AI-Driven Tools for Academic Writing: Thai EFL Undergraduate Students' Perspectives

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Abstract

Advancing academic English is one of many stumbling blocks, particularly for those studying in their second language. In recent years, AI-inspired technologies have become increasingly accessible to learners across the globe and have transformed learning practices. This paper discusses research conducted on the use of AI tools for vocabulary enhancement, grammatical error correction, sentence and paragraph structure, and the improvement of overall academic writing skills through tools such as ChatGPT, Google Translate, and Grammarly. It also presents responses from Thai EFL undergraduate students using these AI tools to determine whether such resources help improve their academic writing skills. Using a mixed-methods approach, the study combines quantitative data from surveys and qualitative data from in-depth structured interviews. Results reveal that ChatGPT is the most favored tool for AI-based translation and grammar correction among students. In general, students perceive AI tools as helpful for enhancing their writing abilities; however, developing more advanced authorial skills such as citation and paraphrasing remains challenging. Despite the assistance of AI, students still rely on teachers to develop these expert skills. The research indicates that AI should be used as a complement to, rather than a substitute for, traditional writing instruction. It offers suggestions for integrating AI into learning practices and emphasizes the continued value of teacher guidance in developing fundamental academic writing skills.

Keywords: Artificial intelligence (AI), academic writing, Thai EFL undergraduates, students' perspectives

Introduction

In the context of Thai higher education, writing is a component of the EFL curriculum. However, many Thai students encounter difficulties in academic writing. Part of the reason is the lack of opportunities to practice writing, and in many cases, writing is not explicitly taught (Franco & Roach, 2018; Nguyen, 2018). Although the national curriculum has attempted to reinforce writing development at all levels of

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education, research shows that Thai EFL undergraduates still encounter difficulties with organizing ideas, handling sentence structure and syntax (Talasee & Poopatwiboon, 2024), and producing grammatically correct written English (Meniado et al., 2024; Wongkittiporn, 2024). These concerns are not recent; earlier studies frequently reported poor overall writing proficiency, a problem that continues today (Graham & Perin, 2007; Nunan, 1999; Pawapatcharaudom, 2007; Wongsothorn et al., 2002).

Some of the reported difficulties include meeting deadlines, writing academic papers, grammatical inaccuracies, and problems in organization. Academic writing programs aim to address these needs by preparing students for university-level practices such as thesis writing and research report writing. These courses typically focus on academic conventions, register, style, and accurate citation (Bailey, 2003; Gillett et al., 2009; Giridharan, 2012; Sriwichai & Inpin, 2018; Yasuda, 2014). However, students still face challenges such as generating new ideas, organizing thoughts, constructing sentences, paraphrasing, avoiding plagiarism, managing references, and meeting assignment expectations. These difficulties often hinder students from successfully completing university writing tasks (Meniado et al., 2024; Talasee & Poopatwiboon, 2024).

In this context, AI is considered a useful tool for supporting students with academic writing. This paper describes AI-driven writing tools as systems that use machine learning or generative AI to assist with tasks such as translation, grammar and style correction, feedback generation, paraphrasing, idea generation, and referencing. Students often use these technologies independently while completing assignments. Examples include ChatGPT, Google Translate, Grammarly, and AI-supported online dictionaries. Originally described by McCarthy et al. (1955), modern AI technology simulates aspects of human learning by offering immediate and personalized feedback on grammar, vocabulary, content, and structure (Strobl et al., 2019; Thorp, 2023). Evidence of its benefits is generally clustered into three main areas: (a) language accuracy and fluency—studies show that learners who use AI-supported feedback and drafting tools improve their grammar and vocabulary (Jiang, 2022; Meunier et al., 2022); (b) practice volume and accessibility—because these tools are continuously available and low-stakes, they encourage more writing and revision, especially among lower-proficiency learners (Phan, 2023; Roll & Wylie, 2016); and (c) motivation and affect—immediate feedback is associated with reduced anxiety and a greater willingness to experiment with language (Stapleton & Radia, 2010; Yan, 2023).

The results, however, are different when it comes to higher-order outcomes. Research indicates that surface-level features might improve in the short term. However, there are concerns that using AI tools without adequate guidance can lead to superficial processing and excessive dependence, which may not effectively develop skills such as paraphrasing, synthesis, or citation practice (Thorp, 2023). Some teachers consider the use of AI a form of cheating, while others believe that, when used appropriately in teaching and learning, it can support second-language acquisition. A major issue is that students often use AI tools independently, creating a skills-practice

gap between teachers and students. This gap makes collaboration in the classroom more difficult (Alharbi, 2023).

Recent studies in Thailand have begun exploring the use of generative AI by university students in their writing practices. Findings indicate that students report increased confidence and perceived accuracy; however, they also express concerns about plagiarism and reliability (Meniado et al., 2024). This study builds on previous research by examining a broader range of AI-driven writing tools across different platforms, identifying the specific purposes for which these tools are used, and investigating Thai EFL undergraduate students' perspectives on their effectiveness.

This research examines current practices in the Thai EFL context by investigating the AI-driven writing tools used by undergraduate students, the purposes they serve, and students' perspectives on the effectiveness of these tools in improving academic writing skills.

Research Questions

The research questions are as follows:

Research Question 1: What AI-driven writing tools are used in academic writing by Thai EFL undergraduate students, and what purposes do they serve?

Research Question 2: What are the perspectives of Thai EFL undergraduate students toward the use of AI-driven writing tools for improving academic writing?

