

Management of Artificial Intelligence Utilization in Indonesian Language Learning and Its Impact on Students' Academic Writing Skills at Universitas Bakti Indonesia

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ABSTRACT

The integration of Artificial Intelligence (AI) into higher education provides new opportunities to support students' academic writing. However, its effectiveness depends on how AI is managed and integrated into the learning process. This study aimed to analyze the management of AI utilization in Indonesian Language learning and its impact on the academic writing skills of students at Universitas Bakti Indonesia. The study employed a mixed-methods approach with an explanatory sequential design. The quantitative phase involved 50 students selected through purposive sampling, while the qualitative phase involved selected lecturers and students. Data were collected through an AI utilization management questionnaire, an academic writing assessment rubric, and semi-structured interviews. Quantitative data were analyzed using descriptive and inferential statistics, while qualitative data were analyzed thematically. AI utilization management had a positive and significant relationship with students' academic writing skills ($r = 0.621$, $p < 0.001$). It also significantly predicted writing skills ($F(1,48) = 30.18$, $p < 0.001$), explaining 38.6% of the variance ($R^2 = 0.386$). The results showed a positive relationship between the management of AI utilization and students' academic writing skills. The qualitative findings indicated that lecturer guidance, structured AI use, information verification, feedback, and academic responsibility were important elements in supporting effective AI utilization. The findings suggest that AI can support students' academic writing development when its use is systematically managed and integrated with appropriate pedagogical guidance. AI should function as a learning support tool rather than replace students' independent thinking, writing processes, and academic responsibility.

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Introduction

The rapid development of digital technology has transformed various aspects of higher education, including teaching and learning practices. One of the most significant developments is the emergence of generative artificial intelligence (GenAI), particularly applications capable of producing and revising text (Cerchione et al., 2026). Since the introduction of ChatGPT and similar tools, AI has increasingly entered educational contexts and created new possibilities for supporting teaching, learning, and academic work (Salih et al., 2025). Rizun et al. (2026) emphasizes that GenAI has the potential to support teachers and learners, but its use in education should be guided by a human-centered approach, ethical considerations, and appropriate institutional policies. The increasing integration of AI into education has therefore shifted attention from whether AI should be used to how it should be used responsibly and meaningfully in learning environments.

In Indonesian Language learning, this development is particularly relevant because academic writing is an essential competence for university students. Academic writing requires students to formulate ideas clearly, develop logical arguments, organize information systematically, use appropriate academic language, and integrate sources responsibly (Agustina & Sumarno, 2026). These competencies cannot be developed merely by producing grammatically correct texts but require continuous practice, feedback, revision, and critical engagement with information. Students may still encounter difficulties in developing ideas, maintaining coherence, constructing arguments, and applying appropriate academic conventions. Consequently, learning strategies that provide meaningful support while maintaining students' intellectual involvement are necessary (Waloyo et al., 2025).

AI offers several possibilities for supporting these writing processes. Students can use AI-based tools to generate ideas, develop outlines, identify language problems, revise sentence structures, and obtain feedback on drafts (Akanda & Talukder, 2026; Atikah Atikah, 2026; Dahlan, 2026). Empirical studies have begun to demonstrate the potential of generative AI to support academic writing. Mahapatra (2024) for example, reported that ChatGPT used as a formative feedback tool could contribute to improvements in students' academic writing skills. Similarly, research by Kim et al. (2025) shows that students perceive generative AI as potentially useful throughout different stages of the academic writing process, although their experiences also reveal challenges related to the appropriate use of the technology (Jwair, 2025). These findings indicate that AI can function as a learning support tool when it is integrated thoughtfully into the writing process.

Nevertheless, the use of AI in academic writing also presents significant challenges. Students may become overly dependent on AI-generated content, accept information without sufficient verification, or reduce their own involvement in the processes of thinking, composing, and revising. Li & Ding (2025) found that generative AI is significantly changing how students engage in writing in higher education and argued that new forms of AI literacy are necessary to understand and navigate these changes. UNESCO (2023) similarly identifies concerns related to academic integrity, assessment, intellectual property, the reliability of AI-generated information, and the potential effects of AI on human thinking processes. Therefore, the educational value of AI does not depend solely on the technological capabilities of the tools but also on how students and educators understand, regulate, and integrate them into the learning process (AllahRakha, 2026).

