

The Integration of Artificial Intelligence in Indonesian Language Learning: Pedagogical Opportunities and Risks

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Abstrak

Perkembangan kecerdasan buatan (AI) telah membawa perubahan signifikan dalam praktik pendidikan, termasuk dalam pembelajaran Bahasa Indonesia. AI menawarkan berbagai peluang pedagogis seperti personalisasi pembelajaran, penguatan keterampilan literasi, dan penyediaan umpan balik berkelanjutan, namun sekaligus memunculkan risiko yang berpotensi mengganggu esensi pedagogi bahasa. Penelitian ini bertujuan untuk mengidentifikasi dan menganalisis secara kritis peluang serta risiko pedagogis integrasi AI dalam pembelajaran Bahasa Indonesia. Metode yang digunakan adalah *Systematic Literature Review* (SLR) dengan mengikuti pedoman PRISMA terhadap artikel ilmiah bereputasi yang relevan dengan AI, pedagogi bahasa, dan pendidikan di konteks Indonesia. Hasil kajian menunjukkan bahwa AI dapat memperkaya pembelajaran Bahasa Indonesia apabila digunakan sebagai alat pendukung yang terintegrasi dengan desain pedagogis yang reflektif. Namun, risiko seperti ketergantungan kognitif siswa, penurunan produksi bahasa autentik, ketimpangan literasi digital, serta bias linguistik dan budaya perlu mendapat perhatian serius. Penelitian ini menyimpulkan bahwa efektivitas integrasi AI sangat ditentukan oleh peran guru, kerangka pedagogis kritis, serta kebijakan institusional yang mengatur batas dan standar penggunaan AI. Temuan ini diharapkan menjadi dasar konseptual bagi pengembangan praktik dan kebijakan pembelajaran Bahasa Indonesia berbasis AI yang bertanggung jawab.

Kata Kunci: Bahasa Indonesia; Kecerdasan Buatan; Pedagogi; Pembelajaran Bahasa; Teknologi Pendidikan

Abstract

The rapid development of artificial intelligence (AI) has significantly transformed educational practices, including Indonesian language learning. AI offers various pedagogical opportunities such as personalized learning, enhanced literacy skills, and continuous feedback, while simultaneously posing risks that may undermine the core values of language pedagogy. This study aims to critically analyze the pedagogical opportunities and risks of AI integration in Indonesian language learning. A *Systematic Literature Review* (SLR) was conducted following PRISMA guidelines, drawing on reputable scholarly articles related to AI, language pedagogy, and education within the Indonesian context. The findings indicate that AI can enrich Indonesian language learning when positioned as a supportive tool within a reflective pedagogical framework. However, risks such as students' cognitive dependency, decline in authentic language production, digital literacy gaps, and linguistic and cultural biases must be carefully addressed. This study concludes that the effectiveness of AI integration largely depends on teachers' pedagogical competence, critical instructional approaches, and institutional policies governing AI use. The results provide a conceptual foundation for developing responsible AI-based practices and policies in Indonesian language education.

Keywords: Artificial Intelligence; Indonesian Language Learning; Language Pedagogy; Educational Technology; Pedagogy

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Introduction

The rapid advancement of artificial intelligence (AI) over the past decade has emerged as one of the most transformative forces shaping contemporary educational practices worldwide. AI technologies have evolved beyond their initial roles in administrative automation and data processing to become deeply embedded in core learning processes through adaptive learning systems, intelligent tutoring systems, learning analytics, and generative AI applications capable of producing, revising, and evaluating academic texts. In many educational systems, AI is increasingly perceived as a strategic instrument to enhance learning efficiency, personalize instruction, and expand access to educational resources. Within the Indonesian educational landscape, this development aligns closely with national initiatives on digital transformation and innovation in education, which emphasize the integration of technology to improve learning quality and equity (Faresta, 2024; Fauziddin et al., 2025). Nevertheless, the rapid penetration of AI into classroom contexts also raises critical pedagogical questions, particularly regarding its implications for disciplines that rely heavily on meaning-making, discourse, and human interaction, such as language education.

Bahasa Indonesia learning occupies a unique position within the national education system, as it functions not only as a subject of linguistic instruction but also as a medium for developing critical literacy, cultural identity, and communicative competence. The pedagogical objectives of Bahasa Indonesia extend beyond grammatical accuracy or vocabulary mastery to encompass higher-order skills, including discourse comprehension, argumentation, contextual interpretation, and reflective language production. These competencies require learners to engage in complex cognitive processes such as analysis, evaluation, and metalinguistic awareness. As a result, the integration of AI into Bahasa Indonesia learning cannot be understood merely as a technical enhancement aimed at improving efficiency, but must be examined in relation to its potential impact on the cognitive, social, and cultural dimensions of language learning (Feriyanti, 2024; Apriliany, 2024).