Literature Review

Artificial Intelligence in Academic Writing

1. AI-driven writing tools

Recently, AI tools have become increasingly used in educational contexts, assisting both students and teachers, particularly in academic writing. Tools such as Grammarly, QuillBot, Wordtune, and ChatGPT provide support in areas such as grammar correction, paraphrasing, vocabulary enhancement, and content generation using NLP (Barrot, 2023; Kasneci et al., 2023; Kohnke, 2023; Raad et al., 2023; Schmidt & Strassner, 2022). These tools provide real-time writing assistance and offer valuable guidance on sentence structure, grammar, and word choice (Ranalli & Yamashita, 2022; Zhao, 2022). Specifically, QuillBot helps users avoid accidentally plagiarizing by identifying text that can be reworded. Wordtune, on the other hand, helps users make their writing sound more natural and personalized (Lam & Moorhouse, 2022). Furthermore, tools such as GPT-3 and GPT-4 extend these capabilities by helping users organize their thoughts and plan entire essays. Mhlanga (2023) discussed how ChatGPT supports university students by helping them formulate project outlines, improve the writing process, and accelerate drafting. However, there are significant concerns associated with plagiarism detection and the potential generation of false or misleading information. Liu et al. (2023) further found

that students who used these AI tools to improve the organization of their projects still required guidance from teachers to cite sources and references correctly.

2. Learner's perspectives

Research has also found that many students use AI tools because they provide instant feedback, help them brainstorm ideas, and support them throughout the drafting process (Kim & Han, 2021; Utami et al., 2023).

In the Thai educational context, Grammarly has gained significant popularity due to its user-friendly interface and precise feedback on grammatical errors. This support helps students to identify and fix grammar mistakes, which can boost their motivation and improve their writing skills (Sumakul et al., 2022; Tambunan et al., 2022). Similarly, ChatGPT has become a common tool for academic tasks. Students can use this technology to organize content effectively, improve linguistic coherence, assist with translation, and engage in collaborative brainstorming (Imran & Almusharraf, 2023; Lund & Wang, 2023; Sallam, 2023). Consequently, Thai learners generally perceive these AI tools as invaluable assets that provide immediate assistance and facilitate a more efficient drafting process (Kim & Han, 2021; Utami et al., 2023).

Nevertheless, the integration of AI tools in education presents notable challenges. A primary concern is that over-reliance on such software may lead to a decline in critical thinking, originality, and self-editing ability (Iskender, 2023; Johinke et al., 2023). Additionally, the digital divide remains a challenge, as disparities in technology access and varying levels of digital literacy can hinder equity in the classroom setting (Mozumder et al., 2023). There are also ethical issues to consider, especially regarding academic integrity and the factual accuracy of AI-generated content. These challenges highlight the importance of providing proper guidance and establishing clear policies for AI use in education (Cassidy, 2023; Salvagno et al., 2023).

3. The underpinning of AI-driven writing tools

Automated written feedback can be highly beneficial for students because it provides clear and immediate suggestions. It helps them identify issues in their writing, make informed stylistic choices, and remain attentive to fundamental aspects such as sentence structures. As a result, students can devote more attention to higher-level concerns, such as developing ideas and understanding key concepts. Large language model (LLM)-based writing tools can also support students in generating ideas and planning their writing when teachers provide clear guidance on how to use them effectively (Yan et al., 2025).

Despite ongoing efforts, Thai EFL learners continue to face long-standing difficulties in academic writing, and research directly addressing how to support Thai students' English writing development remains limited. Although AI writing tools are now widely used in educational settings, there is still a lack of strong empirical evidence regarding their effectiveness and classroom implications in the Thai EFL context. As the adoption of these tools has increased rapidly, it has become increasingly

important to integrate them carefully and purposefully. However, existing studies have rarely focused on Thai undergraduates' perspectives or examined what types of support and guidance accompany their implementation.

Methodology

This study employed a concurrent mixed-methods design combining questionnaires and semi-structured interviews to capture complementary quantitative trends and qualitative explanations (Creswell, 2009; Creswell & Zhang, 2009; Dörnyei, 2007). Participants consisted of 136 fourth-year English-major undergraduates at a university in Thailand, selected from a population of 207 using Taro Yamane's formula and recruited through informed consent (Yamane, 1967).

The questionnaire comprised three parts: (1) general information (demographics, self-assessment of English writing ability, prior experience with AI-driven writing tools, device use, and prior writing grades; (2) utilization of specific AI-driven writing tools in completing course assignments and reasons for use (20 items; 4-point frequency scale: 4 = always to 1 = seldom); and (3) perspectives on efficacy (10 items covering perceived benefits, learner-related factors, and attitudes toward tool use; 4-point agreement scale: 4 = strongly agree to 1 = strongly disagree). A forced-choice format without a midpoint was adopted to reduce central-tendency bias. Items were adapted from recent instruments (e.g., Jeanjaroonsri, 2023; Phan, 2023) and literature on AI-assisted writing in EFL contexts (e.g., Kim & Han, 2021; Pace-Sigge & Sumakul, 2021; Sumakul et al., 2022; Utami et al., 2023). Three experts established content validity using IOC (1/0/−1 ratings), with IOC values ranging from 0.00 to 1.00 (M = 0.89). A pilot involving comparable fourth-year English-major undergraduates yielded Cronbach's $\alpha = .86$, indicating good internal consistency. The questionnaires were also reviewed in both Thai and English by three experts to evaluate linguistic equivalence and identify any clarity-related discrepancies. All identified issues were subsequently addressed, and the translations were revised in accordance with their recommendations.

In the Academic Writing course, students were permitted to use AI-driven writing tools for pre-writing (brainstorming and outlining) and language-level revision (grammar and style); full-text generation was prohibited. Ethical use was also discussed in class. From the survey cohort, six students were selected through stratified random sampling based on previous writing-course grades, gender, and familiarity with AI-driven writing tools. Semi-structured interviews lasting 15–20 minutes explored task-specific use, perceived benefits and limitations, instructor guidance, and desired support. Example prompts included: "How do AI-driven writing tools enhance your English writing?", "What difficulties did you face before using them?", and "Which AI-driven writing tools did your instructor recommend, and for which tasks?"

