



SCAFFOLDING ACADEMIC WRITING FOR EFL LEARNERS THROUGH AI TOOLS: A MIXED METHOD STUDY

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Abstract

The integration of AI tools in academic environments has drawn considerable interest from researchers and educators globally. This study examines the effectiveness of AI tools and their practical applications in English as a Foreign Language (EFL) academic writing. A sequential mixed-methods design is used to investigate AI use in EFL writing through thematic analysis, interviews and survey data. Qualitative thematic analysis, following Braun and Clarke's (2006) framework, is applied to five contemporary research articles (2023-2024) sourced from reputable databases, and key themes are identified. Subsequently, a survey administered to captures EFL students' perspectives on AI in academic writing. Adding to the depth of the analysis EFL teachers interviews are conducted. Braun and Clarke's six-phase Thematic Analysis framework is followed: data familiarization, initial coding, theme identification, theme review, theme definition and naming, and report production. (Braun et al., 2006) This study discusses the role of AI applications by presenting insights from EFL educators and students. Analysis indicates that AI tools substantially enhance EFL students' writing skills, although some limitations and ethical concerns arise when implementing AI for academic writing. (Mahapatra & Santosh, 2024) Four main themes emerge: Enhancement of Writing Skills, Support for Writing Processes, Fostering Autonomy and Motivation, and Ethical and Functional Challenges. Each category includes three sub-themes. This study underscores the value of AI tools in developing EFL writers' skills while emphasizing the need for balanced use. As a qualitative investigation, future research may prioritize more practical approaches.

Keywords: Academic Writing, EFL Learners, Artificial Intelligent Tools, Thematic Analysis

Introduction

Academic writing is a core academic survival skill for EFL learners; the purpose of academic writing is to present the results of the conducted research within a specific domain. It requires scholars' linguistic ability to express critical thoughts and ideas and to engage with scholarly discourse, which involves well-structured, coherent, and grammatically accurate academic texts. (Sari et al., 2025)

Despite its significance, university students and scholars face difficulty in formatting their research findings in an effective academic style. This happens because of inadequate feedback, the availability of limited resources, and a lack of self learning skills. Such challenges are explored in the increasingly globalized world of digital education, where technology-integrated language learning tools offer various options to assist with such academic difficulties. (Sari et al., 2025)

Artificial Intelligence (AI)-powered writing tools, such as Grammarly, QuillBot, and ChatGPT, are being widely used in academic contexts. These tools help EFL students by providing multiple features for grammar checking, maintaining cohesion, paraphrasing, style recommendations, and also with the critical thinking and idea generation process (Malon et al., 2024). No doubt these tools are helpful in improving the students' academic writing efficiency, but recent studies on these tools report various concerns like accuracy, credibility, and overreliance that lead to serious threats to academic integrity.

Existing studies have explored the potential of AI-integrated tools in enhancing the students' writing EFL context. According to Shahriar and Laboni (2023), Grammarly improves writing and grammar accuracy. Similarly, Serajand Oteir (2022, pp. 14–16) proposed that "AI-based instruction develops students' trust, self-confidence, and critical thinking." Kurniati and

Fithriani (2022) discovered that QuillBoten improves postgraduate English students' academic writing. According to Shahriar and Laboni (2023), Google Translate aided in learning vocabulary, sentence structures, and spelling, among other things.

Limited studies combine these tools (Quillbot, Grammarly, Turnitin, and ChatGPT) to investigate the perceptions of the stakeholders with the existing studies on AI-integrated tools in EFL contexts. This study focuses on analysing the perceptions of teachers and students regarding the use of AI-integrated tools to enhance EFL academic writing, combined with the thematic analysis of contemporary research studies on similar tools.

Research Objectives

1. To analyze contemporary literature through thematic analysis to identify key trends, benefits, and challenges of using AI tools in EFL academic writing.
2. To explore students and teachers' perceptions regarding AI-assisted writing among EFL learners.

Research Question.

1. What themes emerge from existing literature about AI-assisted academic writing?
2. What are students' and teachers' perceptions of AI tools?

Literature Review

Academic writing is the type of writing which is formal and adhere to strict rules, it is the skill to discover, produce, publish and disseminate scholarly knowledge.(Matkin, Riggat;1991) This professional writing skill is tough for the English as foreign language learners especially for the beginners in the domain. So learners use technology ease themselves as technology scaffolds their writing skills. It mainly helps to enhance the lexical, semantical ,syntactical and grammatical structure of the sentence or writing. New technologies are emerging day by day one of them is the Artificial Intelligence (AI). AI tools and techniques have evolved in the modern age, which cause a huge impact on EFL language learning and academic writing (Moore et al., 2016, pp. 1-13).

AI has a number of applications this study will discuss few of them. Grammarly is one of the most used applications of AI, Grammarly is preferred by the language learners because it helps them to enhance their writing proficiency by checking and adjusting grammatical errors, punctuation, and the writing style. (Chen et al.,2022; Xieling,2022). A study by researcher Maulidina and Wibowo (2022) shows that the Grammarly is a valuable resource for academic writing purpose. In this study researcher concluded that the consistent use of Grammarly among learners have a positive influence. It not only improve their writing proficiency but also motivates them and boost their confidence in their writing skills.

AI-automated tools are also used for maintaining the academic integrity, AI has powerful and accurate software which aids the authorities to make sure of any academic dishonesty. (O'Flaherty& Costabile, 2020).

Li, J., & Li, M. (2018) presented a study in which the researchers use AI tool known as Turnitin for the purpose of peer reviewing. The researcher focuses on the benefits, challenges and the features of this application for peer review in the ESL academic writing course. This study was carried out in 2016 in a public university in the United States. Study aims to boost up the academic writing skills and the language proficiency skills of undergraduate L2 students.

Students were selected through a placement test but they do not have any prior knowledge of Turnitin and nor are aware of a specific academic writing course. In this study researchers gathered data from archived Turnitin peer review records, surveys and learner perceptions. In this study the researcher finds Turnitin as a resource full tool for peer review as it helped the students to improve in a efficient way, in the final analysis the researcher observed the significant change in students comments, students after using Turnitin focuses more on the global issues than the local issues this percentage increased from 35.6% to 71.2%.

Stappenbelt and Rowles (2009) also evaluated the impact of Turnitin. Researchers use this plagiarism detection software to detect the academic writing of university students. Their study claims that if students use Turnitin ethically it will have a positive influence on students, using Turnitin in academic context will raise awareness of plagiarism and academic deception and when students get a thorough feedback on their they get encouraged and try to produce productive work.

