



EXPLORING THE ROLE OF ARTIFICIAL INTELLIGENCE IN ACADEMIC WRITING AMONG STUDENTS

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ABSTRACT

This study explores the use of Artificial Intelligence (AI) tools, specifically ChatGPT and Grammarly, in enhancing students' academic writing. Using a qualitative descriptive approach, data were collected through observations, semi-structured interviews, and document analysis of 20 students' writing drafts before and after AI-assisted revisions. The findings show that 1) Students experienced several advantages from AI use, including faster idea generation, improved grammar, better sentence structure, enhanced vocabulary, and increased writing productivity, although some students exhibited overreliance on AI, which may limit independent writing skills. 2) AI tools also contributed to the development of academic knowledge and creativity, as students used AI suggestions to refine arguments, expand ideas, and improve overall coherence and academic tone. 3) Regarding perceptions, students generally viewed AI positively, noting that it increased their confidence, motivation, and engagement in writing, while also recognizing the importance of critical evaluation to avoid dependency. Overall, the study indicates that AI tools can effectively support both technical and cognitive aspects of academic writing when integrated with reflective and guided practices.

Key Words : *Artificial Intelligence, Academic Writing, Student Perception, Writing Quality.*

1. INTRODUCTION

Technological advancements have profoundly transformed nearly every aspect of human life, including the field of education. The integration of technology has reshaped traditional classrooms into dynamic, interactive learning spaces where digital tools play a pivotal role in supporting effective teaching and learning (Fadilah et al., 2023; Amin, 2023; Hadiani & Rohmah, 2021). Devices such as computers, smartphones, and the internet have introduced innovative approaches that enhance both student engagement and learning outcomes. According to Mandal and Srinivas (2022), the use of digital technologies in education facilitates

collaborative learning, fosters critical thinking, and equips students with essential skills needed to navigate the demands of the modern era.

In recent years, rapid technological progress has also revolutionized academic practices. Within the educational context, Artificial Intelligence (AI) has emerged as a powerful tool, particularly in improving students' academic writing performance (Ahmed & Ahmed, 2022; Rosdiana et al., 2024; Crompton et al., 2024). AI technologies assist students by checking grammar, generating relevant ideas, and providing information aligned with their writing topics.

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Lukita et al. (2023) further emphasize that AI's analytical capability enables it to process data effectively, thereby supporting students in multiple dimensions of academic writing.

Academic writing itself is a formal and structured form of communication used within universities and scholarly communities. It requires critical engagement with sources, coherent argumentation, and precision in language use (Aljuaid, 2024; Zhang et al., 2025; Oshima, 2019). The primary purpose of academic writing in higher education is to cultivate critical thinking, communication, and research skills, which together contribute to knowledge creation and scholarly discourse (Dergaa et al., 2023; Rehman et al., 2025; Hermida, 2024). Song and Song (2023) add that effective academic writing demands clarity, logical argumentation supported by evidence, and adherence to established academic conventions. As educational standards evolve, the demand for proficient academic writing skills has increased, emphasizing students' ability to articulate ideas logically and critically (Ahmed & Ahmed, 2022). Moreover, Khalifa and Albadawy (2024) argue that mastery of academic writing is essential for students' academic success and future professional development, as it enables

clear communication, collaboration, and intellectual contribution.

Over time, academic writing has evolved to provide learners with the necessary skills for success in higher education. Research demonstrates that targeted writing programs effectively enhance students' ability to structure and organize academic texts (Aljuaid, 2024). The integration of AI further strengthens this development by addressing students' common writing challenges, including reference management, content organization, and alignment with academic standards (Gerlich, 2025; Wei, 2023; El Maamri, 2025). This advancement is particularly beneficial for students at Universitas PGRI Palembang, where many experience difficulties meeting academic writing expectations. AI tools provide structured support that helps these students overcome barriers more efficiently and productively (Christou, 2023; Ngoc et al., 2025; Pokrivcakova, 2019).

In the writing process, AI substantially reduces students' workload by assisting with idea development, organization, and refinement of arguments. Khalifa and Albadawy (2024) note that AI helps generate ideas, expand text, and complete sentences, allowing students to focus more on analysis and

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reasoning. Similarly, Mazrou and Alzyoudi (2024) report that tools such as ChatGPT improve writing efficiency through outlining and stylistic enhancement. AI applications also facilitate comprehension of complex information, thereby enriching students' understanding and academic productivity (Dergaa et al., 2023). Furthermore, during editing and revision, AI tools effectively check grammar, coherence, and style an advantage for English Education students who must meet rigorous academic writing standards.