The role of lecturers is consequently becoming increasingly important. In AI-supported learning environments, lecturers are not only expected to deliver subject content but also to guide students in using AI appropriately (Schmidt et al., 2025). UNESCO's AI Competency Framework for Teachers highlights the importance of teachers' competencies in ethical AI use, AI pedagogy, and the responsible integration of AI into educational practices (Sufyan

& Kurniawan, 2026). Likewise, the UNESCO AI Competency Framework for Students emphasizes human-centered thinking, AI ethics, responsible use, and critical judgment when interacting with AI systems (Ahmad et al., 2025). These frameworks suggest that AI integration requires clear instructional purposes, appropriate guidance, supervision, and evaluation rather than unrestricted technological adoption.

From a management perspective, the use of AI in learning therefore requires a systematic process that includes planning, implementation, guidance, monitoring, and evaluation (Supadi, 2024). Effective management can help lecturers determine when and why AI should be used, establish boundaries for its use, encourage students to verify AI-generated information, and ensure that AI remains a supporting technology rather than a substitute for students' intellectual work (Sajja et al., 2026). A recent synthesis of research on ChatGPT in higher education also indicates that AI applications are expanding across educational contexts while questions concerning appropriate adoption, pedagogical integration, and responsible use remain important areas for further research (Yahya et al., 2024).

Although previous studies have widely examined the use of generative AI in higher education, particularly in relation to students' perceptions, writing support, feedback, and learning outcomes, limited research has specifically examined how AI utilization is managed within Indonesian Language learning and how such management relates to students' academic writing skills. Existing studies tend to focus on the effectiveness or acceptance of AI tools, while less attention is given to the systematic management of AI use through planning, guidance, monitoring, and evaluation by lecturers (Fajrussalam et al., 2025; Kim et al., 2025; Li & Ding, 2025; Sajja et al., 2026). This indicates a research gap concerning the pedagogical management of AI utilization rather than AI use itself. Therefore, investigating AI utilization management in Indonesian Language learning is important to understand whether responsible and structured use of AI is associated with students' development of academic writing skills.

In the context of Universitas Bakti Indonesia, this study addresses the gap by examining the management of AI utilization in Indonesian Language learning and its relationship with students' academic writing skills. Unlike studies that primarily investigate students' perceptions or the direct use of AI tools, this study focuses on how AI use is intentionally organized and managed within the learning process. The findings are expected to provide empirical evidence on the importance of pedagogical management in maximizing the benefits of AI while maintaining students' critical thinking, writing competence, and responsibility for their academic work.

Based on this background, this study aims to analyze the management of Artificial Intelligence utilization in Indonesian Language learning and examine its impact on the academic writing skills of students at Universitas Bakti Indonesia. The study is expected to contribute empirical evidence to the growing discussion on responsible AI integration in higher education and provide practical considerations for lecturers and institutions in designing AI-supported Indonesian Language learning that is effective, ethical, and oriented toward students' academic development.

Method

This study employed a mixed-methods approach with an explanatory sequential design to examine the management of Artificial Intelligence (AI) utilization in Indonesian Language learning and its impact on students' academic writing skills at Universitas Bakti Indonesia. The research was conducted in the 2026 academic year and involved 50 undergraduate students who had participated in Indonesian Language courses and had

