

## Exploring the Use of Artificial Intelligence as Writing Assistant in EFL Classroom: A Systematic Literature Review

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**Abstract**—The rapid development of artificial intelligence has brought English language learning to a new era. English language skills are now can be acquired and enhanced with a support of artificial intelligence tools. This study aims to explore the implementation of artificial intelligence in English as Foreign Language (EFL) teaching and learning process especially in enhancing EFL students' writing skill as well as to review its impact on EFL students. Systematic Literature Review approach was utilized with seventeen empirical research articles chosen as data source in this study. The selection of the data sources was conducted in two stages, namely based on title and based on full text. The articles were gathered from google scholar search engine using “AI for English writing EFL students” as the keywords. The result of the analysis shows that there are several types of AI-powered tools or application that can be used as writing assistant in EFL classroom. Those tools are, for instance, ChatGPT, Grammarly, Google Docs, Writerly, Quillbot, any some others. The implementation of AI-powered tools as writing assistant has proven to be able to improve EFL students' writing skills, motivation, and perception. However, several drawbacks of the use of AI are also pointed out, such as concern on over-reliance and plagiarism issue. Therefore, it is essential to design a balance integration between the use of AI as writing assistant and conventional learning approach in an EFL classroom.

**Keywords:** *artificial intelligence, EFL, writing skill*

**Abstrak**—Perkembangan kecerdasan buatan dewasa ini telah membawa perubahan yang signifikan dalam proses pengajaran dan pembelajaran bahasa Inggris sebagai bahasa asing. Saat ini, keterampilan berbahasa Inggris dapat diperoleh dan diasah dengan bantuan alat-alat kecerdasan buatan. Penelitian ini berupaya untuk mengeksplorasi penggunaan kecerdasan buatan dalam proses pengajaran dan pembelajaran bahasa Inggris sebagai bahasa asing, khususnya dalam mengasah dan meningkatkan keterampilan menulis pembelajar bahasa sekaligus mengulas pengaruh penggunaannya terhadap pembelajar bahasa itu sendiri. Penelitian ini menggunakan pendekatan kajian pustaka sistematik dengan tujuh belas artikel ilmiah yang menjadi sumber data dalam penelitian ini. Pemilihan artikel ilmiah dilakukan dalam dua tahapan, yakni tahapan seleksi berdasarkan judul dan seleksi berdasarkan teks. Artikel-artikel ilmiah yang diulas dalam penelitian ini dikumpulkan melalui piranti pencarian *Google Cendekiawan*, dengan menggunakan kata kunci “AI untuk menulis bahasa Inggris pembelajar bahasa Inggris”. Hasil analisis penelitian ini menunjukkan bahwa terdapat berbagai jenis aplikasi kecerdasan buatan yang dapat digunakan sebagai alat bantu menulis dalam

pembelajaran bahasa Inggris sebagai bahasa asing. Beberapa aplikasi tersebut antara lain *ChatGPT*, *Grammarly*, *Google Docs*, *Writerly*, *Quillbot*, dan lainnya. Penggunaan aplikasi berbasis kecerdasan buatan dalam pembelajaran bahasa Inggris sebagai bahasa asing telah terbukti dapat meningkatkan keterampilan menulis siswa, motivasi, dan juga memperoleh persepsi yang positif dari siswa. Akan tetapi, ditemukan pula beberapa kelemahan penggunaan aplikasi kecerdasan buatan dalam proses pembelajaran bahasa Inggris, seperti misalnya ketergantungan dan juga isu plagiarisme. Oleh sebab itu, penting untuk menyusun proses pembelajaran bahasa Inggris sebagai bahasa asing dengan integrasi yang seimbang antara penggunaan aplikasi berbasis kecerdasan buatan dengan pendekatan konvensional dalam sebuah proses pembelajaran bahasa Inggris sebagai bahasa asing.