AI-based writing assistants such as Grammarly, Quillbot, and ChatGPT have become transformative tools in supporting academic writing. These platforms enhance writing quality by identifying errors, suggesting improvements, and assisting in citation management (Royani & Sihombing, 2023). Lin (2025) highlights that AI integration in education bridges writing skill gaps and encourages autonomous learning, as students are empowered to evaluate feedback and make informed revisions. The increasing sophistication of AI technologies promises to reshape the academic landscape, paving the way for intelligent tutoring systems capable of offering personalized guidance and feedback.

Given this growing relevance, the present study aims to explore the role of Artificial Intelligence (AI) in the academic writing process among university students. Specifically, it investigates how students utilize AI across different stages of writing from idea generation and drafting to revising and editing. This research also examines students' perceptions regarding the benefits and challenges of using AI, particularly in terms of efficiency, accuracy, convenience, and risks of overreliance. Additionally, it seeks to assess the influence of AI on students' critical thinking, independent learning, and originality, as well as their awareness of ethical issues related to plagiarism and academic integrity. The findings are expected to contribute valuable insights for higher education institutions in formulating policies and pedagogical strategies that responsibly integrate AI into academic writing practices. Based on this background, the researcher deems it both relevant and essential to conduct a study entitled *“Exploring the Role of Artificial Intelligence in Academic Writing Among Students”*.

2. LITERATURE REVIEW**2.1 Concept of Artificial Intelligence (AI)**

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Artificial Intelligence (AI) is a branch of computer science focused on developing systems that can perform tasks that typically require human intelligence, such as pattern recognition, problem-solving, and decision-making (Holmes et al., 2019). The core components of AI include machine learning, neural networks, and natural language processing (NLP), which enable machines to learn from data and improve their performance over time (Sokolov, 2019). In the context of education, AI has become an essential tool that supports personalized learning, provides instant feedback, and automates administrative tasks that traditionally burden educators. However, as AI becomes increasingly integrated into educational systems, ethical considerations must also be addressed particularly concerning data privacy, algorithmic bias, and social responsibility (Halvorson, 2024).

2.2 The Use of AI in Education and Academic Writing

The integration of AI in education has significantly transformed teaching and learning processes, especially in academic writing (Dergaa et al., 2023). AI-powered tools such as Grammarly, Turnitin, and ChatGPT assist students in improving grammatical accuracy, sentence structure, and writing style to

meet academic standards (Alharbi, 2023; Mazrou & Alzyoudi, 2024). Moreover, AI supports literature review activities by efficiently scanning thousands of scholarly sources, identifying recurring themes, and summarizing findings (Madhavi et al., 2023; Verdegem, 2024). In addition, mobile-assisted language learning (MALL) and adaptive AI platforms enhance students' motivation and provide tailored academic support according to individual learning needs (Kartika et al., 2024). These developments demonstrate AI's potential to make education more interactive, efficient, and inclusive.

2.3 AI Applications in Academic Writing

AI tools play a crucial role in supporting students throughout every stage of academic writing from brainstorming and outlining to revision and final editing (Williyan et al., 2024). Applications such as ChatGPT have been shown to improve students' confidence and help overcome writing difficulties, including writer's block and challenges in argument development (Nygård, 2024). At Universitas PGRI Palembang, the integration of AI has provided English Education students with valuable assistance in meeting academic writing standards and improving linguistic

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competence. Nevertheless, scholars emphasize that while AI enhances productivity, its excessive use may reduce students' critical thinking and originality if not used responsibly (Dai & Ke, 2022). Therefore, effective guidance and ethical awareness are essential in integrating AI into academic writing practices.

3. METHODOLOGY***3.1 Variables and Operational Definitions of Variables***

This research applies a qualitative descriptive approach, suitable for exploring students' experiences and perceptions naturally without manipulating variables (Creswell & Poth, 2018; Gardner, 2018). Two main variables are identified: the independent variable AI integration in academic writing, and the dependent variable students' academic writing performance. The independent variable refers to the use of AI tools such as ChatGPT and Grammarly to assist in improving grammar, structure, and coherence (Zhang et al., 2021). The dependent variable involves students' improvements in clarity, organization, grammatical accuracy, vocabulary, and confidence, including their perceptions of AI's usefulness and challenges.