Data were collected in the final four weeks of the semester, after major course assignments had been completed, to ensure that participants reflected on actual use. Quantitative data were analyzed descriptively. Interview transcripts were examined

using reflexive thematic analysis, following Braun and Clarke's six-phase approach (Braun & Clarke, 2006) and their guidance on quality practice (Braun & Clarke, 2021). The course instructors who taught the Academic Writing class served as coders and used a collaborative reflexive process: they independently coded an initial subset of transcripts, met to discuss and reconcile interpretations, refined the codebook, and then applied the agreed procedures to the full dataset while maintaining an audit trail of analytic decisions (Braun & Clarke, 2006). Ethical approval was granted by the university's Research Ethics Office, and participation was voluntary and anonymized.

Table 1

Summary of Data Analysis

Research question	Research instrument	Data analysis
1. What AI-driven writing assistance tools are utilized by EFL undergraduate students, and what purposes do they serve?	Questionnaire	**Descriptive Analysis** Frequency counts were used to summarize the list of AI-driven writing tools reported in Section 1 of the questionnaire. Mean scores and standard deviations were calculated to describe the purposes of use reported in Section 2. The interpretation criteria for the mean scores were as follows: • 3.25–4.00 = always • 2.50–3.24 = often • 1.75–2.49 = sometimes • 1.00–1.74 = seldom
2. What are the stated perspectives of EFL undergraduate students toward the use of AI applications for writing improvement?	Questionnaire	Mean scores and standard deviations were calculated for the perspectives reported in Part 3 of the questionnaire. The interpretation criteria were as follows: • 3.25–4.00 = strongly agree • 2.50–3.24 = agree, • 1.75–2.49 = disagree • 1.00–1.74 = strongly disagree
	Semi-structured interviews	Qualitative data from the semi-structured interviews were thematically analyzed using the six-step approach proposed by Braun and Clarke (2006).

Results

RQ1: AI Utilization by Thai EFL Undergraduate Students

Table 2
High Usage of AI-Driven Writing Tools by Thai EFL Undergraduates

AI Tools	Percent
ChatGPT	24.6%
Google Translate	21.9%
Oxford Dictionary	17.1%
Grammarly.net	8.5%
Longdo Dictionary	7.2%
QuillBot	6.2%

According to Table 2, the AI-driven writing tools students use most often are ChatGPT (24.6%), Google Translate (21.9%), and the Oxford English Dictionary (17.1%). These preferences suggest that students are drawn to tools that are not only easy to access but also offer a broad range of functions. ChatGPT appears to be the most preferred tool, surpassing Grammarly (8.5%), probably because it supports various tasks such as paraphrasing, translation, and generating ideas, thereby making it more useful overall. Both the Oxford English Dictionary and the Longdo Dictionary (7.2%) were categorized as AI-driven writing tools based on their intelligent search functions, predictive word suggestion, and context-sensitive translation capabilities. QuillBot (6.2%) was employed to a lesser extent, indicating that paraphrasing tools may be less popular among the participants. Since no open-ended question was included, these percentages represent only the predetermined items listed in the questionnaire.

Purposes of the Utilization of AI-Driven Writing Tools by EFL Undergraduate Students

Table 3
The Two Most Prominent Purposes for Grammar Correction

Statement	Mean	SD	Interpretation
The main purpose of using AI-driven writing tools to support my English writing is to find examples of grammar usage.	2.99	0.74	Often
The main purpose of using AI-driven writing tools to support my English writing is to correct grammar mistakes.	3.12	0.68	Often

The data presented in Table 3 indicate that the most common reason students use AI-driven writing tools is to correct grammar mistakes, with a mean score of 3.12. These findings suggest that students rely heavily on automated grammatical feedback to improve the accuracy of their writing. Finding examples of grammar usage (M = 2.99) was identified as a similar but slightly less common purpose. The results further suggest that students use AI as a reference tool to learn and apply grammar rules. Both purposes fell within the "often" range; however, the slight difference in mean scores indicates that students place greater emphasis on correcting mistakes than on exploring grammatical rules.

Table 4

Another Two Prominent Purposes Related to Structure

Statement	Mean	SD	Interpretation
The main purpose of using AI-driven writing tools to support my English writing is to check spelling.	2.96	0.74	Often
The main purpose of using AI-driven writing tools to support my English writing is to enhance sentence structure and clarity.	2.95	0.75	Often

The data in Table 4 suggest that students used AI-driven writing tools to check spelling (M = 2.96) and improve sentence structure and clarity (M = 2.95). These findings show that the students aim to make their writing more coherent and comprehensible. The results also suggest that AI tools are perceived as beneficial for improving both linguistic accuracy and the overall quality of their academic writing.

Table 5

Additional Purposes Related to Vocabulary and Translation

Statement	Mean	SD	Interpretation
The main purpose of using AI-driven writing tools to support my English writing is to find examples of word usage.	2.93	0.75	Often
The main purpose of using AI-driven writing tools to support my English writing is to translate sentences from Thai to English.	2.90	0.76	Often
The main purpose of using AI-driven writing tools to support my English writing is to translate words from Thai to English.	2.85	0.73	Often
The main purpose of using AI-driven writing tools to support my English	2.84	0.73	Often

writing is to translate words from English to Thai.			
The main purpose of AI-driven writing tools to support my English writing is to find example sentences.	2.83	0.75	Often

The data presented in Table 5 suggest that another key purpose of using AI-driven writing tools is vocabulary enhancement, with students commonly using AI to search for vocabulary (M = 2.93) and example sentences (M = 2.83). Translation is another major function of AI use. Students reported using AI-driven writing tools to translate words from Thai to English (M = 2.85) and from English to Thai (M = 2.84). In addition, sentence translation from Thai to English was found to be common, with a mean score of 2.90.