Moreover, applications such as ChatGPT and OpenAI's GPT-3 are also emerging tools used for generating the efficient academic writing content and also prove to be an effective language learning models. These models generate the content according to the prompt provided by the user, their usage in writing the scholarly articles, essays, and the literature reviews as well as their use in story and content writing makes it a diverse tool which helps the learner and writer to manage their work in time bound situation. (Katar et al., 2022; Cotton et al., 2023)

Jalil Fathi & Masoud Rahimi (2024) conduct qualitative research the researcher enquires about how AI-enhanced writing mediation using ChatGPT serves to enhance the academic writing skills of EFL learners. this study includes the three processes that is think aloud interviews, observations and the Discourse analysis. Fourteen EFL learners, preparing for the IELTS examination from diverse academic backgrounds and varying experiences in academic writing participate in this study. These learners have the basic understanding of the AI- automated language learning tools. Researcher gave a writing task to the learners they have to write 400-word argumentative essay on the topic 'Should social media platforms be held responsible for the spread of misinformation?' and researcher also set a time for this task. Learners are provided with instructions regarding the incorporation of ChatGPT for the essay writing purpose. From the collected data researchers reported that the learners found ChatGPT's writing assistance very beneficial for the development of their academic writing skills. Learners also highlighted that AI tools helped them to measure their skill level and provided them with the proper guidance where they needed.

Another AI tool which has a significant impact on academic writing is QuillBot. QuillBot enhanced the efficiency of the writing and studies showed its usefulness in academic writing.

NurmayantiSuryadi (2023) did an experimental study and found that students who use QuillBot presented a well refined task as compared to others with a traditional approach. Students also benefit from the feedback provided by the tool which ultimately makes them confident in the writing process.

Similarly, Kurniati and Fithriani (2022) conducted a similar study in a qualitative paradigm. Study results that QuillBot is an easy to use tool and it also has specifications such as personalized comments which help the learner to identify their errors and inspire them to work further and more effectively.

Ummeaimon Shabbir(2023) in her study made a comparison of two AI tools, QuillBot and Grammarly. From this study researcher provide insights and claims that both tools provide an enhanced version of academic writing including the style, structure, and vocabulary choices. But QuillBot is more productive as compared to Grammarly because it offers advanced language processing techniques.

Recent research on AI assistance tools for automated academic writing for EFL learners made scholars curious about the usage and features of AI applications, and the effects of these applications on the learner's perceptions.

Instructors and learner's perspectives regarding the use of AI

Many qualitative and quantitative studies highlight the perceptions of the language learners and instructors on the use of AI tools in an academic writing context. Muhammad Karimi (2023) used a survey and interview approach to get the opinions of EFL instructors about the use of Ai-automated tools (such as, ChatGPT, QuillBot, Grammarly and Turnitin). From the collected data researcher deduced that the instructors encourages the use of AI tools in an ethical manner

as it can provide the constructive feedback on the learner's tasks, which eventually improve the quality of their work. The same result was found by researcher Gu and Wang (2024) who conducted their study through a questionnaire tool. However the instructors find the AI tools helpful yet there are some insecurities while using these tools.

Another study by Agustini (2023), in which he interviewed observed the students who use ChatGPT and those who do not use ChatGPT in their writing process. Students with the awareness of the ChatGPT tool stated that they enjoy engaging with this AI tool, it has a positive impact on their language skills which include lexical choices, sentence structure, grammar and the writing mechanics. Students also said that they are more relaxed while dealing with ChatGPT to learn English as compared to peers and teachers, in this way AI tools made the learner's self sufficient to deal with the critical problems. This study also interviews students who are not aware of the use of ChatGPT for learning English and they consider it as just a tool which is somewhat helpful but not reliable.

Study through interviews was also done by Zu and Huang (2023) this study tells how much can ChatGPT be useful for the academic writers. This study focuses on the use of ChatGPT to complete different writing tasks whether it is under academic domain or the casual content writing. ChatGPT can help the scholars to identify the research question, find related studies, and can provide with the related brainstorm ideas. ChatGPT also provide support to correct the mechanical errors in academic writing by providing the necessary guidelines. But this study has a limitation, it cannot answer if students can use the ChatGPT to modify their assignments effectively because the researcher does not take note of students' interaction with the tool.

Yan (2023) also did the same study, made observations, took interviews and did text analysis. The study also shows that ChatGPT is a resourceful tool for generating academic essays, papers and articles. But it also has the same limitation because it lacks the proper steps of using ChatGPT for an effective academic writing process. Kim et al. (2024) in their study fill this gap, in this study researchers use the screen recordings along with the interviews and text analysis to evaluate the students' perspectives on role of AI tools in EFL academic writing. This study address the advantages (improving writing quality) and the challenges (lack of AI literacy) in the use of Generative AI tools for academic purposes.

Challenges in incorporating the AI tools in academic writing

AI as language learning models has its own disadvantages too. AI-generative tools demand a thorough prompt to train the software according to the learner's needs. And if it is not provided with enough contextual details it will result in unclear and misinterpreted work.

Bender and Friedman (2018) show their concerns regarding the unethical practices in academic writing due to the use of AI tools. Fathi & Rahimi (2023) and Arifin et al. (2023) cautions that over-reliance on AI mediated tools may limits the learners critical cognitive skills. And also notes the use of machine language reduces the impact of self expression, especially in argumentative and creative writing. Similarly, Subedi et al. warns regarding the extreme use of AI driven tools like summarizers, which provides the learners with comprehensive summaries of detailed studies. Researcher notes that relying on these AI tools learners neglects the analytical and critical points of the studies. Subedi et al. in his study add data from other researchers and states that over 70% of students reported that excessive dependence reduced critical thinking by 75%. Experimental results show full reliance on generative AI lowered scientific comprehension by ~25%.

Ethical concerns and academic integrity is one of the most recurrent challenges faced while employing AI tools for scaffolding academic writing. Alkamel & Alwagieh (2023) raises concerns regarding academic dishonesty and integrity, states that the AI tools like ChatGpt tempts the students to copy the data generated by AI and use it as their own. Raheem et al. (2023) also point out the plagiarism, and states that it is highly unethical and punishable to use

others findings and data without citing the owners correctly. For this purpose Plagiarism detection is important to keep the academic integrity.

Another limitation of the AI generated output is that it is not always correct, tools like chatgpt often creates hallucination and present the incorrect data as a fact based which appears as fluent and persuasive. This type of misinformation confuses the learners and make it hard for them to distinguish between facts and misinformation. Alkamel & Alwagieh (2023) discuss this reliability and fact-checking issue. Likewise Arifin et al. (2023) states that EFL learners might find much more difficulty while verifying the correctness of the claims because they English is their L2 and may they are not much proficient in it. Researchers also point out the inability of AI tools, Li & Li (2018) suggests that AI tools lacks context specific responses, because they are built on generic data so they are good choice for surface level corrections like grammar and spelling, but for genre and context specific moves it shows limitations.

