not only as a tool, but also as a partner in the educational process, helping students achieve their academic goals more efficiently and thoroughly (Efrizal et al., 2024).

Previous research conducted by Miftachudin (2017) found that while many students embrace the support provided by AI in terms of easier access to information, increased writing efficiency, and improved comprehension, concerns remain about over-reliance on technology and the potential impact on self-directed learning. This research contributes to the

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AI Utilization in ...
Yofi Ariski, dkk

broader discussion about the integration of advanced technologies into educational practice and the implications for future learning environments.

Several research studies have explored the implementation of the flipped classroom model to improve students' reading abilities, resulting in positive effects on their reading proficiency. These studies highlight the potential of technology-based interventions to enhance language skills. Similarly, exploring the integration of AI tools in language learning, particularly in writing, could reveal comparable benefits. Just as the flipped classroom leverages technology to shift instruction and promote active learning, AI tools may offer novel ways to engage students in the writing process, provide personalized feedback, and ultimately improve their writing skills (Septiani et al., 2024).

This research gap provides a basis for further investigation into the motives for using AI and its impact on EFL students' writing skills. By understanding both aspects, it is expected to make a significant contribution to the development of more effective learning strategies through the appropriate integration of AI technology.

2. LITERATURE REVIEW

a. Definition of Artificial Intelligence (AI)

Artificial Intelligence (AI) is a branch of computer science that focuses on developing systems and technologies that can mimic or simulate human intelligence. AI encompasses a wide range of techniques and methods, such as machine learning, natural language processing, and computer vision. By using sophisticated algorithms, AI can analyze data, learn from experience, and make decisions with a high degree of autonomy (Simangunsong et al., 2023).

AI has a wide range of applications in everyday life, from virtual assistants such as Siri and Alexa to recommendation systems used by platforms such as Netflix and Amazon. AI is also being used in healthcare for disease diagnosis, in industry for process automation, and in autonomous vehicles to improve transportation safety and efficiency. With the ability to process large amounts of information and look for patterns that are invisible to humans, AI has the potential to revolutionize many aspects of life (Nurfidari et al., 2024).

However, the focus of AI in this research is artificial intelligence as it relates to English language learning, specifically in the context of writing skills, such as ChatGPT, Grammarly, and similar applications that have provided innovative solutions to help EFL students develop their writing skills.

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AI Utilization in ...
Yofi Ariski, dkk

b. The Role of AI in Language Learning

Artificial Intelligence has experienced rapid development in the world of language education, presenting various platforms and tools that facilitate the learning process. Platforms such as ChatGPT, Grammarly, and similar applications have become virtual assistants capable of providing real-time assistance in the language learning process, especially in the aspect of writing (Simangunsong et al., 2023). The implementation of AI in language learning has changed the traditional paradigm to be more adaptive and personalized. AI does not only function as a simple proofreading tool, but has evolved into a system that is able to provide constructive feedback, analyze error patterns, and provide improvement recommendations tailored to the individual needs of the learner (Adrian & Dewayanto, 2024).

The rapid development of AI technology has had a significant impact on various fields, including education. AI-based tools, such as automatic grammar checkers, summarization tools, and translation apps, facilitate learning by providing quick feedback and personalized materials. In the context of language learning, AI can play an important role in improving writing and reading skills by analyzing grammar and syntax and providing suggestions for improving content (Alatas, 2024).

c. Motivations for using AI in writing instruction

Motivations for using AI in writing instruction vary, but the majority of learners use it to improve the quality of their writing. Time efficiency and ease of editing are also key drivers for using AI in writing instruction. The need to produce high quality writing is the dominant motivation among EFL learners. This is driven by higher academic demands and the need to produce writing that meets international standards (Wahyudin et al., 2023).

The usability and accessibility aspects of AI also play an important role in motivating its use. The ability of AI to provide instant feedback and real-time suggestions for improvement is attractive to learners who want to improve their writing skills efficiently (Julianto & Ratumanan, 2023).

d. Impact of AI on Writing Skills

The use of AI in writing instruction shows a significant impact on various aspects of language skills. Improvements are seen primarily in technical aspects such as writing organization, vocabulary use, and grammatical accuracy. However, some studies show a negative impact on creativity and originality. Reliance on AI can reduce learners' ability to develop original ideas and express their thoughts independently (Aswan et al., 2023).