In practice, AI technologies have begun to influence Bahasa Indonesia learning in various ways. Automated writing feedback tools are increasingly used to assist students in revising texts, improving sentence structure, and identifying linguistic errors. Chatbot-based applications support independent learning by providing explanations, examples, and interactive practice opportunities. In addition, corpus-based technologies and natural language processing tools enable learners to explore authentic language use across diverse genres and communicative contexts, while adaptive systems personalize learning materials based on students' proficiency levels and performance patterns (Sugianti & Rosidah, 2024; Wardani & Patindra, 2025). These applications demonstrate the pedagogical potential of AI to support differentiated learning, expand instructional resources, and provide continuous feedback that is often difficult to deliver in conventional classroom settings, particularly in contexts characterized by large class sizes.

Despite these opportunities, the growing use of AI in Bahasa Indonesia learning has also generated significant pedagogical concerns. One major issue relates to the risk of students' over-reliance on AI-generated outputs, particularly in writing activities. When AI is used primarily as an automatic text generator rather than as a reflective learning tool, students may become passive consumers of language rather than active producers of meaning. This condition risks weakening critical thinking, discourse planning, and linguistic creativity, which are central objectives of language education. Furthermore, the increasing delegation of instructional functions to AI systems raises concerns about the shifting role of teachers, potentially reducing their pedagogical authority and diminishing opportunities for meaningful teacher-student interaction.

The academic discourse surrounding AI in education is often characterized by strong technoptimistic narratives that emphasize innovation, efficiency, and performance improvement. While such perspectives highlight the transformative potential of AI, they frequently overlook pedagogical, ethical, and disciplinary considerations. In language education, this tendency risks narrowing the focus of learning to measurable outcomes and instant results, while marginalizing the reflective and dialogic processes through which language competence is developed. Several scholars have cautioned that uncritical adoption of AI may lead to superficial learning practices that prioritize correctness and speed over depth of understanding and critical engagement (Budi et al., 2024; Hasani, 2025).

Another challenge lies in the fragmentation of existing research on AI and language education. Studies on AI in education are often conducted from a general technological perspective, without sufficient attention to subject-specific pedagogical characteristics. Conversely, research on Bahasa Indonesia pedagogy tends to focus on instructional strategies and curriculum development without critically examining the implications of rapidly advancing AI technologies. This separation has resulted in a partial understanding of how AI affects Bahasa Indonesia learning, leaving important questions unanswered regarding the balance between pedagogical opportunities and risks, as well as the conditions under which AI can be integrated responsibly and effectively.

A number of empirical studies have explored AI use in Bahasa Indonesia learning from different angles. Feriyanti (2024) highlights the potential of AI in supporting independent language learning, while Apriliani (2024) discusses AI as an innovative instructional medium. Utami et al. (2023) examine Indonesian students' perceptions of AI-assisted academic writing and reveal ambivalent attitudes, with students recognizing efficiency benefits while expressing concerns about originality and authenticity. Wardani and Patindra (2025) focus on the pedagogical design of chatbot-assisted learning in Bahasa Indonesia and literature classes. Although these studies provide valuable insights, they are largely descriptive and stand alone, offering limited synthesis of how AI simultaneously creates pedagogical opportunities and risks within the specific context of Bahasa Indonesia learning.

The research gap becomes increasingly evident when considering the absence of comprehensive studies that systematically map the pedagogical implications of AI integration in Bahasa Indonesia learning. While several systematic literature reviews on AI in education exist at the global level, they tend to address general educational contexts and do not adequately consider the linguistic, cultural, and pedagogical specificity of national language education (Reina-Parrado et al., 2025). At the local level, studies are often fragmented and lack critical cross-study synthesis. As a result, there is limited conceptual guidance for educators and policymakers seeking to integrate AI into Bahasa Indonesia learning in a way that aligns with pedagogical objectives and ethical considerations.

The lack of a comprehensive synthesis has important implications for educational practice and policy. Without a clear understanding of both the opportunities and risks associated with AI integration, the adoption of AI in Bahasa Indonesia learning risks proceeding pragmatically, driven by technological availability rather than pedagogical rationale. Such an approach may inadvertently undermine the core objectives of language education, including the development of critical literacy, cultural awareness, and authentic communicative competence. Therefore, there is a pressing need for a study that critically examines existing research and provides a structured understanding of how AI influences Bahasa Indonesia learning processes and outcomes.