Table 6

Purposes of the Use for Advanced Academic Writing Skills

Statement	Mean	SD	Interpretation
The main purpose of using AI-driven writing tools to support my English writing is to paraphrase text for my writing.	2.82	0.73	Often
The main purpose of using AI-driven writing tools to support my English writing is to summarize text for my writing.	2.81	0.78	Often
The main purpose of using AI-driven writing tools to support my English writing is to adjust the tone and register of my writing.	2.80	0.78	Often
The main purpose of using AI-driven writing tools to support my English writing is to create citations for my writing	2.40	0.90	Sometimes
The main purpose of using AI-driven writing tools to support my English writing is to check for plagiarism.	2.32	0.96	Sometimes

The data presented in Table 6 suggest that Thai EFL undergraduate students in this study most frequently use AI-driven writing tools for text manipulation tasks, particularly paraphrasing (M = 2.82), summarizing (M = 2.81), and adjusting tone and register (M = 2.80). These closely clustered mean scores suggest a consistent pattern of reliance on AI to refine and enhance the stylistic and structural quality of academic writing. In contrast, students reported using AI less frequently for creating citations (M = 2.40) and checking for plagiarism (M = 2.32), both of which fall into the “sometimes” category. These findings suggest that students demonstrate a stronger tendency toward improving their language skills than toward using AI tools associated with academic integrity functions.

RQ2. Thai EFL Undergraduate Students' Perspectives on Using AI-Driven Writing Tools to Improve Their writing Skills

Table 7
Leading Perspectives of Thai EFL Undergraduates on Using AI-Driven Writing Tools

Statement	Mean	SD	Interpretation
AI-driven writing tools are easily accessible.	3.59	0.49	Strongly agree
AI-driven writing tools provide a variety of features.	3.45	0.49	Strongly agree

Table 7 reveals that Thai EFL undergraduates strongly agreed that AI-driven writing tools are easily accessible (M = 3.59), suggesting that students find these tools convenient and readily available when needed. Students also recognized that these tools provide a wide range of useful features to support academic writing (M = 3.45). Overall, the results indicate that students view AI-driven writing tools as flexible and supportive resources for completing writing tasks.

Table 8
EFL Undergraduate Students' Perspectives on Using AI-driven Writing Tools

Statement	Mean	SD	Interpretation
AI-driven writing tools have the ability to improve both my vocabulary and grammar skills.	3.33	0.58	Strongly agree
AI-driven writing tools enhance my writing skills.	3.29	0.51	Strongly agree
AI-driven writing tools assist me in achieving my learning objectives.	3.29	0.57	Strongly agree
AI-driven writing tools enhance the quality of my writing.	3.28	0.55	Strongly agree

The data presented in Table 8 suggest that most undergraduates agreed that AI-driven writing tools help improve their writing abilities. The mean score of 3.29 indicates that students generally perceived these tools as supportive of both learning and writing development. This result suggests that students consider AI useful not only for academic writing tasks but also for language learning. Students also strongly agreed that AI-driven writing tools help improve their vocabulary and grammar skills (M = 3.33), indicating that they recognize the role of AI in supporting vocabulary acquisition and grammatical accuracy. In addition, students expressed positive views regarding the overall improvement in the quality of their English writing (M = 3.28), indicating that these tools help them refine and polish their written work.

Table 9
Thai EFL Undergraduates' Views on Using AI-Driven Writing Tools

Statement	Mean	SD	Interpretation
AI-driven writing tools can adapt based on instructions.	3.30	0.52	Strongly agree
AI-driven writing tools offer a user-friendly interface.	3.24	0.56	Agree
AI-driven writing tools improve my ability to organize ideas effectively in writing.	3.19	0.57	Agree
AI-driven writing tools increase my writing engagement.	3.17	0.61	Agree

Table 9 indicates that the participants strongly agreed that AI-driven writing tools are able to adapt to students' needs (M = 3.30). This finding suggests that EFL undergraduates appreciate how these tools can respond to different writing goals. Students also agreed that these tools are user-friendly (M = 3.24), highlighting the importance of accessibility and ease of use. Furthermore, students reported that AI-driven writing tools help them organize their ideas more effectively (M = 3.19) and increase their engagement during writing tasks (M = 3.17).

Qualitative Findings Addressing RQ2: Students' Perspectives and Instructional Support

Based on six semi-structured interviews and a reflexive thematic analysis, three major themes emerged regarding how teachers perceive the role of AI-driven writing tools in supporting Thai EFL undergraduates' academic writing. These themes reflect varying levels of instructional support, ranging from minimal guidance to more active facilitation.

Theme 1: Exploratory Use with Ethical Guardrails

Teachers encourage students to explore AI-driven writing tools independently, most commonly tools such as ChatGPT, while also establishing clear boundaries regarding plagiarism and emphasizing the importance of referencing and disclosure.

> *"My instructor doesn't exactly tell us to use AI tools, but he doesn't suggest giving things like ChatGPT a try. He says it can make learning more fun and useful. But he also reminds us not to just copy stuff. We are supposed to use it in a way that actually helps us to learn.*
> — Interview with Student 1 (translated from Thai)

Theme 2: Task-Aligned, Tool-Specific Guidance

Some instructors provide task-specific advice related to particular stages of the writing process, such as using Grammarly for grammar and style checking, ChatGPT for brainstorming or stylistic evaluation, and Akkarwisut for paraphrasing and plagiarism detection. Instructions also advised students to evaluate AI-generated

content against assignment rubrics. Students reported that this guidance helped them select and use tools more effectively.