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The balance between the use of AI and the development of independent writing skills is an important focus in language learning. Researchers emphasize the importance of finding the optimal point between AI support and the development of natural writing skills (Wahyudin et al., 2023).

e. Integrating AI into EFL learning systems

The integration of AI into EFL learning systems requires a systematic and planned approach. There must be clear guidelines on how to use AI effectively without compromising important aspects of language learning. Educators have a crucial role to play in ensuring a balanced use of AI in learning. They need to design tasks that encourage creativity and critical thinking, while still taking advantage of AI in the technical aspects of language learning (Yani, 2024).

Continuous evaluation of the effectiveness of AI integration is also necessary to ensure that learning goals are being met. This includes monitoring the use of AI, assessing its impact on writing skills, and adjusting learning strategies according to learners' needs (Sulaeman et al., 2024).

3. METHOD

This study used a mixed-method approach with a sequential explanatory design. The quantitative approach was used to measure motives for using AI through questionnaires and to analyze changes in writing skills through pre- and post-tests. The qualitative approach was used to analyze students' essay responses and gain an in-depth understanding of their experiences in using AI.

This study involved 30 EFL students' with the following criteria: (1) active students majoring in English, (2) experienced in using AI for at least 3 months, and (3) willing to participate in all stages of the study. Respondents were selected using *purposive sampling technique* based on predetermined criteria. They were selected by meeting with active English Education students as EFL students' by visiting classes that were not conducting lessons. Before starting the research, the researchers asked potential respondents whether they had at least three months of experience using AI and whether they were willing to participate in this research by answering a questionnaire and writing essay (pre-test and post-test). Those who agreed and met the criteria were included as respondents in this study.

a. Research Instruments

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AI Utilization in ...
Yofi Ariski, dkk

1) AI Motive to Use Questionnaire

(a) Likert scale (1-5) with 20 statement items

(b) Includes 4 dimensions: usefulness, ease of use, effectiveness, and satisfaction

(c) Validity and reliability tested using Cronbach's Alpha ($\alpha = 0.87$)

2) Writing Test

(a) Pre-test: Writing a personal experience essay (250-350 words) without using AI

(b) Post-test: Writing a personal experience essay with a different topic using AI assistance

(c) The scoring rubric includes 5 aspects: organization, vocabulary, grammar, content, and originality.

Table 1. Writing Skills Assessment Rubric

Aspect	Score 1 (Very Poor)	Score 2 (Poor)	Score 3 (Fair)	Score 4 (Good)	Score 5 (Very Good)
Organization	Unstructured	Organization	Less clear structure	Well structured	Very structured and cohesive
Vocabulary	Limited	Limited	Moderately varied	Varied	Very rich and precise
Grammar	Many errors	Many errors	Some errors	Few errors	Almost no errors
Content	Not relevant	Not relevant	Quite relevant	Relevant	Very relevant and in-depth
Originality	Not original	Not original	Enough original	Original	Very original and creative

4. RESULTS

a. Motives for AI Use

Table 2. Distribution of AI Use Motives (N=30)

Motive	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Improving the quality of writing	45%	40%	10%	3%	2%
Time efficiency	38%	34%	15%	8%	5%
Editing assistance	42%	36%	12%	7%	3%
Idea development	35%	33%	20%	7%	5%
Independent learning	30%	35%	22%	8%	8%

b. Comparison of Writing Skills

Table 3. Comparison of Pre-test and Post-test Scores (N=30)

Aspect	Pre-test (Mean)	Post-test (Mean)	Change (%)
Organization	2.5	3.1	+25%
Vocabulary	2.3	3.0	+30%
Grammar	2.4	3.1	+28%
Content	2.6	2.9	+12%
Originality	3.2	2.7	-15%

Based on the results of the study conducted on 30 EFL students using a sequential explanatory approach, several important findings were found regarding the motives for using AI and its impact on students' writing skills.