All these challenges are faced by users of AI applications in academic context, along these some other considerations such as the inaccessibility of technological tools and digital literacy, tools restriction and pedagogical alignment, data privacy, biasness of the software and lack of awareness about the use of AI tools.

Methodology

This study uses a Sequential Mixed-Methods Design to explore the role of Artificial Intelligence (AI) in academic writing. In this design, both qualitative (5 recently published research articles on the topic of AI in academic writing and Semi structured interview of EFL teachers) and quantitative (a survey from major stakeholders of the study) data collected simultaneously, analyzed separately, and then the findings of analyses are compared for comprehensive interpretation. This design is selected because it gives equal importance to qualitative and quantitative data sets and provides a detailed understanding of the subject by merging the insights from existing literature of the selected articles and the collected perspectives of teachers and students.

Data Collection

Literature-Based Data (Qualitative Strand)

This research employs a Thematic Analysis framework and a qualitative approach. The objective of the study is to identify the impact of AI tools while scaffolding the Academic Writing of EFL learners. The key themes that have emerged in contemporary research articles on the topic of Artificial Intelligence and EFL academic writing published in reputable journals in 2023, 2024, and 2025 are explored in this study using the thematic analysis framework. These articles are selected through purposive sampling, and the focus was on the common themes of AI use in academic writing for EFL classes. The themes explore the impacts of AI-automated applications like ChatGPT, Quillbot, Turnitin, and Grammarly on English as a foreign language academic writing. The five articles were found in the databases such as Web of Science, Taylor& Francis, and Google Scholar. Data is collected from these selected articles to categorize the advantages and challenges of the AI tools in academic writing.

Interview and Survey Data (Quantitative and Qualitative Strand)

Two surveys were conducted to understand the perceptions of teachers and students regarding the use of AI technology to scaffold academic writing in EFL. Depending on their jobs, different questionnaires are made for students and teachers.

EFL Teachers are the target audience for the interview. In addition, a survey was developed for students titled "Scaffolding Academic Writing through AI Tools: Student Perspectives".

Students (n = 97)

Each survey consists of three sections: a demographic section, two open-ended questions regarding the advantages and disadvantages of employing AI for academic writing, and Likert scale questions (10 in the instructor survey and 11 in the student survey).

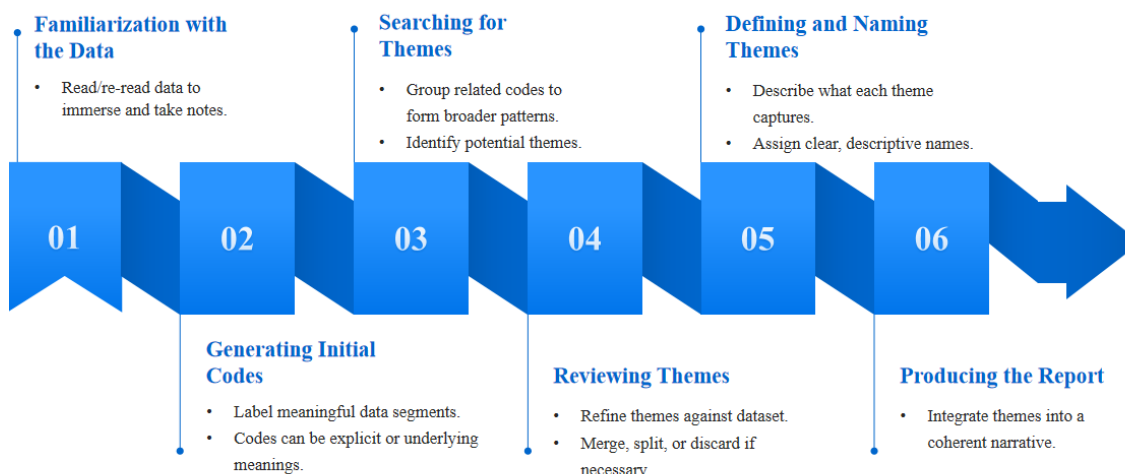
To reach individuals from various educational institutions, convenience sampling was employed. The study's data set consists of all presently enrolled university students who have used AI tools in an academic setting.

Data Analysis

Qualitative Analysis:

The current study adopts the thematic analysis framework proposed by Braun and Clarke (2006). It explores and interprets the qualitative data collected from the selected research studies on the use of AI in EFL Academic Writing. And also analyses the interview responses of the EFL teachers to generate the major themes. Thematic analysis is a flexible and rigorous approach for identifying complex patterns and themes. It is a systematic method to identify, analyze, and interpret qualitative data and helps researchers find the underlying meanings and complex phenomena. The present study follows the six-phase process outlined by Braun and Clarke to systematically identify the themes of AI use in scaffolding EFL Academic Writing. Six Phases of analysis; Familiarization with the Data, Generating Initial Codes, Searching for Themes, Reviewing the Themes, Defining and Naming the Themes, Producing the Report.

Phase - I (Steps of Braun and Clarke’s Thematic analysis Framework)



In this study, the data is evaluated using these steps; these phases are not rigorous, but iterative, allowing the researcher to switch back and forth. During the first step of this analysis, the researcher read the selected articles numerous times to become acquainted with their content. In step two, the fundamental thoughts developed in the first phase are meticulously organised into codes and datasets. In step three, researchers look for common patterns across all of the articles on utilising AI to scaffold academic writing for EFL students. These themes are refined and changed by subsequent researchers. In the next stage, the researcher assigns a specific and illustrative name to each theme. Finally, the researcher compiled all of the data into a final report.

Quantitative Analysis:

The quantitative data is analyzed through the basic descriptive statistics (e.g., frequency counts, percentages). It was applied to the closed-ended survey responses to measure trends, levels of awareness, and attitudes toward AI in academic writing. The descriptive analysis of the quantitative datasets, along with graph representation, is presented in this study.

Integration of Data:

According to the Sequential design, the qualitative and quantitative datasets are first examined independently to validate the study's triangulation, and then the outcomes from those analyses are interpreted together to provide a constructive report. The themes of qualitative thematic analysis are contrasted to survey responses from teachers and students to identify areas of convergence, divergence, and complementarity.

Ethical Considerations

The study strictly adheres to all the ethical norms of involving human participants. Surveys were filled with the participants consents and anonymity was ensured. Participation was voluntary, and data were used solely for academic purposes.