**Kata Kunci:** *kecerdasan buatan, keterampilan menulis, pembelajaran bahasa Inggris*

## 1. Introduction

English has always played important role in global communication and is considered as a global language for several reasons (Crystal, 2003). Firstly, English is spoken as mother tongue by large number of people in several countries, not only in England or Britain, but also USA, Canada, Australia, and many more. Secondly, English is also the official language of some countries such as India and Singapore, meaning that it is used in certain domains as government and the media in the country. Moreover, English is widely used as medium of communication and interaction in various field at international level, such as business, education, media, technology and science. Therefore, to be involved in global interaction, English proficiency is considered mandatory and learning English as foreign language is obligatory for students in many countries.

Learning foreign language, especially English, could be challenging. The challenges can be ranging from difficulty of pronouncing words, understanding grammatical structures, lack of vocabularies, and so on (Mahrina, 2023; Ryan et al., 2024). Not to mention that mastering English, or any language in general, meaning that one is required to have adequate proficiency in four skills, namely speaking, listening, reading, and writing. Among these four skills, writing skill is always considered the most difficult to master (Phuket, 2015). This view is certainly fully understandable because writing is a very complex process, involving the process of pouring one's ideas and thoughts into language symbols so that they can be communicated and understood by others. In order to achieve this, the ability to organize ideas and good language skills are required. Therefore, writing is not a language skill that is easy to master, let alone writing in a foreign language, such as English.

The challenges faced by learners of English as a foreign language can vary and start from a lack of vocabulary mastery, the ability to understand sentence structure, a lack of understanding of

cohesion and coherence, and even in the process of finding ideas in writing (Ariyanti & Fitriana, 2017).

The increasingly rapid development of technology has had a positive impact on the development of the teaching and learning process of English as a foreign language. The existence of technology makes learning English as foreign language (EFL) more accessible to everyone. Likewise in honing the four language skills. However, only very few research was conducted to explain how AI can be integrated in EFL learning process as well as to assess whether the emergence of AI can truly improve EFL learners' writing skills. This study was conducted to provide a review of the use of AI as a writing assistant in the process of teaching and learning English as a foreign language by exploring its implementation in EFL settings and the impacts it can have on language learners, both positively and negatively, based on previous studies.

## 2. Methods

This study is a Systematic Literature Review that aims to analyse the use of AI as a writing assistant in the process of learning English as a foreign language. Systematic Literature Review is a method in secondary research that is carried out to identify, evaluate and interpret relevant research results related to a particular topic or problem (Kitchenham, 2004). Referring to the definition above, this study uses the results of previous studies that are related to the use of AI in the process of learning English as a foreign language.

The research reviewed in this study was obtained through a search on the Google Scholar database with the specified criteria emphasizing studies that analyse the implementation or use of AI in the process of learning English as a foreign language, especially in writing skills, and studies that analyse the impact of its use in the EFL learners and learning process. The keywords used in the search are "AI for English writing EFL students". The selection process for the studies reviewed in this

study was carried out in two stages. In the first stage, articles that appeared in the search results were filtered based on title and abstract. In this phase, there were 20 research articles obtained. In the second stage, articles were filtered based on full text. Through these two stages, 17 articles were obtained that met the specified criteria, 3 articles were rejected because they are not empirical studies.

### 3. Result and Discussion

#### 3.1 Result

As have been aforementioned above, there are 17 articles which were reviewed in this study. The following table provides an overview of the articles to answer the research problems of this study.

