

AI-POWERED WRITING ASSISTANCE IN ENGLISH LANGUAGE LEARNING IN HIGHER EDUCATION: A LITERATURE REVIEW

Tri Jaka Saputra

English Education Program
Faculty of Teacher Training and Education
Universitas Ibn Khaldun, Bogor
jackysaputra1243@gmail.com

ABSTRACT

Tinjauan literatur ini mengeksplorasi peran alat bantu menulis yang didukung oleh AI dalam mendukung pembelajaran bahasa Inggris di pendidikan tinggi. Banyak mahasiswa, terutama yang bukan penutur asli, menghadapi tantangan dalam tata bahasa, kosakata, dan konvensi akademik. Alat bantu seperti ChatGPT, Grammarly, dan Quillbot yang digerakkan oleh pemrosesan bahasa alami dan pembelajaran mesin menawarkan umpan balik otomatis yang meningkatkan kualitas tulisan dan kepercayaan diri pelajar. Ulasan ini mensintesis temuan dari 10 studi empiris yang ditinjau oleh rekan sejawat yang diterbitkan antara tahun 2021 dan 2025. Hasilnya menunjukkan bahwa alat bantu ini diadopsi secara luas dalam konteks universitas dan dikaitkan dengan peningkatan akurasi tata bahasa, organisasi, dan kinerja penulisan secara keseluruhan. Namun, tinjauan tersebut juga mengidentifikasi masalah yang signifikan, termasuk masalah integritas akademik, ketergantungan yang berlebihan pada saran otomatis, dan risiko berkurangnya pemikiran kritis dan orisinalitas. Meskipun alat bantu menulis AI dapat menjadi alat bantu pembelajaran yang berharga, integrasi yang efektif membutuhkan perencanaan pedagogis yang matang, pertimbangan etis, dan dukungan pendidik untuk memastikan bahwa alat bantu tersebut dapat melengkapi, bukan menggantikan, pengembangan menulis yang otentik.

Kata kunci: *Alat Bantu Tulis AI, Penulisan Akademik, Pendidikan Tinggi, Pembelajaran Bahasa, Integritas Akademik.*

ABSTRACT

This literature review explores the role of AI-powered writing assistance tools in supporting English language learning in higher education. Many university students, especially non-native speakers, face challenges in grammar, vocabulary, and academic conventions. Tools such as ChatGPT, Grammarly, and Quillbot—driven by natural language processing and machine learning—offer automated feedback that enhances writing quality and learner confidence. This review synthesizes findings from 10 peer-reviewed empirical studies published between 2021 and 2025. The results reveal that these tools are widely adopted in university contexts and are associated with improved grammatical accuracy, organization, and overall writing performance. However, the review also identifies significant concerns, including academic integrity issues, over-reliance on automated suggestions, and the risk of diminishing critical thinking and originality. While AI writing tools can be valuable learning aids, their effective integration requires thoughtful pedagogical planning, ethical considerations, and educator support to ensure they complement rather than replace authentic writing development.

Keywords: AI Writing Tools, Academic Writing, Higher Education, Language Learning, Academic Integrity.

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has led to significant innovations in education, particularly in the field of language learning (Zulfa et al., 2023). One of the most impactful developments is the emergence of AI-powered writing assistance tools—technologies designed to support learners in enhancing their writing skills through real-time feedback, grammar correction,

stylistic suggestions, and coherence improvements (Kaharuddin, 2021; Khalifa & Albadawy, 2024; Suryanti & Ramadhanti, 2024; Zebua & Katemba, 2024). These tools have gained growing attention in English language learning, especially within higher education, where academic writing proficiency is essential for student success.

English academic writing poses a substantial challenge for many university students,

particularly those who are non-native speakers (Kurniati & Fithriani, 2022). Difficulties in grammar, vocabulary, coherence, and adherence to academic conventions often hinder their ability to communicate effectively (Ali, 2021). While traditional writing support—such as instructor feedback or peer review—plays a valuable role, it is often limited by time constraints, class sizes, and inconsistencies in feedback quality (Banihashem et al., 2024; Youn et al., 2025). As a result, AI-based writing tools are increasingly viewed as scalable and efficient alternatives to complement conventional instruction and address individual learner needs.

AI-powered writing assistance tools leverage technologies such as natural language processing (NLP), machine learning, and large language models to provide automated, personalized feedback on various aspects of writing. Tools like Grammarly, Write & Improve, and more advanced systems such as ChatGPT are being adopted across higher education institutions for both classroom use and independent study (Mahmud, 2023; Mun, 2024; Ngo, 2023; Wang, 2024a; Zhao et al., 2025). Despite their increasing integration, the pedagogical implications and practical challenges of implementing these tools in educational contexts are still not fully understood.