Qualitative Thematic Analysis Findings

Thematic analysis is used to analyse the themes from the five selected studies presented in table 1, These are further classified into Major and sub-themes bases on the common themes in all these studies. The analysis highlights the both positive and the negative aspects of the use of Automated language learning tools in English as a Foreign language academic writing context. This study focuses on the use of AI tools particularly ChatGPT, QuillBot, Grammarly, and Turnitin, in academic writing context.

Four major themes are analysed through the Braun and Clarke's (2006) thematic analysis framework. All the six steps of this framework are followed while getting to the final major themes. Thorough understanding of the collected data, breaking the codes from the data, then searching for themes in the presented data, again reviewing the themes to check its accuracy, defining and naming the themes into major and sub-themes and at the end reporting the final result of the analysis.

The four major themes are generated following the six phases of thematic analysis which are further classified into sub-themes.

1. Enhancement of Writing Skills

This theme defines the abilities and usefulness of the AI tools. Analysis points out the surface level scaffolding of Academic writing such a grammar, vocabulary, punctuation and fluency.

Lexical choices:

Automated language learning tools like QuillBot and Grammarly has features which offer the enhanced vocabulary to maintain the fluency of the text. These tools possess a large data of synonyms which are suggested according to the context. These tools also helps to avoid the use of repetitive and vague terms which ultimately make a good impression on the written content.

Grammatical Range and Accuracy:

AI tools scaffolds to improve the writing efficiency of the learners. AI-automated tool help the learners to identify the language errors particularly the errors in English academic writing, which involve the grammatical errors, and proofreading and enhance the cohesion and coherence in the writing.(Fitria,2023)

Critical Aspects:

AI-powered writing tools encourage learners to think critically by comparing the AI writing assistance to their personal writing objectives. But overreliance on these tools may limit the critical cognition also.

2. Support for Writing Processes

This theme reflects the usage of AI tools as a supportive technology throughout the writing process. These tools benefit learners by providing real-time feedback, brainstorm ideas, outline thoughts and paraphrase content also.

Brainstorming and Idea Generation:

AI based applications assists in generating ideas and expanding topics for the writers when they feel stuck at one point. Through these tools novice writers' overcome their stumbling

phases. (Bhatia, 2023). Similarly using AI tools like ChatGPT benefit learners to write essays and academic reports.

Outlining and Structuring:

AI enables the writers to create essay outlines and organize paragraph. Professional scholars use these tools to draft abstracts, introductions, and conclusions, while students can generate the points and can draw the outlines to organize their tasks or scholarly writings.

Time Management:

AI application users can save their valuable time as they can use these tools to proofread, paraphrase, and to make outlines which are time consuming activities but with AI learners can achieve all these in less time.

3. Fostering Autonomy and Motivation

This theme highlights the positive aspect of AI tools, it defines how these tools help learner to boost their EFL Academic writing skills. Tools like chatgpt and grammarly provides immediate and constructive feedback to learners manuscript, which ultimately enhance the learners understanding of the text.

Self-Regulation and Independence:

AI tools encourage students to take ownership of their own writing process. AI learning models provide the constructive feedback to their writing tasks and gradually students develop the capability of identifying the errors on their own without any implicit from AI tools.

Reduced Anxiety:

The analysis of selected studies highlights students claim that they feel relaxed while chatting and discussing their errors with AI-generative tools than to their peers and instructors.

Motivational Benefits:

The use of AI tools can motivate the learners and boost writer's confidence, as it provide the real-time feedback to the problems and also guide the learners in a friendly way. Instant feedback reduces anxiety and boosts engagement by giving students a sense of progress and accomplishment.

4. Ethical and Functional Challenges

This theme explores the concerns regarding the plagiarism, tool limitations and tool reliability and fact-check in academic writing. From these selected studies researcher get to know there is blurry boundary between the correctness and academic dishonesty, which challenges the ethical boundaries, citation practices and academic transparency.

Plagiarism Concerns:

Researchers show a great concern regarding the unethical use of AI in academic writing. Students who generate their whole tasks from AI and present it as their own are under the act of academic theft and it has a severe impact in academic integrity. And over reliance on these tools will also impact the user's own intellectual capabilities.

Tool Limitations:

However, these tools are very resourceful but these are not free to use completely, there are different plans to purchase the full versions of these tools. Free version is provided but lacks the features to carry the advanced study.

Reliability and Fact-Checking:

AI integrated apps does not ensure the accuracy and credibility of the generated content. Most of the times ChatGPT generate the dummy content which appear as a original one but has no genuine source.

Teachers' interview Analysis

10 teachers who are familiar with the AI tools usage in academia were interviewed. All belonged to different experience and teaching level.

Findings

Perceived Benefits of AI Writing Tool

From the interview responses, several key themes emerge regarding the teachers' perceptions of using AI tools for academic writing. One of the prominent themes is support in writing tasks; participants commented, e.g., "AI tools help in initial drafts, suggesting structure or improvements."

"AI tools can provide instant feedback or suggest better vocabulary." Participants also pointed out that using these tools enhances time efficiency, "Makes writing assignments faster." "Time saving and developing more creative ideas." Stating the benefits of AI tools for academic writing, teachers said that AI tools help students with idea generation and brainstorming, and easy access to these tools makes writing more manageable and self-sufficient. Teachers remarked that AI is a great learning aid if used wisely, can improve language proficiency, and can enhance students' confidence in writing by reducing their anxiety. However, the most cited benefits were AI's support with writing tasks (grammar, structure, vocabulary), followed by idea generation and time efficiency.

Examples from Responses

"They help in initial drafts, suggesting structure or improvements."

"AI tools can provide instant feedback or suggest better vocabulary."

"Makes writing assignments faster."

"Time saving and developing more creative ideas."

"Increased writing productivity."

"Effectiveness and efficiency in language learning."

"It helps generate ideas when students face writer's block."

"They improve sentence structure and grammar."

"It helps in enhancing vocabulary."

"Vocabulary suggestions, sentence structure, language enhancement."

"Enhance vocabulary."

"Expanding vocabulary..."

"If used as guidance, they help students learn how to improve."

"It's available 24/7, which is great for students who study late."

"Easily available support."

"Not relying on a teacher...more independent."

"It's easily accessible, easy to use."

"Students will be less anxious and overwhelmed..."

"Boosting confidence to some extent."

"Save them from fear of a new language."