Table 3.1. Research Articles Reviewed

Title/Author	Methodology	Key Findings
The Impact of Artificial Intelligence on Enhancing EFL Writing Skills among High School Students (Alzahrani & Alotaibi, 2024)	Pure experimental design	The use of AI (ChatGPT) improved the students overall writing skill, proven by the increase of the students' mean score
Quillbot as an AI-powered English Writing Assistant: An Alternative for Students to Write English (Amanda, et al, 2023)	Qualitative study	Students showed positive perceptions on the use of Quillbot in improving writing and it is considered helpful to the students
Impact of AI-powered Chatbots on EFL Students'	Mixed Method	The use of Chatbots improved the students'

Writing Skills, Self-Efficacy, and Self-Regulation: A Mixed Method Study (Apriani, et al, 2024)

The Effect of AI-Based Applications on EFL Writing Skill Development: An Inquiry into Integration of AI into Language Learning (Etaat, 2024)

Grammarly as AI-powered English Writing Assistant: Students' Alternative for English Writing (Fitria, 2021)

Exploring an AI-based Writing Assistant's Impact on English Language Learners (Gayed, et al, 2022)

Examining the Effectiveness of AI-integrated Approach in

writing proficiency and self-regulation. It also increased students' confidence, motivation and engagement  
The experimental group showed improvement in overall writing skills. The use of AI-based applications also accelerated the writing process.

The students' performance in writing increased after the use of Grammarly.

AI KAKU, an AI-based writing assistant is proven to be a useful tool for English language learners

Integrating the use of ChatGPT in writing classes is

EFL Writing: A Case of Chat GPT (Harunasari, 2023)		proven effective in improving students' writing skills especially in generating ideas, planning stories, as well as grammar and spelling correction.	EFL Learners' English Writing Feedback and Their Perception of Using ChatGPT (Mun, 2024)	Experimental study	The use of AI tool (ChatGPT) improved the experimental groups' writing skill by reducing grammatical and lexical errors. It is also shown that the participants of the study indicated positive attitude towards its use.
Students' Perception of the AI Technology Application in English Writing Classes (Le, 2023)	Mixed method study	The students showed positive attitude towards AI writing tools for their accessibility, adaptability, and simplicity.	The Use of Artificial Intelligence to Improve EFL Students' Writing Skill (Pratama & Hastuti, 2024)	Mixed Method Study	The implementation of Gencraft and ChatGPT in writing class significantly improved the students' writing skill
Using Artificial Intelligence-based Instruction to Develop EFL Higher Education Students' Essay Writing Skills (Marghany, 2023)	Experimental Study	The use of Grammarly, as an AI-based writing application improved the experimental groups' writing skill compared to the control group.	Investigating the Use of AI Tools to Enhance Learners' Writing Skills in the EFL Classroom (Rabehi & Hadfi, 2024)	Mixed method study	The use of AI tools contributed positively towards the students' writing skill development as they provide assistance when the students faced difficulties in writing as well as become source motivation for
The impact of AI Writing Tools on the content and Organization of Students' Writing: EFL Teachers' perspective (Marzuki, et al, 2023)	Qualitative Study	EFL Teachers perceived that the use of AI writing tools positively improved the students' writing quality, especially in terms of content and organization.			

The Transformative Impact of AI-Powered Tools on Academic Writing: Perspectives of EFL University Students (Selim, 2024)	Mixed Method Study	the students to practice writing. The EFL students showed positive attitude towards the use of AI Tools and saw positive impacts on its use towards their writing quality	Students' Perception of the Impact of AI Chatbots on Vocabulary and Grammar in EFL Writing (Waziana, et al, 2024)	Mixed Method Study	Majority of the participants of the study revealed that the use of AI Chatbots contributed to significant improvement of their writing quality.
Enhancing Academic Writing Skills and Motivation: Assessing the Efficacy of ChatGPT in AI-Assisted Language Learning for EFL Students (Song & Song, 2023)	Mixed method study	The experimental group of the study showed more advanced proficiency in writing, including organization, coherence, grammar, and vocabulary.			
The Transformative Power of AI Writing Technologies: Enhancing EFL Writing Instruction through the Integrative Use of Writerly and Google Docs (Wale & Kassahun, 2024)	Quasi-experimental study	The integration of Writerly and Google Docs significantly improved the EFL writing instruction as proven by the improvement of the experimental groups' writing performance.			