5. DISCUSSION

Analysis of motives for using AI The results of the Likert scale questionnaire analysis showed that the main motivation of students in using AI for learning to write is to improve the quality of writing, with 85% of the respondents (45% strongly agree and 40% agree) expressing their agreement. This finding indicates that EFL students are highly aware of the importance of producing quality writing in an academic context.

Time efficiency was the second biggest motivation, with 72% of respondents (38% strongly agree and 34% agree) acknowledging that AI helped them optimize the time spent on the writing process. This reflects the need for students to manage their academic load effectively, especially in the context of foreign language learning, which requires more time and effort in the writing process.

Editing support came in third with 78% of respondents (42% strongly agreed and 36% agreed) stating that AI was very helpful in the editing process of their writing. This finding shows that students are using AI as a tool to improve the accuracy and technical quality of their writing, in line with increasing academic demands.

The comparative analysis of the pre-test and post-test results showed significant changes in various aspects of writing skills. In the organizational aspect, there was an increase of 25% (from an average score of 2.5 to 3.1). This increase shows that the use of AI helps students to produce more structured and cohesive writing. This is reflected in improved paragraph structure, transitions between ideas, and more systematic development of ideas.

The vocabulary aspect showed the largest increase of 30% (from an average score of 2.3 to 3.0). This increase shows that AI is effective in helping students enrich their vocabulary

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AI Utilization in ...
Yofi Ariski, dkk

and use more appropriate vocabulary depending on the context. Students showed better ability to choose appropriate words and use a wider variety of vocabulary. Grammar also improved significantly by 28% (from an average score of 2.4 to 3.1). This included improvements in the use of sentence structure, tenses, and other grammatical aspects. AI proved effective in helping students identify and correct grammatical errors in their writing.

However, an important finding to note is the 15% decrease in originality (from an average score of 3.2 to 2.7). This decrease suggests a risk of AI dependency that may reduce the creativity and uniqueness of students' writing. This is consistent with the concerns raised in the literature review about the potential negative impact of AI on students' natural writing skills.

On the pedagogical implications, the findings of this study have important implications for language learning practices. First, there needs to be a balance between the use of AI and the development of independent writing skills. Teachers need to design tasks that encourage students to use AI selectively while still developing their critical thinking skills and creativity. Second, there is a need to develop clear guidelines for the use of AI in writing instruction. These guidelines should include the technical aspects of using AI, the limitations that need to be considered, and strategies for maximizing the benefits of AI while minimizing its negative effects. Third, the importance of ongoing monitoring and evaluation of the use of AI in learning. Teachers need to regularly assess the impact of AI use on students' development of writing skills and make adjustments to learning strategies as needed.

In relation to recommendations for teaching practice, some practical recommendations can be implemented in teaching writing. Teachers are advised to design a learning system that integrates AI proportionately, while still providing space for the development of students' creativity and critical thinking skills. Students need to be guided to use AI as a tool, not as a substitute for their writing skills. Learning strategies must be designed to encourage students to develop their original ideas before using AI for technical improvement.

This study opens up opportunities for further investigation in several aspects. Longitudinal studies are needed to understand the long-term effects of using AI on the development of students' writing skills. In addition, research is needed on effective strategies for integrating AI into the language learning curriculum. Further investigation into the psychological aspects of using AI in writing instruction, including its impact on students' motivation to learn and their self-confidence, is also a potential area for further research.

This study shows that the use of AI in writing instruction has significant potential to improve the technical aspects of writing, but it must be balanced with appropriate strategies to maintain and develop students' creativity and independent writing skills. The success of AI integration in writing learning will largely depend on how this technology is used wisely and proportionately in the context of language learning. Based on the findings of this research, which demonstrate AI's potential to improve the quality and efficiency of writing, there is alignment with the research of Akhyar et al. (2023), which also highlights similar potential. Both studies agree that AI can be a useful tool in writing, but it needs to be used wisely to avoid negative impacts such as a loss of originality and excessive dependence. However, this research also reveals a decrease in originality in EFL students' writing after using AI, which differs from the main focus of Akhyar et al. (2023), which does not specifically address the aspect of originality.