Challenges or Concerns Regarding AI Writing Tools

Teachers stated that although AI-integrated tools are resourceful, they have limitations. Over-reliance on AI tools for academic writing tasks results in a lack of originality and sometimes leads to academic dishonesty. Students with limited guidance on AI use in academia find difficulty in assessing the AI-generated content, which can be inaccurate and unauthentic. Because of AI tools, students become distant from the critical thinking process by avoiding reading and writing practices. Teachers are concerned that the availability of easy resources may affect students' critical thinking and self-writing confidence, as they prefer the copy pasting from AI tools instead of putting in real effort.

Examples from Responses

- “They are becoming more dependable on AI writing tools.”
- “They stop using their intellect.”
- “Sometimes they only get dependent on AI.”
- “One big concern is that students might rely too much on AI and not develop their own skills.”
- “Plagiarism.”
- “Academic Misconduct.”
- “Cheating and plagiarism are, as mentioned, chief among the AI concerns...”
- “They do not bother to use their own mind...”
- “They trust even for decision making.”
- “Over reliance on AI tools can lead to lack of original thoughts...”
- “...hindrance for their creativity and critical skills.”
- “They have become impatient...”
- “...lack of originality in their writings.”
- “Distance from book-reading.”
- “Their critical thinking stops...”
- “Gadget-oriented habits.”
- “AI might not always understand the specific requirements...”
- “...unauthentic data frequently.”
- “It always serves a less chance of validity and authenticity in writing work.”
- “Copy pasting as it is data...”
- “They are using it to get rid of the workload...”
- “They become shirk worker...”
- “They prefer to be spoon fed...”
- “How to use effectively, cheating and plagiarism.”
- “The only area of concern and caution is that the students should stay ethical...”
- “Teacher's role as the guide and supervisor of the real learning process has become crucial like never before in history.”
- “Lack of self writing confidence”

Quantitative survey responses

Students Perspectives

Demographic section

Table 2 presents the demographic profile of student participants, including gender, age group, academic level, and self-assessed English proficiency.

Demographic Characteristics of Student Participants (N = 97)

| Variable | Category | Frequency (n) | Percentage (%) |
|-----------------------------------|------------------------|---------------|----------------|
| Gender | Female | 80 | 82.5 |
| | Male | 15 | 15.5 |
| | Prefer not to disclose | 2 | 2.1 |
| Age Group | Under 20 years | 19 | 19.6 |
| | 21–25 years | 74 | 76.3 |
| | 26–30 years | 4 | 4.1 |
| Academic Level | Undergraduate | 75 | 77.3 |
| | Master's | 21 | 21.6 |
| | Doctoral | 1 | 1.0 |
| Self-Assessed English Proficiency | Beginner | 19 | 19.8 |
| | Intermediate | 65 | 66.7 |
| | Advanced | 13 | 13.5 |

Likert Scale Responses

11 statements were included in the form followed by 5 point likert scale. Instructions were given, *indicate your agreement with the following statements using the 5-point Likert scale.*

Scale:

1= Strongly Disagree

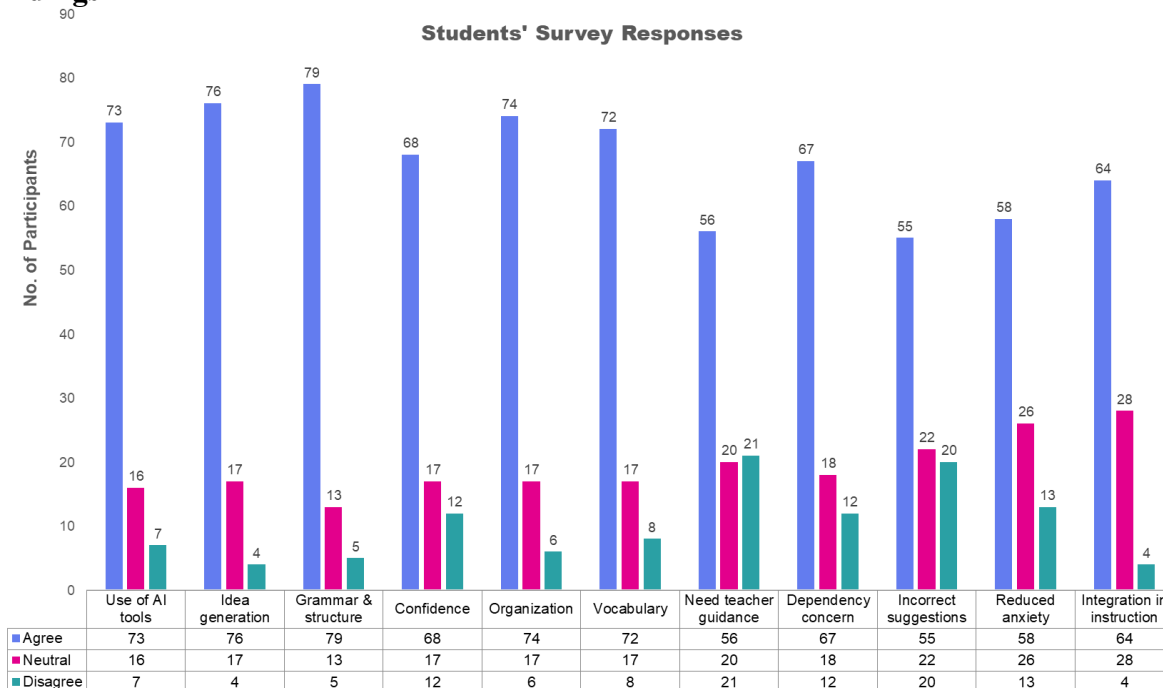
2= Disagree

3= Neutral

4= Agree

5= Strongly Agree

Findings



Graphical representation of survey results, where strongly agree and agree responses are combined, strongly disagree and disagree responses are combined, and neutral responses are presented separately.

Experience with AI Writing Tools

1. Use of AI writing tools

Students were asked about their experiences with AI tools. Of the students, 75.3% reported using AI tools for academic reasons, whereas 7.2% reported they had never used an AI writing tool. 16.5% of students chose not to share their experiences and stayed neutral. .

2. Generate ideas

Out of 96 participants, the majority agreed with this statement. Specifically, 78.3% of students responded with either "Agree" or "Strongly Agree" (Likert scale 4 or 5), indicating a high level of perceived usefulness in idea generation.

Only 4.2% disagreed, while 17.5% remained neutral.

3. Grammar and structure

44.3% of students agreed and 37.1% strongly agreed with this statement, indicating that AI tools help them to improve their writing by checking grammar and sentence structure.

4.1% disagreed and 1% strongly disagreed with this statement, while 13.4% participants chose to stay neutral to this statement..