> *"My teacher has suggested a bunch of AI-driven writing tools that would help people during the writing phase. For instance, ChatGPT can be used to detect whether an AI-generated writing is consistent with our personal style; Grammarly can help verify a grammatical aspect of the paragraph, while the Akakrwisut program does both plagiarism and paraphrasing quality detection."*
>
> — Interview with Student 2 (translated from Thai)

Theme 3: General Suggestions with Limited Follow-Up

Most students reported receiving only general recommendations to use tools such as ChatGPT or Grammarly, without detailed instructions or follow-up guidance. Even fewer students mentioned receiving guidance regarding tools such as QuillBot or Gemini. Because of this, students often underused these tools or used them inconsistently.

> *"My teacher told us to try Grammarly and ChatGPT, but she didn't say which tools are best for which tasks.*"
>
> — Interview with Student 3 (translated from Thai)

Across all interviews, students' perspectives of the usefulness and ethical use of AI-driven writing tools appeared to be closely related to the level of instructional support they received. Students seemed to feel more confident when they were given some flexibility within clear boundaries; however, the extent of their learning varied. Students were generally able to use AI-generated information more appropriately when they received sufficient guidance related to specific assignments. Ongoing instructional support appeared to be the most effective approach for helping students develop responsible and advanced writing skills.

Thematic Findings of Learning Needs from Instructors

This study presents the views and learning needs of Thai EFL undergraduate seniors regarding AI-assisted learning in an academic writing course. Findings from six semi-structured interviews reflected students' expectations of teachers, specifically in relation to AI-driven writing tools. Six major themes emerged concerning the knowledge and support students wished to receive.

Students Aim to Develop Academic Writing Skills

Students expressed a strong need to develop academic writing skills, particularly citation, paraphrasing, summarizing, and organization, in order to succeed academically and work more independently in their coursework.

Students Seek Deeper Writing Skills Beyond Surface-Level AI-Driven Writing Tools

Participants stated that although they use AI-driven writing tools to save time, they value the critical thinking and learning processes involved in writing, rather than relying solely on technology.

Students Acknowledge the Ethical Importance of Learning Citations in the Age of Artificial Intelligence

Students in this study expressed concerns about using sources correctly and therefore requested additional instruction on avoiding plagiarism and learning proper citation practices.

Students Seek Instructional Support to Improve Essential Academic Writing Skills

Participants stated that clearer and more structured instruction on advanced academic writing skills, especially summarization, would help them apply these skills more effectively in their academic work.

Students Recognize the Complexity of Academic Writing

Students agreed that academic writing differs from other forms of writing and acknowledged the need for guidance from their lecturers to better understand academic conventions, tone, and structure.

Students Aim to Overcome Specific Weaknesses Through Both AI-Driven Writing Tools and Instructor Support

The Thai undergraduate students in this study preferred a combination of AI-driven writing tools and instructor feedback, especially for improving language-related skills such as paraphrasing.

Furthermore, Thai EFL undergraduate students recognized several challenges in their own academic writing, especially in advanced academic writing skills such as paraphrasing. Rather than relying solely on AI-driven writing tools, students preferred combining AI assistance with instructor feedback to support their learning. Interviews revealed four main areas where students wished to improve after using AI-driven writing tools in their academic writing.

Paraphrasing Skills

Results from the interview showed that students were particularly concerned about paraphrasing. Two students stated that they needed support from instructors to learn how to rewrite text appropriately without unintentionally copying the original source. Although AI-driven writing tools were considered helpful for paraphrasing, students emphasized that teacher support remained essential for learning how to paraphrase effectively.

"For me, I still want to learn more about paraphrasing. I mean, sure, AI can do it for us really easily now, and most of the time we just let it do everything without thinking much about how the process actually works."
— Interview with Student 2 (translated from Thai)

"I really want to get better at paraphrasing skill because I think it's the area I struggle with the most. I plan to use AI tools to help me along the way, but I would also like my teacher to spend more time teaching all paraphrasing techniques so I can improve faster."
— Interview with Student 6 (translated from Thai)

Citation and Referencing

Two respondents mentioned that they found referencing and citation practices challenging in academic writing. Although AI-driven writing tools could automatically generate citations, the students remained uncertain about how to use them correctly and therefore required additional guidance from their instructors.

"I want to learn more about citations and writing techniques in order to get better at academic writing skills on my own."
— Interview with Student 1 (translated from Thai)

"I know that referencing in academic can be hard and confusing. There are rules and legal things that I have to pay attention to. I want to learn more from my teacher about how to make a proper referencing and how to cite because I'm still not really sure how to use them the right way in my own academic writing. With AI now able to create citations for us, it's even more important to fully understand how to use them correctly and responsibly."
— Interview with Student 3 (translated from Thai)

Summarization

One student expressed a strong desire to improve their summarization skills, especially when working on research papers or literature reviews, where clarity and conciseness are essential.

"When I summarize, I find it especially difficult for me because it's hard to take information from several dozens of pages and turn it into a few short paragraphs. I would really like it if my teacher spends more time teaching clear and practical techniques to help with summarizing."
— Interview with Student 4 (translated from Thai)

Organization

Another student discussed difficulties related to organizing academic writing, such as arranging ideas logically and creating clear connections between paragraphs.

Although AI-assisted tools helped with revising, the student felt that these tools did not adequately teach how to develop effective structure and coherence.

> *"I want to learn more about how to organize my academic tasks and other techniques used in academic writing, because I find them harder and more complicated than other types of English writing."*
> — Interview with Student 5 (translated from Thai)

Discussion

This study examined the utilization of AI-driven writing tools among Thai EFL undergraduate students, focusing on the tools used, their purposes, and the students' perspectives on how these tools influenced writing improvement. The findings show that AI-driven tools support students' academic writing skills.

Research Question 1: Which AI-driven writing tools did undergraduates utilize, and for what purposes?