This literature review aims to explore the recent body of research on AI-powered writing tools in English language learning within higher education, focusing specifically on two key areas: (1) What types of AI-powered writing tools are being used in higher education English language learning?; (2) What are the challenges and limitations that have been identified in their implementation?

By addressing these questions, the review seeks to provide a clearer understanding of the current landscape of AI-assisted writing in tertiary education and to highlight areas that require further attention for effective and equitable integration of these tools in English language instruction.

This study adopts a literature review approach to synthesize existing research on the use of AI-powered writing assistance tools in English language learning within higher education. A literature review is a methodical examination and interpretation of academic sources related to a particular topic or research question. It enables researchers to identify patterns, themes, gaps, and emerging trends in the field while building a comprehensive understanding of the current state of knowledge (Mengist et al., 2020). This approach is particularly well-suited for the present study, as it allows for the exploration of various AI tools and their pedagogical implications without conducting primary empirical research. Moreover, by critically engaging with recent literature, this review provides a broad yet focused overview that informs both academic inquiry and practical application.

The selection of the literature review method was driven by the need to map the landscape of AI-powered writing assistance in higher education and to examine both the types of tools in use and the challenges related to their implementation. Given the rapid development and evolving nature of AI technologies in education, a literature review enables the consolidation of up-to-date findings and offers a foundation for future research and classroom innovation.

The primary data for this study consisted of ten peer-reviewed academic papers published between 2021 and 2025. These studies were selected based on their relevance to the research aims and their focus on AI-powered writing assistance in English language learning within higher education contexts. The literature search was conducted using a combination of academic databases, including Google Scholar, ERIC (Education Resources Information Center), and ResearchGate. Keywords used in the search process included combinations of terms such as AI writing tools, artificial intelligence in education, English language learning, higher education, academic writing, and automated feedback.

METHOD

Table 1. Characteristics of the studies

Authors (Year)	Methodology	Findings	
		Advantages	Disadvantages

Marzuki et al. (2023)	Qualitative case study (4 EFL teachers in Indonesian universities interviewed about tools)	Teachers reported that AI tools (e.g. Quillbot, Jenni, ChatGPT) <i>improved students' writing quality</i> , especially content and organization.	No negative impacts reported by teachers; study limited by small sample and reliance on teacher perceptions.
Zhao et al. (2025)	Large-scale survey (Wordtune users) with quantitative analysis and open-ended responses	Users found Wordtune helpful for <i>rephrasing and grammatical improvement</i> (low-level benefits) and for <i>overcoming writer's block and learning</i> (high-level benefits).	Very few drawbacks noted; minor concerns only.
Thangthong et al. (2024)	Qualitative interviews (10 Thai EFL undergraduates)	Students noted <i>improvements in linguistic accuracy, writing confidence, and pragmatic support</i> from AI feedback tools.	Concerns about <i>over-reliance on AI</i> , potential academic misconduct (cheating), and tool limitations in complex cases.
Mun (2024)	Quasi-experimental (43 Korean EFL students: 23 used ChatGPT feedback, 20 control); writing scores and surveys	ChatGPT-assisted group showed <i>higher holistic scores (content/organization) and fewer grammar/lexical errors</i> than control. Students had <i>positive attitudes</i> toward AI feedback.	Some students worried about <i>reliability of ChatGPT suggestions</i> and <i>over-dependence</i> on the tool.
Mahapatra (2024)	Mixed methods intervention (ESL undergraduates; pre/post writing tests and focus groups)	Significant <i>positive impact on writing skills</i> : students' test scores improved with ChatGPT feedback; participants viewed ChatGPT as a <i>reliable feedback tool</i> .	Some students expressed concern that <i>dependence</i> on ChatGPT could undermine their own writing autonomy.
Epe et al. (2024)	Survey (325 Filipino university students) on Grammarly's ease-of-use and usefulness	Students rated Grammarly highly: it <i>enhanced writing quality and efficiency</i> and was very user-friendly.	Minor issues with <i>consistency</i> : some respondents noted occasional mismatches between Grammarly's suggestions and their own expectations.
Wang (2024)	Qualitative (phenomenological study with US L1/L2 first-year writing students using ChatGPT in assignments)	ChatGPT <i>sped up writing and reduced cognitive load</i> (helping with grammar, organization, idea generation); provided <i>instant feedback</i> and increased confidence.	Students reported <i>inaccuracies and generic outputs</i> : ChatGPT often "made up" information or gave superficial ideas, lacked deep reasoning and creativity.
Li & Pei (2024)	Experimental (30 Chinese EFL essays rated by ChatGPT 3.5, ChatGPT4, and teachers under CET-4 rubric)	ChatGPT-4 produced <i>very reliable scores</i> (even more so than teachers) and provided <i>relevant feedback on language, content, and organization</i> , often more so than human raters.	ChatGPT-3.5 showed <i>lower reliability than human teachers</i> in scoring. (Highlights need for updated models.)
Bodaubekov et al. (2024)	Quasi-experimental (senior Kazakh EFL undergrads: Write &	Write & Improve was <i>as effective as traditional teacher feedback</i> in	No clear advantage over human feedback: <i>writing score improvements</i>