4. Writing Confidence

This sentence was inserted to see if AI tools could increase students' confidence in their academic writing. The majority of the pupils replied positively. 36.1% strongly agreed and 34%

agreed with this statement, demonstrating that AI tools increase students' confidence. 17.5% remain indifferent on this remark, whilst 8.2% disagree and 4.1% strongly disagree with it.

5. Organization writing logically

35.1% agreed and 41.2% strongly agreed with this statement, citing the assistance of AI technologies in structuring their writing drafts. 3.1% of respondents disagree with this statement, and 3.1% strongly disagree. 17.5%, on the other hand, were neutral about this statement and did not agree with their viewpoint.

6. Vocabulary

Learning new words appears to be aided by AI techniques. On the Likert scale, 44.3% of respondents agree, and 29.9% strongly agree, demonstrating the value of AI tools for improving vocabulary.

In contrast, 17.5% of respondents are ambivalent about this statement, with 5.2% disagreeing and 3.1% strongly disagreeing.

7. Teacher guidance

Even with the availability of AI, 57.7% of participants said they still require the direction and assistance of their lecturers. 21.6% were not of this view, while 20.6% remained neutral to this statement.

8. Dependence on AI

Even though AI is very effective in the classroom, 69% of participants express worry about utilising these technologies excessively and fear that they will soon become reliant on them. 12.4% of participants seemed to disagree with this argument, whereas 18.6% of participants were uncertain about it.

9. Authenticity

The majority of participants supported the claim that occasionally AI technologies do deliver inaccurate and unnecessary information, with 25.8% choosing point 5 (Strongly Agree) and 30.9% choosing point 4 (Agree).

Of the participants, 22.7% were neutral, meaning they neither agreed nor disagreed with this statement, while 9.3% disagreed and 11.3% strongly disagreed.

10. Writing anxiety.

Of those surveyed, 20.6% strongly agree and 39.2% agree that AI technologies help individuals feel less anxious while they write. 26.8% of respondents opted to remain neutral on this claim. While 7.2% strongly disagreed, 6.2% disagreed with this statement, pointing out that AI tools cannot alleviate writing anxiety .

11. Academic integration

The goal of this statement was to learn about the future directions of AI implementation in academia. With 45.4% of students agreeing and 20.6% strongly agreeing, the majority of students support the use of AI in the classroom. 4.1% strongly oppose the concept of incorporating AI into official academic training, while 28.9% are ambivalent about it. .

Qualitative Analysis of Open Ended Student Survey Questions

Benefits of using AI tools

From the students' open-ended survey analysis researcher found that students claim that AI tools help them with grammar, sentence structure, and vocabulary. It also helps them brainstorm and generate ideas, organize academic notes, and get help for understanding complex concepts. Using these AI-integrated tools can speed up the writing process and enhance the efficiency of writing. Students also said that these tools are simple to use and are accessible to all, and they feel more confident while using such writing aid tools.

Examples from survey responses

- “It corrects grammar,” “improves sentence quality”
- “Gives me topic ideas,” “helps outline content”
- “Saves a lot of time,” “makes writing quick and easy”
- “Learned better academic phrases,” “improved my vocabulary”
- “Felt more confident,” “no fear of mistakes”
- “Easy to access,” “can use it whenever needed”

Concerns or limitations

Students responded to the challenges of using AI tools in academic writing, and survey analysis found that students are concerned about the accuracy and reliability of AI-integrated tools. Students stated that AI tools provide incorrect and sometimes irrelevant output. Students were also aware that over-dependence on AI might make them lazy and reduce their self-reliance and critical thinking ability. Respondents also reported the limitations of the AI tools (lack of usage guidance, financial limitations, internet, and technical issues). Among these, one major drawback of using AI in academic writing is the threat to academic integrity (plagiarism and originality issues).

Examples from survey responses

- “Sometimes gives wrong info,” “content is not always accurate”
- “I fear becoming too dependent,” “makes me lazy to think”
- “Fear of plagiarism,” “not my own ideas”
- “Takes away critical thinking,” “don’t analyze on my own”
- “Not always easy to use,” “internet issues,” “complex features”
- “Sometimes robotic answers,” “not very creative”

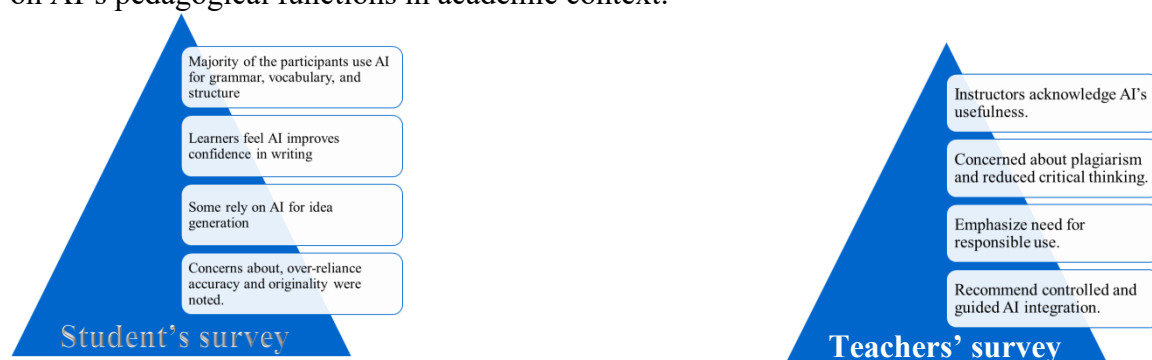
Integration of Quantitative and Qualitative Findings (Sequential Mixed-Method Design)

This section of the study integrates the Qualitative and Quantitative phases of the study to provide a holistic view of the conducted study under a sequential Mixed-Method design. The study combines the thematic analysis results of phase 1 and the phase 2 interview and survey analysis, documenting the teachers' and students' perspectives regarding the use of AI tools in EFL academic writing. Qualitative phase generated four key themes with three sub-themes for each key theme using Braun and Clarke's thematic analysis framework, which focuses on deeper underlying aspects. The surveys from teachers and students provided an overview of the perspectives and the trends among these stakeholders regarding the use of AI tools in academic writing. Together, these findings present a comprehensive picture of AI-integrated tools in EFL academic writing.

The integrated results highlight four overarching themes:

- Enhancement of Writing Skills**
 - Critical Thinking
 - Grammatical Range & Accuracy
 - Lexical Choices
- Support for Writing Processes**
 - Time Management
 - Outlining & Structuring
 - Brainstorming & Idea Generation
- Fostering Autonomy & Motivation**
 - Motivational Benefits
 - Self-Regulation & Independence
 - Reduced Anxiety
- Academic integrity & functional issues**
 - Reliability & Fact-checking
 - Tool Limitations
 - Plagiarism Concerns

The sub-themes derived from interviews and open-ended responses closely align with these categories, while the quantitative findings remain consistent with existing scholarly discussions on AI’s pedagogical functions in academic context.