experience using AI-based applications during learning activities. The participants were selected using purposive sampling based on the criteria that they were actively enrolled in the course, had completed academic writing assignments, and had experience using AI as a learning support tool. Quantitative data were collected using an AI utilization management questionnaire and an academic writing assessment rubric, while qualitative data were obtained through semi-structured interviews with selected lecturers and students. The questionnaire consisted of indicators related to the planning of AI use, clarity of learning objectives, lecturer guidance, rules and limitations, monitoring and supervision, feedback and evaluation, and academic and ethical responsibility. Responses were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Students' academic writing skills were assessed through academic writing assignments using a rubric covering organization and structure, development and coherence of ideas, quality of arguments and supporting evidence, academic language and writing mechanics, and citation and referencing practices. The research instruments were reviewed by experts in Indonesian Language education, educational management, and educational assessment to ensure content validity. The reliability of the questionnaire was examined using Cronbach's Alpha, while consistency in writing assessment was ensured through independent evaluation by two assessors. Quantitative data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation, followed by assumption testing for normality and linearity. Pearson's Product-Moment Correlation was used to examine the relationship between AI utilization management and students' academic writing skills, while simple linear regression was conducted to determine the extent to which AI utilization management predicted academic writing performance. The coefficient of determination (R^2) was used to determine the proportion of variance in academic writing skills explained by AI utilization management, with statistical significance established at the 0.05 level. Following the quantitative analysis, semi-structured interviews were conducted with three lecturers and eight selected students to obtain deeper information regarding the planning, implementation, supervision, and evaluation of AI use, as well as its perceived benefits, challenges, dependence on technology, information verification, and academic integrity. Qualitative data were analyzed through data condensation, data display, and conclusion drawing. The quantitative and qualitative findings were then integrated at the interpretation stage to provide a comprehensive explanation of the statistical results and the actual implementation of AI utilization in Indonesian Language learning. Throughout the research process, ethical principles were maintained by informing participants about the research objectives, ensuring voluntary participation, protecting confidentiality, and emphasizing responsible AI use in academic activities.

Results and Discussion

1. Results

The results of the quantitative analysis showed that the management of Artificial Intelligence (AI) utilization in Indonesian Language learning was generally perceived positively by the students. Based on data from 50 respondents, the overall mean score was 4.08 with a standard deviation of 0.43 on a five-point Likert scale. The highest mean score was found in the lecturer guidance indicator (4.18), followed by clarity of learning objectives (4.12), feedback and evaluation (4.09), monitoring and supervision (4.05), academic and ethical responsibility (4.03), and rules and limitations of AI use (4.01). These results indicate that AI utilization had been accompanied by instructional guidance and several forms of control within the learning process.

Students' academic writing skills were also categorized as good, with a mean score of 82.14 and a standard deviation of 6.78. The highest score was obtained for organization and structure (83.72), followed by academic language and writing mechanics (82.86), development and coherence of ideas (82.34), citation and referencing practices (81.56), and quality of arguments and supporting evidence (80.22). The results indicate that students were relatively capable of organizing academic texts and applying appropriate academic language, although the development of arguments and supporting evidence remained comparatively lower.

Before inferential analysis was conducted, normality and linearity tests were performed. The results showed that the data were normally distributed and that the relationship between AI utilization management and academic writing skills was linear, with significance values above 0.05. Therefore, Pearson's Product-Moment Correlation and simple linear regression were used for hypothesis testing.

The Pearson correlation analysis showed a positive and significant relationship between AI utilization management and students' academic writing skills, with a correlation coefficient of $r = 0.621$ and $p < 0.001$. This result indicates that better management of AI utilization was associated with higher levels of academic writing skills.

The simple linear regression analysis also showed that AI utilization management significantly predicted students' academic writing skills, $F(1,48) = 30.18$, $p < 0.001$, with a standardized regression coefficient of $\beta = 0.621$. The coefficient of determination was $R^2 = 0.386$, indicating that AI utilization management accounted for approximately 38.6% of the variance in students' academic writing skills. The remaining 61.4% was attributable to other factors that were not examined in this study.

The qualitative data obtained from interviews with three lecturers and eight selected students provided additional information about the implementation of AI in Indonesian Language learning. The interview analysis identified four main themes: structured AI utilization, lecturer guidance, critical verification of AI-generated information, and academic responsibility. Lecturers indicated that AI was mainly used to support brainstorming, developing writing outlines, improving language, and providing feedback rather than producing complete academic assignments. Students also reported that AI helped them identify weaknesses in their drafts and generate alternative ways of expressing their ideas.