3.2 Setting of the Research

The research took place at Universitas PGRI Palembang, particularly within the English Education Study Program. This setting was chosen because the program strongly emphasizes academic writing skills and promotes the integration of digital technologies in language learning. It provides a realistic environment where AI tools are increasingly embedded in students' writing practices.

3.3 Population and Sample of the Research

The population of this study consists of all students enrolled in the English Education Study Program at Universitas PGRI Palembang. From this population, a purposive sample of 20 students was selected 10 from the second semester and 10 from the fourth semester. Purposive sampling was chosen because it allows the researcher to select participants with direct experience using AI tools in academic writing, ensuring that the collected data are relevant and meaningful (Etikan et al., 2018).

3.4 Technique for Collecting Data

Data collection used three qualitative techniques observation, interview, and document analysis to ensure triangulation and data credibility (Miles & Huberman,

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2019). Observation was conducted to record how students used AI tools during writing tasks. Semi-structured interviews gathered students' insights about AI's impact on their writing, motivation, and confidence (Kvale, 2021). Document analysis examined students' drafts before and after using AI tools, providing concrete evidence of improvement and AI influence.

3.5 *Technique for Analyzing Data*

Data were analyzed through three stages: data collection, condensation, and conclusion drawing. The researcher gathered data from observations, interviews, and documents, then condensed them by identifying patterns, themes, and categories relevant to the study's objectives. The findings were verified through triangulation, comparing data from different sources to ensure credibility and accuracy (Miles & Huberman, 2019).

3.6 *Data Analysis Procedure (Interactive Model)*

The study employed Miles and Huberman (2019) interactive analysis model, consisting of data condensation, data display, and conclusion drawing. Data condensation involved coding and organizing key ideas from transcripts and field notes. Data display presented the

organized findings in narrative and tabular form, facilitating interpretation (Neuman, 2019). Finally, conclusions were drawn and verified through triangulation of observation, interview, and document data to ensure validity and reliability (Creswell & Poth, 2018). This iterative process ensured a thorough, transparent, and trustworthy analysis of how AI tools influence students' academic writing performance.

4. FINDINGS AND DISCUSSIONS**4.1 *Advantages and Disadvantages Experienced by Students in Using AI Tools***

Based on the findings from observation, interviews, and document analysis, students experienced multiple advantages when integrating AI tools such as ChatGPT and Grammarly into their academic writing. Observational data showed that students were able to generate ideas quickly, organize their thoughts more systematically, and correct grammatical errors more efficiently. For example, field notes indicated that students frequently used ChatGPT for drafting paragraphs and Grammarly for revising grammar, punctuation, and style, which accelerated their writing process and increased productivity. Interview responses further supported this finding; one student stated, "Grammarly helps me notice mistakes that I often ignore, and

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ChatGPT gives me better sentence flow” (Student 4, Interview). Document analysis revealed that after using AI, students’ drafts exhibited clearer sentence structure, improved coherence, and enhanced vocabulary usage, demonstrating that AI tools help learners produce academically acceptable writing with less cognitive effort.

However, the findings also highlight some disadvantages. Observations and interviews revealed that a few students became overly reliant on AI suggestions, sometimes applying corrections or generating content without critical evaluation. As one participant admitted, “Sometimes I just copy what ChatGPT gives without thinking much about my own ideas” (Student 5, Interview). This overdependence may reduce students’ opportunities for independent problem-solving and critical thinking, suggesting that AI should be used as a supportive tool rather than a substitute for cognitive engagement. These results are consistent with prior studies emphasizing both the benefits and limitations of AI in education, noting that while AI can enhance productivity and accuracy, learners must remain active agents in the writing process (Rahayu et al., 2024).

4.2 AI’s Contribution to Academic Knowledge and Creative Idea Development

AI tools contributed significantly to the improvement of students’ academic knowledge and creative thinking during writing. Observational data showed that students frequently experimented with different prompts in ChatGPT to generate relevant ideas and alternative expressions, indicating that AI can stimulate ideational diversity and creativity. Document analysis confirmed that revisions guided by AI contained more complex sentence structures, coherent paragraphing, and richer vocabulary, reflecting deeper engagement with the content. For instance, Student 3 revised “*I like write because it is fun but sometimes I not know what to write*” into “*I enjoy writing because it is engaging, but sometimes I do not know what to write,*” illustrating how AI facilitated clarity, idea expansion, and formal academic tone.