	Improve feedback vs. teacher feedback; pre/post-tests)	improving students' writing (no significant differences in scores).	<i>fluctuated</i> and were inconsistent over time.
Silaen & Fitria (2025)	Mixed methods (survey + interviews with 101 Indonesian EMI university students)	Students reported AI assistants helped throughout the writing process (especially <i>pre-writing, drafting, and editing stages</i>).	Main concern was <i>over-reliance on AI</i> : students worried about depending too much on tools for their writing.

RESULT AND DISCUSSION

AI Writing Tools in Higher Education English Learning

The studies reviewed show that many different types of AI-powered writing tools are being used in higher education. One of the most popular tools mentioned is ChatGPT, which is based on a powerful language model called GPT-4. This tool is especially common among university students who are learning English. For example, Tran et al. (2025) found that Vietnamese postgraduate students learning English as a foreign language often use ChatGPT to help with academic writing. Other tools like Grammarly (for checking grammar) and Quillbot (for paraphrasing sentences) are also frequently used.

Similarly, Bimpong et al. (2024) listed several AI tools that students use, including ChatGPT, Tinywow, Jenni.ai, Copy.ai, and Tutor AI. These tools help with different writing tasks, such as checking grammar, generating content, and translating text. Many of them give feedback instantly. For example, they can fix grammar and spelling mistakes, suggest better words or sentence structures, and even help create full paragraphs or outlines. Some tools also support multiple languages, which is helpful for students who are not native English speakers—for instance, by translating words or explaining grammar rules in their native language.

Overall, the research shows that AI writing tools in higher education range from simple grammar and spelling checkers to more advanced tools like chatbots that can write and revise text. All of them are designed to make writing easier and to help students improve their work.

Challenges and Limitation in Implementation

Even though AI-powered writing tools offer many benefits, the studies reviewed also highlight several important challenges and limitations in their use. One of the biggest concerns is academic integrity—in other words, making sure that

students do their own work honestly. Both teachers and students worry that because AI tools can quickly generate text, some students might use them to cheat or copy instead of writing on their own. For example, Shidiq (2023) found that students themselves believed these tools could harm their learning and result in unoriginal work. Other researchers agree: Fitriani & Rachman (2025) warned that students who use tools like ChatGPT without guidance might depend on them too much and stop thinking critically for themselves. Similarly, Malik et al. (2024) found that relying on ChatGPT without checking the output carefully could weaken students' writing skills and lead to plagiarism.

There are also concerns about the quality and reliability of the content generated by AI. Kasneci et al. (2023) found some teachers have noticed that AI tools can make factual mistakes (called "hallucinations") or give biased answers based on limited training data. These issues raise both ethical and teaching-related concerns. Many researchers stress that AI should be used as a support tool, not a replacement for real learning (Chan & Hu, 2023; Liu, 2023; Nguyen et al., 2024; Shafqat & Amjad, 2024). For example, Tran et al. (2025) found that while graduate students learning English as a foreign language benefited from AI tools (for help with ideas, grammar, and structure), they also recognized that these tools have limits and should not be used for everything.

In addition to ethical concerns, there are also practical and technical problems. Some students struggle to use these tools because of login issues, poor internet access, or the high cost of paid versions. For instance, surveys found that students using Grammarly or ChatGPT for class often faced problems like unstable connections or limited free features. Other studies mentioned that AI tools sometimes crash, don't cover all languages, or give responses that are too basic and don't work well for complex writing tasks. Some teachers are also worried that using AI might make students write in

the same way, reducing creativity and variety in language use.

In short, while AI writing tools—ranging from grammar checkers and paraphrasing apps to chat-based models like ChatGPT—are becoming common in higher education, especially for students learning English, their use brings both benefits and risks. These tools can improve grammar, organization, and idea generation. However, successful use depends on using them responsibly—making sure they help students learn, rather than replace the learning process. Ensuring ethical use, maintaining original thinking, and solving technical issues are all important for making AI writing tools work well in educational settings.

DISCUSSION

Types of AI Writing Tools

The research shows that students learning English in higher education are using many different kinds of AI-powered writing tools to help with their writing. Alharbi (2023) groups these tools into four main types:

- *Automated Writing Evaluation (AWE)* systems – These include tools that check grammar and spelling automatically.
- *Corrective feedback tools* – These provide suggestions to fix writing mistakes.
- *Machine translation services* – These help translate text from one language to another.
- *Text generators based on models like GPT-3* – These can create or rewrite content, such as ChatGPT.