The results indicate that Thai EFL undergraduate students used a limited range of AI-driven writing tools, with ChatGPT (24.6%), Google Translate (21.9%), and AI-integrated dictionaries (e.g., the Online Oxford Dictionary; 17.1%) being the most frequently used, while Grammarly accounted for 8.5% of all entries. However, students did not appear to use AI tools randomly; rather, they selected each tool according to the stage of the writing process and the specific task involved. For example, undergraduate students used ChatGPT to brainstorm ideas, outline content, revise sentences, check coherence and flow, and write short summaries. Grammarly was typically used to improve grammar and clarity. AI-powered dictionaries supported vocabulary selection and word usage. Furthermore, students commonly used Google Translate to produce initial drafts that they would subsequently revise. Other AI-driven writing tools, such as QuillBot, Gemini, and Akkarwisut, appeared to be used less frequently.

In addition, the results indicate a clear correlation between the tools students selected and the purposes they intended them to serve. The most popular AI-driven writing tools were favored because they were user-friendly, easily accessible, and equipped with useful features such as grammar, spelling, and sentence-structure correction. On the other hand, undergraduate students may have avoided premium tools or tools with more complex functions because they were expensive or difficult to use.

Therefore, it is worth noting that students rarely relied on a single tool. Instead, they often combined multiple tools to create a writing workflow that supported planning, drafting, revising, and checking their final academic work.

Research Question 2: What are students' perspectives on writing improvement?

Students generally viewed AI-driven writing tools positively. Many stated that these tools made writing easier and more efficient and helped improve the quality of their work. Some reported that AI tools saved time on assignments, reducing workload, and increased their confidence. They often connected these benefits to the academic writing skills they aimed to develop. Vocabulary development appeared to be the area in which students benefited most. During editing, students used ChatGPT to paraphrase and rewrite longer sections, especially in literature reviews. They stated that the tool helped them write more clearly, avoid repetition, and present sources in a more academic manner.

Citation tools, including citation generators and similarity checkers, were also popular and gave students confidence that their references were acceptable and that their writing was free from major issues. However, some noticed issues such as incorrect citation details and unusual similarity reports, which made them more cautious when handling complex tasks. Students also recognized that using AI does not always lead to genuine learning. A few admitted that they accepted AI suggestions too quickly, especially when they were tired or rushing to complete assignments. This raised concerns about patchwriting, over-reliance on AI for grammar correction, and limited engagement with source materials.

The presence and influence of the teacher were important factors in how students used these AI tools. When teachers provided concrete, task-oriented guidance, for example, encouraging students to use ChatGPT for idea generation or Grammarly for refining sentences, students used the tools more effectively and understood their limitations. In contrast, when guidance was ambiguous, such as simply telling students to "try ChatGPT or Grammarly," students' use of the tools tended to be less intentional, and they sometimes relied on them for surface-level editing rather than developing deeper academic writing skills.

Implications for Academic Writing Pedagogy

These findings have several implications for classroom practice. Teachers can support better writing development by introducing a clear and structured workflow from the beginning of the course. Rather than allowing students to use tools randomly and accept suggestions uncritically, teachers can recommend specific tools for different stages of the writing process. Teachers can also play an active role in helping students expand their vocabulary. When students use online dictionaries or translation tools, they should not focus only on definitions. Teachers may also ask them to record the part of speech, synonyms, common collocations, and example sentences. Repeated practice of this kind may help students develop deeper vocabulary knowledge over time.

Paraphrasing and summarizing should also be taught as process-based skills rather than simple word substitution. This is particularly important during drafting.

Teachers can guide students by asking reflective questions such as: "What information did you keep?", "What did you remove?", and "Why?" Such prompts promote mindful decision-making and may help reduce patchwriting.

Finally, citation tools and similarity reports can be used as learning tools rather than solely as mechanisms for punishment. Teachers can conduct spot checks with students and ask them to reflect on the results, while reminding them that AI tools do not guarantee accuracy. Discussing grammar errors, unsupported claims, and citation problems can help reduce over-reliance on AI tools, improve critical thinking, and ensure that student work remains consistent with institutional policies regarding academic integrity and responsible AI use.

Conclusion

This study demonstrates that fourth-year Thai EFL undergraduates actively use AI-driven writing tools to support their academic writing tasks. These tools assist students with planning, language improvement, and even locating sources. Students appear to be developing structured workflows that align with their writing needs. They also seem aware of what these tools can offer and are interested in improving their writing skills alongside them. However, it remains important to ensure that speed and efficiency do not come at the expense of grammatical accuracy, critical evaluation of sources, or effective paraphrasing skills.

Although technology continues to advance rapidly, teachers remain central to students' learning. AI tools can help students build knowledge and support their writing processes, but students still need teachers to guide them throughout their learning journey, including planning, drafting, revising, and proofreading. Short in-class writing exercises that focus on paraphrasing, summarizing, citation practice, and text organization should also be incorporated into writing courses. Furthermore, teachers and peers can provide feedback on these assignments so that students can learn from one another's work. Writing courses should also promote AI literacy by teaching students how to verify AI-generated content and ensure that their practices align with university policies regarding AI use and plagiarism. Additionally, students should receive instructions on the main tasks they perform with AI tools, along with support in overcoming access or usability challenges. Ultimately, teachers can help students learn how to use AI-driven writing tools wisely and responsively within an AI-supported learning environment.

Recommendations

This study offers several recommendations for future research and course development. Future researchers could collect usage logs and reflective journals to examine how students' use of AI-driven writing tools develops over time. Moreover, future studies should consider recruiting larger and more diverse groups and comparing different forms of instructional support, such as general advice versus task-specific

guidance, to examine which approaches are most effective in helping learners develop advanced academic writing skills.