**3.2. Discussion**

**3.2.1. Implementation of Artificial Intelligence Application as Writing Assistant in EFL Classroom**

The development of artificial intelligence (AI) has helped human's life in many ways and many sector, one of which is in the field of EFL teaching and learning. AI is said to have great potential for enhancing language learning and instructions for its ability to provide personalized and adaptive learning experiences, and in writing class, it introduces new approaches and tools that can improve the learners' EFL writing quality (Zakaria & Ningrum, 2023). There are several types of AI tools that can be used in EFL classroom especially to improve students' writing skills, namely ChatGPT, Google Docs, Google Translate, Grammarly, Turnitin, and many others. These tools perform various function and different from one another, for instance, Grammarly is can be used to check grammar and word spelling, and ChatGPT, a chatbot, can be used to provide response for a certain instruction. Based on the review conducted to the seventeen empirical studies above, some AI tools were used in the research. The most common AI tools used as writing assistant based on that research is ChatGPT, followed by Grammarly, Quillbot, and some other tools such as Google Translate and Paraphrasing Tool.

### a. ChatGPT

As stated above, one of the AI tools that has attracted researchers' attention to be integrated into EFL learning is ChatGPT. This AI tool is a chatbot that can respond to instructions given. In relation to English learning, especially in writing classes, ChatGPT can be used by language learners to find ideas, help organize ideas, and ChatGPT can even provide examples of writing on certain topics.

Harunasari (2023) in her research on undergraduate EFL students stated that ChatGPT can be used by students in creative writing. ChatGPT can be a writing assistant by helping EFL students to generate ideas, develop plots and characters. In addition, according to the study, ChatGPT can also be implemented to identify writing errors, improve grammar, as well as to translate, summarize and paraphrase.

Waziana et al., (2024) in their study which aims to investigate the types of chatbots that are often used by undergraduate EFL students in Indonesia found that ChatGPT is one of the most frequently used types of ChatBot in writing English. In addition to ChatGPT, several other chatbots include Gemini, Perplexity, Bing Chat, Ernie, and others. In the study, it was found that ChatGPT can be used to help EFL students in writing, especially in choosing vocabulary and grammar.

In their research, Pratama & Hastuti (2024) implemented the use of ChatGPT and other AI applications, namely GenCraft. In the study, EFL students were asked to describe certain characters in GenCraft which would then generate characters that were described visually. Then, EFL students were asked to write descriptive text based on the visual images generated from GenCraft. After that, ChatGPT can be used by EFL students to help them in writing the descriptive text.

In line with the studies above, experimental research conducted by Song & Song (2023) also stated that ChatGPT can help EFL students in providing feedback on grammar, vocabulary,

sentence structure, organization of ideas, and aspects of coherence of EFL students' writing. The feedback provided can certainly help EFL students in improving and enhancing their writing.

Although ChatGPT can be used as a writing assistant, several studies emphasize the importance of integration and a balanced approach between the use of ChatGPT and traditional instruction while still presenting the role of a tutor or language instructor so that EFL students can gain a comprehensive understanding in learning English as a foreign language (Alzahrani & Alotaibi, 2024; Selim, 2024). This is partly due to concerns about the excessive use of ChatGPT causing overreliance. In addition, excessive use of ChatGPT also raises concerns about the originality of EFL students' writing. In addition, according to research conducted by Rabehi et al., (2024), ChatGPT has several drawbacks, including (1) inaccurate responses, (2) reducing students' critical thinking skills, and (3) lack of interaction.

To overcome this, in addition to continuing to emphasize the involvement of language instructors, Mun (2024) suggests that ChatGPT should be used to provide feedback on EFL students' writing results. In other words, EFL students should be encouraged to produce their original writing first and ChatGPT is used to provide suggestions for improvement. Selim (2024) suggested that in implementing AI, especially ChatGPT in the English learning process, several strategies are needed, including the integration of a comprehensive learning curriculum, organizing ethical writing workshops for EFL students as well as a personalized learning paths. In addition, Harunasari (2023) put forward six strategies that can be implemented by a tutor/language instructor if they want to integrate the use of ChatGPT in writing classes. The six strategies include: (1) determining when ChatGPT should be integrated into the EFL students' writing process, (2) providing clear rules to EFL students about the use of ChatGPT in class, (3) evaluating the results of EFL students' writing

through collaborative learning experiments, (4) checking the ChatGPT chat history of EFL students, (5) motivating critical thinking and creativity, and (6) teaching EFL students to always verify and check the facts of their writing.