Under the theme of Enhancement of Writing Skills, strong convergence was observed across literature, teacher, and student perspectives. The contemporary literature review, teachers’ survey, and students’ survey analysis all acknowledge the AI- integrated tools’ usefulness in assisting with writing tasks (grammar, vocabulary, sentence structure, and academic style). The sub-theme of critical thinking is also discussed. The literature review shows that AI tools can help in brainstorming and critical thinking, but over-reliance on AI tools can be dangerous. Similarly, the teachers and students responded to the survey that yes, AI tools can help in brainstorming, but they limit the person's self-thinking, which ultimately results in a lack of originality in the outcome.

Within the category of Support for Writing Processes, the findings showed a high degree of convergence. AI tools are consistently proving to be time-efficient, and this is proven by the results of the literature review and teacher and student surveys. With the help of AI, a person can achieve the writing task in less time. AI helps to generate ideas, explore concepts, and create outlines for essays and paragraphs which enhances the cohesion and organization of the text.

The theme of Fostering Autonomy and Motivation presented both convergent and divergent findings. The literature review and the students’ survey findings stated that AI can motivate students and boost the students' confidence in writing tasks through real-time feedback. On the other hand, teachers show concern and pointed out that AI can boost students’ confidence and reduce fear of writing, but it might reduce students’ motivation and efforts, and student may not put self effort and rely on copy-paste. Regarding the self-regulation and independence, Literature review and Survey analysis provides two perspectives. Surveys point to the over-reliance and lack of self writing, while the literature review suggests that with AI students become more efficient in the writing process. But over-reliance can limit students self capabilities. The analysis also verified that AI use helps learners reduce writing anxiety.

Lastly, the theme of Ethical and Functional Challenges demonstrated substantial convergence across all data sources. Participants expressed concerns about the accuracy and reliability of AI-generated outputs, noting that they often contain factual inaccuracies or fail to meet assignment requirements. Technical barriers, such as limited access to paid versions, unstable internet connectivity, and difficulty in understanding complex tool features, were also frequently mentioned. Moreover, plagiarism and ethical misconduct emerged as prominent concerns, reflecting widespread apprehension about academic dishonesty, unoriginal writing, and the potential misuse of AI-generated content. These findings align with broader scholarly debates highlighting the ethical and pedagogical implications of AI integration in higher education.

In summary, the integration of both quantitative and qualitative results within the Sequential Mixed-Method Design provides a comprehensive and nuanced understanding of AI's influence on academic writing. While AI tools effectively enhance writing efficiency, vocabulary acquisition, and learner confidence, they also introduce challenges related to accuracy, authenticity, motivation, and academic integrity. This synthesis underscores the need for balanced pedagogical strategies and ethical guidelines to ensure that AI serves as a tool for empowerment rather than dependency in academic writing contexts.

Conclusion

Utilization of AI-automated tools in EFL academic writing has reshaped the landscapes of learning process for learners as well as instructors. This study through Qualitative thematic analysis concluded that AI tools help EFL writers to improve their skills such as, grammar, vocabulary, fluency coherence and precision. Use of AI tools also help to boost the students' confidence and can save time while doing projects. In this way AI-driven tools have made the academic writing process more accessible for foreign language learners, most specifically for English language learners. Although it proved to be a beneficial but there are several disadvantages of these tools. It is horrific just to think what the over reliance of learners on AI tools will make them. Highlighting the perspectives of learners and educators is one of the research questions which is answered in literature review section. From those view points it is clear that some researchers believe and encourage the use of AI but they also vary about the academic integrity and the learners natural problem solving skills.

From all the analysed themes, it is observed that AI tools no doubt are valuable platforms, these can help to enhance the productivity of a language learners and can made them confident enough to evaluate their own task. But these AI tools have limitations which backfires on the researcher, such as; Tools like ChatGPT may generate well-structured text but sometimes lack critical depth or misinterpret prompts. Similarly, QuillBot and Grammarly, while effective in refining sentence structure, may introduce unnatural phrasing or fail to recognize complex syntactic constructions in EFL writing. Turnitin, on the other hand, plays a significant role in maintaining academic integrity but has been criticized for flagging legitimate paraphrasing as potential plagiarism. This study suggest to use the AI tools in a controlled and balanced environment, so that the writers can take help and can also use their own potential and problem solving skills.

This study has the limitation as it only focus on the thematic analysis and descriptive analysis yet there is no systematic tool used to analyse the data. The participants of the study are majorly females. The future study can be done on some systematic and experimental method on diverse population and diverse culture.

References

- Agustini, N. P. O. (2023). Examining the role of ChatGPT as a learning tool in promoting students' English language learning autonomy relevant to Kurikulum Merdeka Belajar. *EDUKASIA: Jurnal Pendidikan Dan Pembelajaran*, 4(2), 921–934. <https://doi.org/10.62775/edukasia.v4i2.373>
- Alharbi, W. (2023). AI in the foreign language classroom: A pedagogical overview of automated writing assistance tools. *Education Research International*, 2023(1), 4253331.
- Alkamel, M. A. A., & Alwagieh, N. A. S. (2024). Utilizing an adaptable artificial intelligence writing tool (ChatGPT) to enhance academic writing skills among Yemeni university EFL students. *Social Sciences & Humanities Open*, 10, 101095.
- Arifin, M. A., Rahman, A. A., Balla, A., Susanto, A. K., & Pratiwi, A. C. (2024). ChatGPT affordances and Indonesian EFL students' perceptions in L2 writing: A collaborative reflexive thematic analysis. *Changing English*, 1–17.
- Barrot, J. S. (2023). Using ChatGPT for second language writing: Pitfalls and potentials. *Assessing Writing*, 57, 100745. <https://doi.org/10.1016/j.asw.2023.100745>
- Bender, E. M., & Friedman, B. (2018). Data statements for natural language processing: Toward mitigating system bias and enabling better science. *Transactions of the Association for Computational Linguistics*, 6, 587–604.
- Bhatia, P. (2023). ChatGPT for academic writing: A game changer or a disruptive tool? *Journal of Anaesthesiology, Clinical Pharmacology*, 39(1), 1.
- Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, 8, 75264–75278.
- Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). Two decades of artificial intelligence in education. *Educational Technology & Society*, 25(1), 28–47.
- Clarke, V., & Braun, V. (2016). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297–298. <https://doi.org/10.1080/17439760.2016.1262613>
- Cotton, D. R., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, 1–12.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Fathi, J., & Rahimi, M. (2024). Utilising artificial intelligence-enhanced writing mediation to develop academic writing skills in EFL learners: A qualitative study. *Computer Assisted Language Learning*, 1–40.
- Feuerriegel, S., Hartmann, J., Janiesch, C., & Zschech, P. (2024). Generative AI. *Business & Information Systems Engineering*, 66(1), 111–126. <https://doi.org/10.1007/s12599-023-00834-7>
- Fitria, T. N. (2023). Artificial intelligence (AI) technology in OpenAI ChatGPT application: A review of ChatGPT in writing English essay. *Journal of English Language Teaching*, 12(1), 44–58. <https://doi.org/10.15294/elt.v12i1.64069>
- García-Peñalvo, F., & Vázquez-Ingelmo, A. (2023). What do we mean by GenAI? A systematic mapping of the evolution, trends, and techniques involved in generative AI. *International Journal of Interactive Multimedia and Artificial Intelligence*, 8(4), 7–16. <https://doi.org/10.9781/ijimai.2023.07.006>
- Geitgey, A. (2018). *Natural language processing is fun! How computers understand human language*.
- Gu, K., & Wang, D. (2024). To resist it or to embrace it? Examining ChatGPT's potential to support teacher feedback in EFL writing. *Education and Information Technologies*, 29(1), 8435–8463. <https://doi.org/10.1007/s10639-023-12146-0>