This indicates that although AI can improve technical aspects of writing such as organization, vocabulary, and grammar, special attention needs to be given to efforts to maintain and encourage originality in the writing process. Therefore, there needs to be an effective strategy to integrate AI into writing instruction without sacrificing students' ability to generate original ideas and develop their personal writing styles. Therefore, there is a significant correlation with previous studies regarding the utilization of Artificial Intelligence (AI) in language learning, particularly in enhancing writing skills. Consistent with the research conducted by Sulaeman, et.al. (2024), which emphasizes the role of AI as an effective tool for providing automated feedback, analyzing individual learning needs, and developing data-driven writing skills, this research also found that students' primary motivation in using AI is to improve writing quality, assist in the editing process, and increase time efficiency. This finding is reinforced by the results of the research that has been conducted, which shows a significant improvement in organization, vocabulary, and grammar after the use of AI. However, it should be noted that there is a decrease in the originality of writing, indicating the need for a balance between the use of AI technology and the development of independent writing skills. This analysis underscores that while AI offers significant benefits in writing learning, it is important for students to continue developing critical and creative thinking skills so as not to be completely dependent on technology and still produce original written work.

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AI Utilization in ...
Yofi Ariski, dkk

This research finding also aligns with the trend identified by Wahyudin, et al. (2023) in their study on enhancing the writing skills of teachers at SMK Negeri 1 Demak through the utilization of AI, where training and mentoring in the use of AI in scientific writing proved effective in improving teachers' professional competence. This research also confirms that the main motivation in using AI is to improve the quality of writing and time efficiency, paralleling the findings regarding significant improvements in organization, vocabulary, and grammar after AI usage. However, the observed decrease in originality in this research underscores a challenge not explicitly discussed in Wahyudin et al.'s study, namely the need for strategies to maintain creativity and independent thinking in the writing process. This indicates that the integration of AI in language learning should be balanced with an emphasis on developing writing skills that are independent of technology, so that students can utilize AI as a tool without sacrificing their ability to produce original and innovative written works.

In this study, the findings regarding the utilization of AI in language learning align with previous research conducted by Julianto and Ratumanan (2022), which also found that innovative approaches can enhance students' writing skills. This prior research revealed that the main motivations for students using AI are to improve writing quality and time efficiency, which is consistent with our findings showing significant improvements in completeness, structure, and creativity of writing. However, there is a difference concerning originality, where this study indicates a decrease of -15% in that aspect. This highlights the need for greater attention to maintaining a balance between the use of technology and the development of students' independent writing skills. Therefore, it is crucial to formulate teaching strategies that not only leverage AI technology but also encourage creativity and originality in the writing process. This research supports the argument that AI integration can provide a more interactive learning experience, while also emphasising the challenges that must be addressed to ensure that students continue to develop their writing abilities independently.

6. CONCLUSION

Based on the results of the study, it can be concluded that the main motives of EFL students in using AI for writing learning are to improve the quality of writing (85%), to assist in the editing process (78%), and to save time (72%). These motivations reflect students' need to produce quality academic writing while managing their time effectively in the context of foreign language learning.

The results of the impact analysis of using AI showed significant improvements in technical aspects of writing, including organization (+25%), vocabulary (+30%), and grammar (+28%). However, there was a decrease in originality (-15%), suggesting the need for learning strategies that balance the use of AI with the development of independent writing skills. These findings underscore the importance of developing clear guidelines for the use of AI in the writing classroom, as well as ongoing monitoring to ensure that the technology is being used optimally without compromising students' creativity and critical thinking skills.

REFERENCES

Adrian, F. H., & Totok Dewayanto. (2024). Integrasi Blockchain Dan Artificial Intelligence Pada Kurikulum Akuntansi: Systematic Literature Review. *Diponegoro Journal of Accounting*, *13*(3), 1–13.