The interviews further showed that students who received clear guidance tended to use AI more selectively. They used AI primarily during the planning and revision stages of writing and were encouraged to compare AI-generated information with credible academic sources. Lecturers also emphasized that students remained responsible for the accuracy, arguments, sources, and final content of their academic writing. These qualitative findings provide contextual explanations for the positive quantitative relationship between AI utilization management and academic writing skills.

2. Discussion

The findings demonstrate that AI utilization management is positively associated with students' academic writing skills in Indonesian Language learning. The correlation coefficient ($r = 0.621$) indicates a moderately strong positive relationship, suggesting that students who experienced better-managed AI use tended to demonstrate better academic writing skills. This finding is consistent with Janah et al. (2026), who reported that ChatGPT could support improvements in academic writing when used as a formative feedback tool. Similarly, Alecu and Onea (2026) found that the way students interact with generative AI is associated with differences in writing performance. These findings suggest that the benefits of AI are influenced not only by access to the technology but also by how its use is

structured within the learning process.

The relatively high score for lecturer guidance (4.18) further emphasizes the importance of instructional support in AI-assisted writing. In this study, lecturers guided students to use AI for brainstorming, developing outlines, revising language, and evaluating drafts rather than generating complete assignments. This approach supports the view that AI should function as a learning support tool rather than replace students' intellectual work. Therefore, in academic writing instruction, lecturers should provide clear guidance on when AI can be used, what tasks can be supported by AI, and which parts of writing must remain the students' own work.

The findings also have important implications for academic writing instruction. AI can be integrated into different stages of the writing process, including idea generation, outlining, drafting, revision, and feedback. However, its use should be accompanied by activities that require students to explain their reasoning, evaluate AI-generated suggestions, compare information with academic sources, and revise the output independently. Such practices can help students develop not only writing accuracy but also critical thinking and academic judgment.

The relatively lower score for quality of arguments and supporting evidence (80.22) indicates that AI-assisted writing does not automatically ensure strong academic reasoning. Although AI can provide ideas and improve language expression, students still need to determine whether the arguments are relevant and whether the supporting evidence is credible. This finding is in line with Deep and Chen (2025), who emphasized the importance of critical thinking when using AI for academic tasks. Therefore, academic writing instruction should include explicit activities for source verification, evidence evaluation, argument development, and critical reflection on AI-generated content.

The qualitative findings strengthen the quantitative results by showing that students who received clearer guidance tended to use AI more selectively, particularly during the planning and revision stages. This finding supports the argument that effective AI integration requires active lecturer involvement. Rather than prohibiting AI use completely, lecturers can establish clear boundaries and teach students how to use AI critically and responsibly. In this context, AI can serve as a scaffold that supports students' writing processes while students remain responsible for the ideas, arguments, sources, and final text.

The regression analysis further showed that AI utilization management explained 38.6% of the variance in students' academic writing skills. Although this represents a meaningful contribution, the result also indicates that 61.4% of the variance was related to other factors not examined in this study. Therefore, AI utilization management should be viewed as one of several factors contributing to academic writing development. Prior writing experience, reading habits, vocabulary, motivation, critical thinking, and lecturer feedback may also influence students' writing performance.

Overall, these findings imply that AI integration in Indonesian Language learning should move beyond simply encouraging students to use AI tools. Higher education institutions and lecturers should develop clear guidelines covering appropriate AI use, information verification, academic integrity, disclosure of AI assistance, and students' responsibility for the final work. When AI is integrated with clear instructional objectives, lecturer guidance, critical verification, and continuous feedback, it can function as a supportive tool for developing students' academic writing skills without replacing their independent thinking and writing processes.

Conclusion

This study concludes that AI utilization management is positively associated with students' academic writing skills at Universitas Bakti Indonesia, with AI utilization management explaining 38.6% of the variance in writing skills. The findings indicate that structured AI use, lecturer guidance, information verification, feedback, and academic responsibility are important in supporting students' academic writing development.