### **b. Grammarly**

In addition to ChatGPT, another AI application that is popular with EFL students is Grammarly (Selim, 2024). This AI-powered application is a tool for checking grammar accuracy. Fitria (2021) stated that Grammarly can be used to detect grammar and spelling errors, sentence structure errors, and check for plagiarism.

Marghany (2023) in his research stated that Grammarly provides very valuable feedback on grammatical aspects for EFL learners, including spelling, punctuation, editing, and revision. However, similar to ChatGPT, in its implementation, the role of a tutor or language instructor is very necessary, especially in providing explanations to EFL learners regarding the improvements suggested by Grammarly.

### **c. Other AI Applications for EFL Writing Classroom**

Several other research also revealed the use of other AI applications besides ChatGPT and Grammarly in EFL writing classroom. Amanda et al., (2023) highlighted the use of Quillbot, an AI-powered application that can assist students in writing by giving evaluation on grammar, translation, paraphrasing, summarizing and even citation.

Writerly and Google Docs are also AI-powered applications that can be used as writing assistant in EFL Classroom. As reported by Wale & Kassahun (2024), the integration of the two AI applications has proven effectiveness in improving EFL students' writing skill. Gayed et al., (2022) developed an AI-powered writing assistant named KAKU. This application enables EFL students to

gain words suggestions as well as translate their writing in the mother language into English.

### **3.2.2. Impacts of Using Artificial Intelligence Application as Writing Assistant in EFL Classroom**

#### **a. Positive Impacts on EFL Students' Writing Skill, Perception and Learning Motivation**

As explained above, AI applications can be used by EFL students as writing assistants and the types of AI tools that can be used are also diverse, ranging from Chatbots such as ChatGPT to grammar checkers such as Grammarly. Based on the reviews conducted, most studies found that the use of AI applications or tools in the EFL context, especially in training writing skills, has various positive impacts on EFL students.

The first positive impact is on EFL students' writing skills. Several studies have proven that the use of AI tools or applications can improve EFL students' writing skills. Marghany (2023) and Marzuki et al., (2023) stated that the use of AI applications or tools can improve EFL students' writing skills in terms of grammatical, punctuation, spelling, and word choice. Mun (2024) also reported that in his experimental study, participants in the experimental group showed a significant increase in writing skills compared to the control group after receiving treatment with the use of ChatGPT in the learning process. The improvement in writing skills was found in both structural and linguistic aspects. In line with this study, Pratama & Hastuti (2024) also stated that in their experimental study, an increase in EFL students' writing skills was seen after receiving treatment, namely by implementing the integration of ChatGPT and GenCraft in the descriptive text learning process. Likewise, Waziana et al., (2024) found that there was a significant increase in writing skills after EFL students used AI chatbots as writing assistants in the learning process. This increase occurred in vocabulary range, syntactic variety, and also the quality of their writing in general. Likewise,



Rabehi et al., (2024) stated that ChatGPT provided positive benefits for EFL students, especially in improving the flow of their writing, as well as the organization of content and structure of their writing.

Etaat (2024) emphasized that the increase in EFL students' writing skills that occurred after using AI as a writing assistant was none other than the automatic written corrective feedback (AWCF) obtained by students from AI-based writing tools. The feedback obtained by EFL students can be used as a basis for improvement so that the experimental group in this study experienced an increase in general writing skills, especially in mechanics and lexis, grammar, and content organization. In addition, it was also found that the use of AI can help EFL students to compose writing faster.