Based on this background, the present study aims to identify, analyze, and synthesize scholarly findings related to the integration of artificial intelligence in Bahasa Indonesia learning through a Systematic Literature Review approach. Specifically, this study examines the pedagogical opportunities offered by AI, such as personalization, feedback provision, and resource enrichment, while also analyzing the associated risks and implementation challenges, including cognitive dependency, decline in authentic language production, digital inequality, and potential linguistic and cultural bias. The novelty of this study lies in its integrative perspective, which positions Bahasa Indonesia as a specific pedagogical context and brings together insights from language pedagogy, linguistics, and educational technology. By doing so, this study seeks to provide a conceptual foundation for the development of critical, reflective, and responsible AI-based practices and policies in Bahasa Indonesia learning.

Method

This study employs a Systematic Literature Review approach to identify, evaluate, and systematically synthesize research findings related to the integration of artificial intelligence in Bahasa Indonesia learning. The SLR method is chosen because it enables researchers to obtain a comprehensive, transparent, and structured understanding of the development of studies on a given topic, while minimizing subjective bias in literature selection (Snyder, 2019). This approach is relevant given that studies on AI in Bahasa Indonesia learning are dispersed across various journals with diverse methodological focuses and perspectives. The SLR process follows the PRISMA guidelines. The identification stage was conducted through searches of reputable scientific databases such as Google Scholar and indexed national journals, using keywords including "artificial intelligence", "Bahasa Indonesia", "language learning", and "AI in education". Articles were then

screened based on inclusion criteria, namely reputable scientific journal articles with active DOIs, relevance to the context of language learning, and publication within the last ten years. Articles that were non scientific opinion pieces or did not explicitly address pedagogical implications were excluded from the analysis. In summary, the PRISMA flow in this study is as follows: Identification (n = 95 articles identified) → Screening (n = 62 articles after duplicate removal and title abstract screening) → Eligibility (n = 38 articles meeting substantive and methodological criteria) → Included (n = 25 articles analyzed in depth). The selected articles were analyzed using thematic synthesis to identify patterns of pedagogical opportunities, risks, and integrative implications of AI use in Bahasa Indonesia learning.

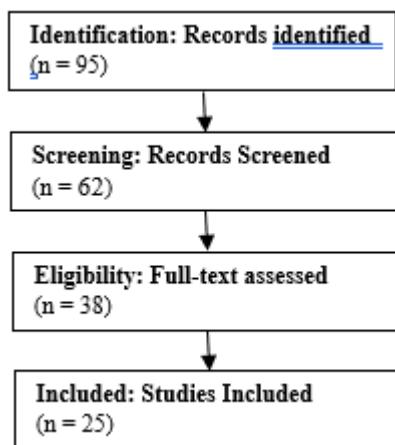


Figure 1. PRISMA Flowchart

Result and Discussion

Pedagogical Opportunities of Integrating Artificial Intelligence in Bahasa Indonesia Learning

The results of the literature synthesis indicate that the integration of artificial intelligence in Bahasa Indonesia learning opens significant pedagogical opportunities, particularly in addressing increasingly diverse and complex learning needs. One of the main opportunities most frequently discussed in the literature is the ability of AI to support the personalization of language learning based on students' needs, proficiency levels, and learning styles. AI based systems enable the delivery of adaptive materials, adjustment of text difficulty levels, and provision of feedback tailored to individual student performance (Faresta, 2024; Setiawan & Wibowo, 2025). In the context of Bahasa Indonesia, such personalization is relevant for accommodating differences in literacy competence, socio cultural background, and students' language abilities.

The use of AI also demonstrates substantial potential in the development of writing and critical reading skills. Several studies highlight the use of AI assisted writing tools to help students plan texts, improve sentence structure, and reflect on discourse coherence and cohesion (Utami et al., 2023; Apriliani, 2024). In Bahasa Indonesia learning, this function contributes to the enhancement of metalinguistic awareness, particularly when AI is used as a reflective tool that encourages students to reconsider their linguistic choices rather than merely serving as an automatic text generator. With appropriate pedagogical design, AI can function as cognitive scaffolding that strengthens the learning process. In addition, AI supports differentiated learning through the provision of continuous feedback that is difficult to achieve in conventional classrooms with large student numbers. AI systems are capable of providing instant responses to language exercises, such as reading comprehension, text structure analysis, and diction usage, thereby enabling students to engage in more intensive and independent learning opportunities (Sugianti & Rosidah, 2024). From a language pedagogy perspective, timely and contextual feedback plays a crucial role in accelerating the internalization of language competencies.

Another pedagogical opportunity lies in the potential of AI to enrich learning resources and authentic linguistic contexts. Corpus based technologies and natural language processing enable students to access examples of Bahasa Indonesia usage across a wide range of registers, genres, and communicative situations (Nugraha, 2025). This supports discourse and context based learning, which constitutes the core of modern Bahasa Indonesia pedagogy. Accordingly, AI can broaden students'

literacy horizons and connect classroom learning with real world language practices. Overall, the findings indicate that AI offers pedagogical opportunities that are aligned with the objectives of Bahasa Indonesia learning, particularly in terms of personalization, the strengthening of higher order literacy skills, and the expansion of learning resources. However, these opportunities are conditional and depend heavily on how AI is integrated into instructional design rather than on the technology itself.