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References

Alharbi, W. (2023). AI in the foreign language classroom: A pedagogical overview of automated writing assistance tools. *Education Research International*, *2023*(1), Article 4253331. https://doi.org/10.1155/2023/4253331

Bailey, S. (2003). *Academic writing: A practical guide for students*. Routledge. https://doi.org/10.4324/9780203464120

Barrot, J. S. (2023). Using ChatGPT for second language writing: Pitfalls and potentials. *Assessing & Writing, 57*, Article 100745. https://doi.org/10.1016/j.asw.2023.100745

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, *18*(3), 328–352. https://doi.org/10.1080/14780887.2020.1769238

Cassidy, C. (2023, January 10). Australian universities to return to 'pen and paper' exams after students caught using AI to write essays. *The Guardian*. https://www.theguardian.com/australia-news/2023/jan/10/universities-to-return-to-pen-and-paper-exams-after-students-caught-using-ai-to-write-essays

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approach* (3rd ed.). Sage Publications.

Creswell, J. W., & Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of Traumatic Stress*, *22*(6), 612–621. https://doi.org/10.1002/jts.20479

Dörnyei, Z. (2007). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies.* Oxford University Press.

Franco, A., & Roach, S. S. (2018). An assessment of the English proficiency of the Thai workforce and its implication for the ASEAN economic community: An empirical enquiry. *Open Journal of Business and Management*, *6*, 658–677. https://doi.org/10.4236/ojbm.2018.63050

Gillett, A., Hammond, A., & Martala, M. (2009). *Inside track: Successful academic writing.* Pearson Education.

Giridharan, B. (2012). Identifying gaps in academic writing of ESL students. *US-China Education Review*, *6*, 578–587.

Graham, S., & Perin, D. (2007). A meta-analysis of writing instruction for adolescent students. *Journal of Educational Psychology*, *99*(3), 445–476. https://doi.org/10.1037/0022-0663.99.3.445

Imran, M., & Almusharraf, N. (2023). Analyzing the role of ChatGPT as a writing assistant at higher education level: A systematic review of the literature. *Contemporary Educational Technology*, *15*(4), Article ep464. https://doi.org/10.30935/cedtech/13605

Iskender, A. (2023). Holy or unholy? Interview with OpenAI's ChatGPT. *European Journal of Tourism Research*, *34*, Article 3414. https://doi.org/10.54055/ejtr.v34i.3169

Jeanjaroonsri, R. (2023). Thai EFL learners' use and perceptions of mobile technologies for writing. *LEARN Journal: Language Education and Acquisition Research Network*, *16*(1), 169–193. https://so04.tci-thaijo.org/index.php/LEARN/article/view/263438

Jiang, R. (2022). How does artificial intelligence empower EFL teaching and learning nowadays? A review on artificial intelligence in the EFL context. *Frontiers in Psychology, 13,* Article 1049401. https://doi.org/10.3389/fpsyg.2022.1049401

Johinke, R., Cummings, R., & DiLauro, F. (2023). Reclaiming the technology of higher education for teaching digital writing in a post-pandemic world. *Journal of University Teaching & Learning Practice*, *20*(2), Article 01. https://doi.org/10.53761/1.20.02.01

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F.,

Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., . . . Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, *103*, 102274. https://doi.org/10.1016/j.lindif.2023.102274

Kim, H., & Han, S. (2021). College students' perceptions of AI-based writing learning tools: With a focus on Google Translate, Naver Papago, and Grammarly. *Modern English Education*, *22*(4), 90–100. https://doi.org/10.18095/meeso.2021.22.4.90

Kohnke, L. (2023). L2 learners' perceptions of a chatbot as a potential independent language learning tool. *International Journal of Mobile Learning and Organisation*, *17*, 214–226. https://doi.org/10.1504/IJMLO.2023.128339

Lam, R., & Moorhouse, B. L. (2022). *Using digital portfolios to develop students' writing: A practical guide for language teachers.* Taylor & Francis. https://doi.org/10.4324/9781003295860

Liu, M., Ren, Y., Nyagoga, L. M., Stonier, F., Wu, Z., & Yu, L. (2023). Future of education in the era of generative artificial intelligence: Consensus among Chinese scholars on applications of ChatGPT in schools. *Future in Educational Research*, *1*(1), 72–101. https://doi.org/10.1002/fer3.10

Lund, B. D., & Wang, T. (2023). Chatting about ChatGPT: How may AI and GPT impact academia and libraries? *Library Hi Tech News*, Article 4333415. http://dx.doi.org/10.2139/ssrn.4333415

McCarthy, J., Minsky, M. L., Rochester, N., & Shannon, C. E. (1955). *A proposal for the Dartmouth summer research project on artificial intelligence* [Unpublished manuscript]. http://jmc.stanford.edu/articles/dartmouth/dartmouth.pdf

Meniado, J. C., Huyen, D. T. T., Panyadilokpong, N., & Lertkomolwit, P. (2024). Using ChatGPT for second language writing: Experiences and perceptions of EFL learners in Thailand and Vietnam. *Computers and Education Artificial Intelligence*, *7*, Article 100313. https://doi.org/10.1016/j.caeai.2024.100313

Meunier, F., Pikhart, M., & Klimova, B. (2022). New perspectives of L2 acquisition related to human-computer interaction (HCI). *Frontiers in Psychology*, *13*, Article 1098208. https://doi.org/10.3389/fpsyg.2022.1098208

Mhlanga, D. (2023). *Open AI in education: The responsible and ethical use of ChatGPT towards lifelong learning*. SSRN. https://doi.org/10.2139/ssrn.4354422

Mozumder, M. A. I., Athar, A., Armand, T. P. T., Sheeraz, M. M., Uddin, S. M. I., &

Kim, H. C. (2023). Technological roadmap of the future trend of metaverse based on IoT, blockchain, and AI techniques in metaverse education. In *2023 25th International Conference on Advanced Communication Technology (ICACT)* (pp. 1414–1423). IEEE. https://doi.org/10.23919/ICACT56868.2023.10079464

Nguyen, T. T. L. (2018). Reflections on modified genre-based instructions to teach essay writing to Thai university students. *Asian EFL Journal*, *20*(9.1), 148–174.