Practically, lecturers should integrate AI into writing instruction through clear guidelines, particularly for brainstorming, outlining, revision, and feedback, while requiring students to verify information and remain responsible for their final work. Higher education institutions should support this practice by establishing clear policies on responsible AI use, academic integrity, and appropriate disclosure of AI assistance. These measures can help ensure that AI supports students' learning without replacing their critical thinking and independent writing.

References

- Agustina, C., & Sumarno. (2026). The Effectiveness of the Project Based Learning Model on Writing Skills in Senior High Schools. *Journal for Lesson and Learning Studies*, 9(1), 1–13. <https://doi.org/10.23887/jlls.v9i1.110054>
- Ahmad, Z., Sultana, A., Latheef, N. A., Siby, N., Sellami, A., & Abbasi, S. A. (2025). Measuring students' AI competence: Development and validation of a multidimensional scale integrating educational psychology perspectives. *Acta Psychologica*, 259, 105446. <https://doi.org/10.1016/j.actpsy.2025.105446>
- Akanda, F., & Talukder, T. (2026). AI writing tools in English writing: Reviewing teachers' and students' views on benefits and concerns. *Social Sciences & Humanities Open*, 13, 102437. <https://doi.org/10.1016/j.ssaho.2026.102437>
- Alecu, S., & Onea, G. A. (2026). Associations between generative AI use frequency, technology acceptance, attitudes toward AI, and reported learning preference patterns among students in physical education classes. *Frontiers in Sports and Active Living*, 8. <https://doi.org/10.3389/fspor.2026.1806871>
- AllahRakha, N. (2026). Accuracy, reliability, and regulatory concerns in the use of AI tools in education and research. *Social Sciences & Humanities Open*, 14, 103102. <https://doi.org/10.1016/j.ssaho.2026.103102>
- Atikah Atikah. (2026). The Use of Artificial Intelligence (AI) in Teaching English Writing. *Jurnal Alwatzikhoebillah: Kajian Islam, Pendidikan, Ekonomi, Humaniora*, 12(1), 653–660.
- Cerchione, R., Liccardo, G., & Passaro, R. (2026). Artificial knowledge generation: investigating the revolutionary role of generative AI in knowledge management. *Journal of Innovation & Knowledge*, 11, 100866. <https://doi.org/10.1016/j.jik.2025.100866>
- Dahlan, S. P. (2026). Generative artificial intelligence and critical digital literacy in EFL academic writing: An integrative review and pedagogical framework. *Journal of Language and Literature Inquiry*, 1(1), 43–53. <https://doi.org/10.55942/jlli.v1i1.1850>