- Hsiao, J. C., & Chang, J. S. (2023). Enhancing EFL reading and writing through AI-powered tools: Design, implementation, and evaluation of an online course. *Interactive Learning Environments*. Advance online publication. <https://doi.org/10.1080/10494820.2023.2207187>
- Huang, J., Saleh, S., & Liu, Y. (2021). A review on artificial intelligence in education. *Academic Journal of Interdisciplinary Studies*, 10(206).
- Katar, O., Özkan, D., Yildirim, Ö., & Acharya, U. R. (2022). Evaluation of GPT-3 AI language model in research paper writing. *Turkish Journal of Science and Technology*, 18(2), 311–318.
- Kim, J., Yu, S., Detrick, R., & Li, N. (2024). Exploring students' perspectives on generative AI-assisted academic writing. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-024-12878-7>
- Kurniati, E. Y., & Fithriani, R. (2022). Post-graduate students' perceptions of Quillbot utilization in English academic writing class. *Journal of English Language Teaching and Linguistics*, 7(3), 437–451.
- Li, J., & Li, M. (2018). Turnitin and peer review in ESL academic writing classrooms. *Language Learning & Technology*, 22(1), 27–41. <https://dx.doi.org/10125/44576>
- Liu, C., Hou, J., Tu, Y. F., Wang, Y., & Hwang, G. J. (2021). Incorporating a reflective thinking promoting mechanism into artificial intelligence-supported English writing environments. *Interactive Learning Environments*, 31(9), 5614–5632. <https://doi.org/10.1080/10494820.2021.2012812>
- Malon, J. C., Virtudazo, J. A., Vallente, W., Ayop, L., & Malon, M. F. O. (2024). Expressing ideas: AI-integrated paraphrasing to students' writing skills. *International Journal of Educational Methodology*, 10(4), 531–542.
- Matkin, R. E., & Riggat, T. F. (1991). *Persist and publish: Helpful hints for academic writing and publishing*. University Press of Colorado.
- Maulidina, P., & Wibowo, H. (2022). The use of Grammarly tools to enrich student's writing ability. *Lingua*, 18(2), 179–189.
- Mohammadkarimi, E. (2023). Teachers' reflections on academic dishonesty in EFL students' writings in the era of artificial intelligence. *Journal of Applied Learning and Teaching*, 6(2), 105–113. <https://doi.org/10.37074/jalt.2023.6.2.10>
- Moore, J. L., Rosinski, P., Peeples, T., Pigg, S., Rife, M. C., Brunk-Chavez, B., & Grabill, J. T. (2016). Revisualizing composition: How first-year writers use composing technologies. *Computers and Composition*, 39, 1–13. <https://doi.org/10.1016/j.compcom.2015.11.001>
- Nurmayanti, N., & Suryadi, S. (2023). The effectiveness of using Quillbot in improving writing for students of English education study program. *Jurnal Teknologi Pendidikan: Jurnal Penelitian dan Pengembangan Pembelajaran*, 8(1), 32–40.
- O'Flaherty, J., & Costabile, M. (2020). Using a science simulation-based learning tool to develop students' active learning, self-confidence and critical thinking in academic writing. *Nurse Education in Practice*, 47, 102839.
- OpenAI. (2025). *ChatGPT* (June 19 version) [Large language model]. <https://chat.openai.com/chat>
- Popenici, S. A., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 12(1), 1–13.
- Raheem, B. R., Anjum, F., & Ghafar, Z. N. (2023). Exploring the profound impact of artificial intelligence applications (Quillbot, Grammarly and ChatGPT) on English academic writing: A systematic review. *International Journal of Integrative Research*, 1(10), 599–622.

- Sari, D. K., Supahar, S., Rosana, D., Dinata, P. A. C., & Istiqlal, M. (2025). Measuring artificial intelligence literacy: The perspective of Indonesian higher education students. *Journal of Pedagogical Research*, 9(2), 143–157. <https://doi.org/10.33902/JPR.202531879>
- Shabbir, U. (2023). *Quillbot vs. Grammarly: Which tool is a better writing assistant?* MakeUseOf. <https://www.makeuseof.com/quillbot-vs-grammarly/>
- Stappenbelt, B., & Rowles, C. (2009). *The effectiveness of plagiarism detection software as a learning tool in academic writing education.*
- Su, Y., Lin, Y., & Lai, C. (2023). Collaborating with ChatGPT in argumentative writing classrooms. *Assessing Writing*, 57, 100752. <https://doi.org/10.1016/j.asw.2023.100752>
- Subedi, R., & Nyamasvisva, T. E. (2024). *Review of the influence of artificial intelligence in academic writing.* DAV College & Infrastructure University Kuala Lumpur.
- Yan, D. (2023). Impact of ChatGPT on learners in a L2 writing practicum: An exploratory investigation. *Education and Information Technologies*, 28, 13943–13967. <https://doi.org/10.1007/s10639-023-11742-4>
- Yeo, M. (2023). Academic integrity in the age of artificial intelligence (AI) authoring apps. *TESOL Journal*, 14(3), e716. <https://doi.org/10.1002/tesj.716>