Akhyar, M., Zakir, S., Gusli, R.A., & Fuad, R. (2023). Pemanfaatan Artificial Intelligence (Ai) Perflexity Ai Dalam Penulisan Tugas Mahasiswa Pascasarjana. *Idarah Tarbawiyah: Journal of Management in Islamic Education*, *4*(2), 219–228. https://doi.org/10.32832/itjmie.v4i2.15435

Alatas, M. A. (2024). *Penggunaan AI dalam Pembelajaran Bahasa Madura pada Siswa Sekolah Dasar di Kabupaten Pamekasan*. 174–185.

Aswan, A., Harsiati, T., & Widyartono, D. (2023). Metode Field Trip Berbasis Virtual Reality pada Pembelajaran Menulis Puisi Sebuah Desain Pembelajaran Digital di Era Kurikulum Merdeka: *Journal of Smart System*, *3*(1), 10–24. https://ejournal.utp.ac.id/index.php/JSS/article/view/2827

Efrizal, D., Kristiawan, M., & Risdianto, E. K. O. (2024). *Pedagogical And Cybergogy Orientation On Artificial Intillegent Era For English Subject In Islamic Boarding School*. 235–248.

Julianto, T.S., & Ratumanan, S. (2023). Pemanfaatan Generatif AI dalam Pembelajaran Bahasa untuk Siswa SD: Pendekatan Inovatif dalam Meningkatkan Kemampuan Menulis. *Bima Journal of Elementary Education*, *1*(2), 48–52. https://doi.org/10.37630/bijee.v1i2.1224

Miftachudin, M. (2017). Students' Perceptions of the Use of Blogs in English Language Learning. *Register Journal*, *10*(1), 101. https://doi.org/10.18326/rgt.v10i1.878

Nurfidari, Ahyar, A., & Fitriati, I. (2024). Implementation of Artificial Intelligence Technology as a Learning Means for Students at SMAN 2 Monta Bima. *Expert Net: Exploration Journal of Technological Education Trends*, *1*(1), 14–23. https://doi.org/10.59923/expertnet.v1i1.121

Qomariyah, U. (2024). *Pemanfaatan Artificial Intelligence (AI) Sebagai Katalisator Peningkatan Keterampilan Menulis Guru*. *1*(4), 135–140.

Jurnal MUDARRISUNA: Media Kajian Pendidikan Agama Islam
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AI Utilization in …
Yofi Ariski, dkk

Septiani, R., Muluk, S., & Habiburrahim, H. (2024). The implementation of the flipped classroom approach to improve the EFL students' reading ability. *Englisia: Journal of Language, Education, and Humanities*, *11*(2), 181. https://doi.org/10.22373/ej.v11i2.2273

Simangunsong, A. D., Sitompul, H. S., Pane, E. P., Novatrasio, G., & Sumatera, U. D. (2023). the Effect of Project-Based Learning Through Artificial Intelligence (Ai) in Increasing Students ' Creativity and Learning Achievement. *Dharmas Education Journal*, *4*(3), 128–134.

Sulaeman, Anggraini, R., Paramansyah, A., Fata, T. H., & Judijanto, L. (2024). Peran Artificial Intelligences Sebagai Alat Bantu Dalam Meningkatkan Keterampilan Menulis Mahasiswa Pendidikan Agama Islam Di Era Disruptif. *INNOVATIVE: Journal Of Social Science Research*, *4*(1), 1–11.

Wahyudin, A., Yanto, H., Sari, M. P., Nurkhin, A., & Budiantoro, R. A. (2023). Peningkatan Kemampuan Menulis dengan Pemanfaatan Kecerdasan Buatan (AI) bagi Guru SMK Negeri 1 Demak. *Eastasouth Journal of Impactive Community Services*, *2*(01), 13–31. https://doi.org/10.58812/ejimcs.v2i01.156

Yani, A. (2024). Peran artificial intelligence sebagai salah satu faktor dalam menentukan kualitas mahasiswa di era society 5.0. *Journal of Education Research*, *5*(2), 1089–1096.

Ziturrahmi. (2024). Pengembangan Pembelajaran Berdeferensiasi Dengan Integrasi Animasi 3d, Artificial Intelligence (Ai), Dan Google Slides Untuk Meningkatkan Minat Dan Hasil Belajar Pendidikan Bahasa Inggris. *Dharmas Education Journal)*, *5*(2), 830–840.