Interviews reinforced this observation. Several participants reported that AI assisted them in structuring their arguments logically, developing supporting evidence, and exploring alternative viewpoints. One student commented, “*ChatGPT helps me think faster and gives ideas I would not have*

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considered on my own” (Student 4, Interview). This finding aligns with existing literature suggesting that AI can serve as a cognitive scaffold, supporting both knowledge acquisition and creative idea generation, while enabling learners to refine their arguments and reasoning (Dergaa et al., 2023). Nonetheless, students emphasized the importance of critical evaluation, noting that AI outputs sometimes lacked contextual accuracy, requiring them to adjust suggestions according to academic standards.

4.3 Students’ Perceptions Regarding AI Use in Academic Writing

Students’ perceptions of AI tools were largely positive but nuanced. Most participants expressed appreciation for the convenience and efficiency AI provides in drafting, revising, and enhancing academic texts. Student 1 stated, *“Using Grammarly and ChatGPT makes my writing faster and more accurate; I feel more confident submitting my essays”*. Observation data also showed that students actively engaged with AI feedback, comparing suggestions with their own ideas and selectively applying improvements, reflecting an awareness of the tools’ supportive role.

However, some students expressed concerns regarding dependency and the potential decline of independent writing skills. As one respondent said, *“I feel lazy to write manually now because AI gives suggestions so easily”* (Student 2, Interview). This duality suggests that while students recognize the effectiveness of AI in improving their writing performance and confidence, they also remain cautious about overreliance, emphasizing the need for balanced use and guided integration in the learning process. These perceptions are consistent with studies on learner engagement with AI, which highlight both the motivational benefits and the challenges associated with developing autonomous skills (Alharbi, 2023).

Across the three research questions, it is evident that AI tools positively influence students’ academic writing in terms of grammar, vocabulary, coherence, and motivation. Document analysis demonstrated measurable improvements in the quality of writing outputs, while observation and interviews revealed behavioral and perceptual changes, such as increased confidence, motivation, and willingness to explore ideas. Nevertheless, the findings consistently underline the necessity for critical thinking and reflective use, as

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overreliance may hinder the development of independent writing skills and creativity.

The findings suggest that AI tools, when used appropriately, act as powerful aids that enhance both the technical and cognitive dimensions of academic writing. They help students correct mechanical errors, expand vocabulary, organize ideas coherently, and generate creative arguments. Students perceive AI as beneficial for productivity and confidence, yet recognize the need for careful, reflective use to avoid dependency. These findings support previous research asserting that AI integration can improve learning outcomes while fostering digital literacy and reflective writing practices (Creswell & Poth, 2018). Therefore, educators should provide guidance on strategic and ethical use of AI tools, ensuring that students maintain autonomy, critical thinking, and originality in academic writing.

5. KESIMPULAN

The findings of this study reveal that the integration of AI tools such as ChatGPT and Grammarly offers both advantages and challenges for students in academic writing. These tools significantly enhance writing

productivity, grammatical accuracy, vocabulary development, and overall writing structure. Students reported that AI helps them generate ideas faster and express arguments more clearly, contributing to improved confidence and motivation. Moreover, AI serves as a cognitive and creative support system, enabling learners to explore new perspectives and refine their academic writing skills. However, the study also found that excessive dependence on AI suggestions may hinder the development of independent writing abilities and critical thinking. Some students tend to accept AI feedback without sufficient evaluation, indicating a need for greater awareness of ethical and reflective use. Therefore, a balanced and guided integration of AI tools is essential to maximize their educational benefits while fostering students' autonomy, creativity, and analytical skills.

Future studies are recommended to examine the long-term effects of AI-assisted writing on students' independent learning and critical thinking development. Further research could also explore how AI integration influences writing performance across different academic disciplines and proficiency levels. Additionally, investigating teachers' roles and pedagogical strategies

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in guiding ethical AI use would provide valuable insights for educational policy and curriculum design. Finally, mixed-method research combining qualitative and quantitative approaches could offer a more comprehensive understanding of AI's impact on academic writing competence and learning outcomes.

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