- Deep, P. Das, & Chen, Y. (2025). The Role of AI in Academic Writing: Impacts on Writing Skills, Critical Thinking, and Integrity in Higher Education. *Societies*, 15(9), 247. <https://doi.org/10.3390/soc15090247>
- Fajrussalam, H., Walidain, A. B., Zakiyyan, F., Syifa, M., & Oktriana, S. I. (2025). PERAN AI DALAM MENINGKATKAN PEMBELAJARAN DI SEKOLAH DASAR. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 10(2), 479–491.
- Florencio da Silva, R. (2026). Beyond AI-Generated Text: Strengthening Academic Integrity and Critical Thinking in Higher Education. *Information*, 17(8), 780. <https://doi.org/10.3390/info17080780>
- Janah, R., Tusino, T., & Dewi, P. (2026). Exploring the Role of ChatGPT in Developing Writing Skills and Critical Thinking among Vocational High School Students. *AL-ISHLAH: Jurnal Pendidikan*, 18(1), 302–310. <https://doi.org/10.35445/alishlah.v18i1.8580>
- Jwair, A. A. Bin. (2025). Generative artificial intelligence in higher education: Students' journey through opportunities, challenges, and the horizons of academic transformation. *Cogent Education*, 12(1). <https://doi.org/10.1080/2331186X.2025.2589495>
- Li, T., & Ding, Y. (2025). Exploring the GenAI Literacy of Chinese University Students in EFL Learning. *International Journal of Computer-Assisted Language Learning and Teaching*, 15(1), 1–24. <https://doi.org/10.4018/IJCALLT.377175>
- Mahapatra, S. (2024). Impact of ChatGPT on ESL students' academic writing skills: a mixed methods intervention study. *Smart Learning Environments*, 11(1), 9. <https://doi.org/10.1186/s40561-024-00295-9>
- Mariyadi, M., Asri, D. F. Al, Pratama, I. W. S. W. P., Marthaningrum, G. B., & Siahaan, J. G. (2024). Persepsi Mahasiswa terhadap Pemanfaatan ChatGPT dalam Proses Pembelajaran di Perguruan Tinggi. *Didaktika: Jurnal Kependidikan*, 13(4 Nopember), 5423–5438. <https://mail.jurnaldidaktika.org/contents/article/view/1210>
- Rizun, N., Bordean, O. N., Nikiforova, A., Beleiu, I. N., & Revina, A. (2026). Generative AI in higher education: Ethical and behavioral factors influencing students' intentions to use ChatGPT. *Computers and Education Open*, 10, 100336. <https://doi.org/10.1016/j.caeo.2026.100336>
- Sajja, R., Sermet, Y., Fodale, B., & Demir, I. (2026). Evaluating AI-powered learning assistants in engineering higher education with implications for student engagement, ethics, and policy. *Scientific Reports*, 16(1). <https://doi.org/10.1038/s41598-026-39237-5>
- Salih, S., Husain, O., Hamdan, M., Abdelsalam, S., Elshafie, H., & Motwakel, A. (2025). Transforming education with AI: A systematic review of ChatGPT's role in learning, academic practices, and institutional adoption. *Results in Engineering*, 25, 103837. <https://doi.org/10.1016/j.rineng.2024.103837>
- Schmidt, D. A., Alboloushi, B., Thomas, A., & Magalhaes, R. (2025). Integrating artificial

- intelligence in higher education: perceptions, challenges, and strategies for academic innovation. *Computers and Education Open*, 9, 100274. <https://doi.org/10.1016/j.caeo.2025.100274>
- Sufyan, Y. A., & Kurniawan, D. (2026). Interpretation of UNESCO AI CFT Framework on teachers' AI competence development. *Curricula: Journal of Curriculum Development*, 5(2), 491–506. <https://doi.org/10.17509/curricula.v5i2.499>
- Supadi, S. (2024). Implementation of Data-Based Management in Improving the Effectiveness of AI-Assisted Learning in Senior High School. *Jurnal Ilmiah Rumpun Ilmu Pendidikan*, 1(4), 61–82. <https://doi.org/10.63760/jirip.v1i4.31>
- Waloyo, E., Hartono, R., Wahyuni, S., & Joko Yulianto, H. (2025). Making it Visible: A Scoping Review of a Competency Framework for ICT Literacy in Academic Writing. *Indonesian Journal of Educational Research and Review*, 8(3), 634–650. <https://doi.org/10.23887/ijerr.v8i3.100748>
- Yahya, R. N., Azizah, S. N., & Herlambang, Y. T. (2024). Pemanfaatan ChatGPT di Kalangan Mahasiswa: Sebuah Tinjauan Etika Teknologi dalam Perspektif Filsafat. *UPGRADE : Jurnal Pendidikan Teknologi Informasi*, 1(2), 53–59. <https://doi.org/10.30812/upgrade.v1i2.3481>
- Yrymbayeva, N., Yermekova, M., Tezekova, O., Issatayeva, B., Zhubandykova, A., & Tuxanbayev, A. (2026). Information competence and critical thinking in digital environments evidence from university students in Kazakhstan. *Frontiers in Education*, 11. <https://doi.org/10.3389/feduc.2026.1809360>
- Yulian Juita Ekalia, Fransiskus Jemadi, & Indra Susanto. (2025). Critical Thinking Skills and Argumentative Writing Ability: Is there any Correlation? *DIAJAR: Jurnal Pendidikan Dan Pembelajaran*, 4(3), 471–482. <https://doi.org/10.54259/diajar.v4i3.5108>