These tools range from traditional software like spell checkers to more advanced AI programs that can generate entire paragraphs. Other researchers have also noticed a growing number of AI tools being used in language learning classrooms. These include intelligent tutoring systems and AI feedback tools (Wang, 2024a).

In real classroom settings, students might use a wide variety of tools. Some use built-in grammar checkers in word processors like Microsoft Word or Google Docs. Others prefer stand-alone writing assistants like Grammarly or Criterion (from ETS). Some students also use machine translation tools like Google Translate or AI chatbots like ChatGPT to help them draft, revise, or improve their writing.

In summary, the studies describe a wide range of AI tools being used to support English writing in

higher education—from basic grammar checkers to advanced tools that use large language models. These tools are becoming a regular part of writing instruction for students learning English.

Challenges and Limitations

The research also points out several important challenges in using AI writing tools effectively. From a technical point of view, these tools still have limitations, especially when it comes to improving more complex writing skills. Many studies find that AI tools mostly focus on basic mistakes like grammar or word choice. However, they often fail to help with higher-level writing issues, such as organizing ideas, making arguments, or keeping the writing coherent (Budiyo et al., 2025). For example, some researchers say that even though AI is improving quickly, tools like Automated Writing Evaluation (AWE) still cannot give good feedback on how well a text is structured or how strong the argument is.

This means that many students end up using AI tools just to fix small errors, instead of using them to really improve their writing skills. Ranalli (2021) explains that learners often accept AI suggestions without thinking much, using the tools more as a shortcut than as a way to learn. Other studies also criticize AI feedback for being too general or inaccurate. AI systems cannot fully understand the meaning or purpose of the writing, so the suggestions they offer might be grammatically correct but inappropriate for the situation (Mathew, 2024; Xu & Jumaat, 2024). Sometimes, the suggestions may even be culturally insensitive or not make sense in context.

Another issue is that AI tools are impersonal. Unlike human teachers, they don't give encouragement or motivation, which are important for student learning. As a result, some students might find AI feedback unhelpful or discouraging. There's also a concern that relying too much on AI to write or generate ideas can reduce creativity and critical thinking. If students always follow AI suggestions or let the tool write for them, they might stop developing their own original ideas.

Besides the technical limitations, researchers also identify practical and ethical problems. Many teachers are not yet familiar with AI tools, which creates a knowledge gap between students and instructors. Some students use AI

tools like ChatGPT outside of class without the teacher knowing, which makes it hard for instructors to guide or control how they're used.

Finally, teachers also have different opinions about AI. Some think using AI in writing is like cheating (Abdelaal et al., 2019), while others believe it can be a useful learning aid (Kumar et al., 2019; Kurniati & Fithriani, 2022). This lack of agreement makes it difficult to create clear classroom rules about using AI. There are also concerns about data privacy and equal access—not all students have good internet or personal devices to use these tools.

While AI writing tools can be helpful for fixing grammar and other small errors, they still struggle with more complex writing tasks. At the same time, teacher training, ethical use, clear rules, and fair access are also needed to make these tools truly effective in the classroom

CONCLUSION

The reviewed research shows that AI writing tools are being widely used in university English programs. Some of the most common tools include Grammarly, Hemingway Editor, QuillBot, and ChatGPT. These tools can check grammar and spelling, help rephrase sentences, summarize text, and even generate full paragraphs. Most of them give real-time feedback on vocabulary, grammar, and sometimes writing organization. According to many studies, these tools have helped students improve their writing by making their sentences clearer, correcting errors, and giving suggestions that build confidence. Overall, AI tools seem to help students write with better accuracy and clarity.

However, the studies also point out important problems and risks. One of the biggest concerns is that students may rely too much on AI, using it to fix their work without really learning or thinking for themselves. Some researchers warn that this can weaken students' ability to edit, think critically, or express original ideas. Also, while AI tools are helpful, they are not perfect. They can sometimes give incorrect suggestions, or follow language patterns that are too narrow, which may limit creativity and language variety.

There are also practical challenges in using these tools in the classroom. Teachers may not always have enough knowledge or training to guide students in using AI effectively. Some schools may face issues with access, like limited internet or devices. There are also ethical concerns,

such as how to keep academic integrity and make sure students are still doing their own work. For AI to be useful in learning, these challenges need to be addressed.

In conclusion, AI-powered writing tools have great potential to support English writing in higher education. But to get the most benefit, they need to be used thoughtfully and responsibly. Future research should look at how these tools can be used in a way that supports learning—not just corrects mistakes. For example, newer AI tools could be designed to give more personalized help and encourage students to think more deeply about their writing. Researchers should also test these tools in different types of classes and with different groups of students to see what works best. By continuing to explore and improve how we use AI in writing education, we can make sure it becomes a helpful and ethical part of teaching English in universities..

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