Selim (2024) stated that the use of AI as a writing assistant in the EFL context provides benefits for EFL students in terms of improving writing quality, time efficiency, and bolstered academic integrity. In addition, Apriani et al., (2024) also stated that in addition to improving writing skills, the use of AI in the learning process can also foster collaborative learning and self-directed skill development of EFL students.

In addition to the aspect of improving writing skills and writing quality, the use of AI as a writing assistant also received a positive view from EFL students because according to them the use of AI as a writing assistant is interesting, effective, goal-oriented, and supportive (Wale & Kassahun, 2024). Phan, (2023) also found that the use of AI in the EFL learning process, especially in writing, provides excitement and motivation to EFL students because it provides real-time feedback on their writing.

### **b. Negative Impacts on EFL Students**

Despite its positive impacts, the use of AI as a writing assistant also raises concerns in several aspects. Song & Song (2023) raised concerns that the tendency to use ChatGPT frequently, especially in generating text, could dull the writing skills of EFL

students themselves. In addition, it is also feared that using ChatGPT writing without proper review and editing can also result in plagiarism issues. This is in line with what Apriani et al., (2024) said that excessive use of Chatbots, such as ChatGPT, Gemini, and others, can have a negative impact on EFL students' creativity and critical thinking skills as well as plagiarism issues.

In his research, Rabehi et al., (2024) found that EFL students felt several weaknesses in using AI, namely ChatGPT as a writing assistant, including (1) inaccurate responses, (2) decreased critical thinking skills of EFL students, and (3) difficulty for EFL students in understanding ChatGPT responses due to the use of advanced vocabulary, unclear expressions, and lack of interaction.

Phan (2023) and Marzuki et al., (2023) also highlight concerns on the overreliance on AI supporting tools in writing. Phan (2023) states that despite having various sophisticated features, AI still has several weaknesses, such as inaccurate recommendations or feedback. EFL learners who rely too much on AI tools may become too lazy and not try to acquire linguistic knowledge. Marzuki et al., (2023) also said that the use of AI tools as writing assistants can promote over-reliance, where EFL students rely too much on AI tools to revise or provide feedback on their writing results without really understanding the mistakes they make. As a result, the natural learning process of EFL students will be disrupted.

### **c. Implications on Pedagogical Approach**

Nowadays, the use of AI in the process of learning English as a foreign language (EFL) is inevitable. Various types of AI tools or applications have been easily accessible to EFL students. Based on the positive and negative impacts that may be produced, it is important for educational institutions and language instructors to formulate learning process policies that integrate the use of AI in the context of EFL learning. Several studies emphasize

the importance of balanced integration between the use of AI as part of technological developments with conventional approaches or traditional instruction in in the current EFL learning process (Alzahrani & Alotaibi, 2024; Harunasari, 2023; Song & Song, 2023; Wale & Kassahun, 2024). The use of AI as a writing assistant has been proven to improve EFL students' writing skills. Therefore, the integration between the use of AI and conventional approaches to create a comprehensive learning environment in the EFL context will encourage the enhancements of EFL students' writing skills and performance.

#### 4. Conclusion

Various types of AI tools or applications can be used as writing assistants to help EFL students' learning process, especially in honing writing skills. Some types of AI that are often used include Chatbots such as ChatGPT, grammar checkers such as Grammarly, and various other AI-powered tools. The use of AI has been proven to make a significant contribution to EFL students' writing skills both in linguistic and structural aspects. Not only that, the use of AI in EFL classrooms has also been reported to have a positive impact on student motivation and gain positive perceptions from students. However, the use of AI in EFL classrooms also has several disadvantages, especially if used excessively. Excessive use can lead to over-reliance which will ultimately have a negative impact on the EFL students' learning process and raise the issue of plagiarism. Therefore, it is important for educational institutions and EFL language instructors to design a learning process with balanced integration, between the use of AI and conventional approaches in the EFL context, especially in honing EFL students' writing skills.

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