Nunan, D. (1999). *Second language teaching and learning.* Heinle & Heinle Publishers.

Pace-Sigge, M., & Sumakul, D. T. (2021). What teaching an algorithm teaches when teaching students how to write academic texts. *Manuscript submitted for publication.*

Pawapatcharaudom, R. (2007). *An investigation of Thai students' English language problems and their learning strategies in the International Program at Mahidol University [Unpublished master's thesis].* King Mongkut's Institute of Technology.

Phan, T. N. L. (2023). Students' perceptions of the AI technology application in English writing classes. *Proceedings of the AsiaCALL International Conference*, *4*, 45–62. https://doi.org/10.54855/paic.2344

Raad, B., Anjum, F., & Ghafar, Z. (2023). Exploring the profound impact of artificial intelligence applications (Quillbot, Grammarly, and ChatGPT) on English academic writing: A systematic review. *International Journal of Innovation and Research*, *1*(10), 599–622. https://doi.org/10.59890/ijir.v1i10.366

Ranalli, J., & Yamashita, T. (2022). Automated written corrective feedback: Error correction performance and timing of delivery. *Language Learning & Technology*, *26*(1), 1–25. http://hdl.handle.net/10125/73465

Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education*, *26*, 582–599. https://doi.org/10.1007/s40593-016-0110-3

Sallam, M. (2023). ChatGPT utility in healthcare education, research, and practice: Systematic review on the promising perspectives and valid concerns. *Healthcare*, *11*(6), 887. https://doi.org/10.3390/healthcare11060887

Salvagno, M., Taccone, F. S., & Gerli, A. G. (2023). Can artificial intelligence help with scientific writing? *Critical Care*, *27*(1), 1–5. https://doi.org/10.1186/s13054-023-04380-2

Schmidt, T., & Strassner, T. (2022). Artificial intelligence in foreign language learning and teaching. *Anglistik*, *33*(1), 165–184. https://doi.org/10.33675/ANGL/2022/1/14

Sriwichai, C., & Inpin, B. (2018). A development of the writing instructional model based on blended and self-directed learning to promote EFL university students' writing ability and self-directed learning. *ASEAN Journal of Education*, *4*(1), 121–140.

Stapleton, P., & Radia, P. (2010). Tech-era L2 writing: Towards a new kind of process. *ELT Journal*, *64*(2), 175–183. https://doi.org/10.1093/elt/ccp038

Strobl, C., Ailhaud, E., Benetos, K., Devitt, A., Kruse, O., Proske, A., & Rapp, C. (2019). Digital support for academic writing: A review of technologies and pedagogies. *Computers & Education*, *131*, 33–48. https://doi.org/10.1016/j.compedu.2018.12.005

Sumakul, D. T. Y. G., Hamied, F. A., & Sukyadi, D. (2022). Artificial intelligence in EFL classrooms: Friend or foe?. *LEARN Journal: Language Education and Acquisition Research Network*, *15*(1), 232–256. https://so04.tci-thaijo.org/index.php/LEARN/article/view/256723

Talasee, K., & Poopatwiboon, S. (2024). Second language writing anxiety of Thai EFL undergraduate students: Dominant causes, levels and coping strategies. *Journal of Education and Learning*, *14*(1), 235–248. https://doi.org/10.5539/jel.v14n1p235

Tambunan, A. R. S., Andayani, W., Sari, W. S., & Lubis, F. K. (2022). Investigating EFL students' linguistic problems using Grammarly as automated writing evaluation feedback. *Indonesian Journal of Applied Linguistics*, *12*(1), 16–27. https://doi.org/10.17509/ijal.v12i1.46428

Thorp, H. H. (2023). ChatGPT is fun, but not an author. *Science*, *379*(6630), 313. https://doi.org/10.1126/science.adg7879

Utami, S. P. T., Andayani, A., Winarni, R., & Sumarwati, S. (2023). Utilization of artificial intelligence technology in an academic writing class: How do Indonesian students perceive? *Contemporary Educational Technology*, *15*(4), ep450. https://doi.org/10.30935/cedtech/13419

Wongkittiporn, A. (2024). Syntactic interpretations of raised determiner phrases in the passive voice: Perspectives of applied linguistics research articles and travel guidebooks. *Language and Linguistics*, *42*(1), 63–88. https://so04.tci-thaijo.org/index.php/joling/article/view/264396

Wongsothorn, A., Hiranburana, K., & Chinnawongs, S. (2002). English language teaching in Thailand today. *Asia-Pacific Journal of Education*, *22*(2), 107–116. https://doi.org/10.1080/0218879020220210

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper & Row.

Yan, D. (2023). Impact of ChatGPT on learners in an L2 writing practicum: An exploratory investigation. *Educational and Information Technology*, *28*, 13943–13967. https://doi.org/10.1007/s10639-023-11742-4

Yan, Y. M., Chen, C. Q., Hu, Y. B., & Ye, X. D. (2025). LLM-based collaborative programming: Impact on students' computational thinking and self-efficacy. *Humanities and Social Sciences Communications*, *12*(1), Article 149. https://doi.org/10.1057/s41599-025-04471-1

Yasuda, S. (2014). Issues in teaching and learning EFL writing in East Asian contexts: The case of Japan. *Asian EFL Journal*, *16*(4), 150–187.

Zhao, X. (2022). Leveraging artificial intelligence (AI) technology for English writing: Introducing Wordtune as a digital writing assistant for EFL writers. *RELC Journal*, *54*(3), 890–894. https://doi.org/10.1177/00336882221094089