Pedagogical Risks and Implementation Challenges of AI in Bahasa Indonesia Learning

In addition to the opportunities it offers, the literature also identifies several pedagogical risks accompanying the integration of AI in Bahasa Indonesia learning. The most prominent risk is the increasing dependence of students on AI, which has the potential to weaken independent thinking and linguistic creativity. Several studies indicate that the use of generative AI without pedagogical control may encourage students to rely on automated systems for text production, thereby reducing processes of critical thinking, discourse planning, and linguistic reflection (Utami et al., 2023; Wulandari & Purnamaningwulan, 2024).

Another frequently highlighted risk is the decline in authentic language production ability. Bahasa Indonesia as a subject emphasizes authenticity of expression, contextual sensitivity, and argumentative competence. When AI is used as an instant text generator, concerns arise that students may become consumers of language output rather than producers of meaning (Feriyanti, 2024). This condition risks shifting the objectives of Bahasa Indonesia learning from the language process toward merely achieving linguistically correct final products that lack reflection. Inequality in digital literacy and access to technology also constitutes a serious challenge in AI implementation. The literature indicates disparities in teachers' and students' abilities to understand, manage, and critically evaluate AI usage (Hasani, 2025; Dinata et al., 2025). In the Indonesian context, gaps in infrastructure and digital competence have the potential to widen disparities in the quality of Bahasa Indonesia learning across regions and institutions.

In addition, the risk of linguistic and cultural bias in AI systems represents an important concern. Many AI systems are developed based on global language data that do not fully represent the specific characteristics of Bahasa Indonesia, whether in terms of linguistic varieties, pragmatic norms, or cultural contexts (Budi et al., 2024). Such insensitivity may result in feedback or language examples that are not contextual, or even contradictory to the objectives of national language education. To summarize these main pedagogical risks, Table 1 presents a mapping of risks and their implications for Bahasa Indonesia learning.

Table 1. Pedagogical Risks of AI Integration in Indonesian Language Learning

Risk Dimension	Description	Pedagogical Implications
Cognitive Dependency	Over-reliance on AI-generated outputs	Reduced critical thinking and autonomy
Authentic Language Production	Automation of writing and text creation	Decline in originality and reflective language use
Digital Inequality	Unequal access and AI literacy	Widening learning gaps
Linguistic and Cultural Bias	AI not aligned with Indonesian language context	Misrepresentation of language norms
Teacher Readiness	Limited pedagogical control over AI use	Ineffective integration in classrooms

The table indicates that the risks of AI in Bahasa Indonesia learning are not only technical in nature, but also pedagogical and structural. Without a clear pedagogical framework, AI has the potential to shift the essence of language learning and weaken the role of teachers as guides of the learning process. Therefore, these risks emphasize the need for an integrative and critical approach to the use of AI, which will be further discussed in the section on pedagogical implications.

Pedagogical Implications and Integrative Strategies for the Use of AI in Bahasa Indonesia Learning

The pedagogical implications of integrating artificial intelligence in Bahasa Indonesia learning require a fundamental paradigm shift, particularly with regard to the role of teachers, instructional design, and the objectives of language education itself. The literature synthesis indicates that the presence of AI cannot be positioned as a substitute for pedagogical processes, but rather as a tool that must be consciously controlled within a reflective and critical pedagogical framework (Ren & Wu, 2025; Fauzi et al., 2025). In this context, the role of Bahasa Indonesia teachers is redefined from mere transmitters of content to facilitators, curators of learning resources, and ethical regulators of technology use in the classroom.

Teachers hold a central role in determining how AI is used and for what pedagogical purposes. The literature emphasizes that without adequate pedagogical mastery, the use of AI risks leading to shallow learning practices oriented toward instant outcomes (Hasani, 2025). Conversely, when teachers are able to integrate AI consciously, this technology can be utilized to strengthen higher order thinking processes, such as discourse analysis, linguistic reflection, and critical evaluation of texts. Thus, teachers' pedagogical competence becomes the primary determinant of the effectiveness of AI in Bahasa Indonesia learning, rather than the sophistication of the technology itself.

Another implication relates to the need to integrate AI based on the principles of critical pedagogy and educational ethics. Bahasa Indonesia pedagogy is inherently linked to the formation of critical awareness, linguistic identity, and national values. Therefore, the use of AI must be directed to support these objectives, rather than negating the reflective and dialogic processes that lie at the core of language learning. Several studies emphasize the importance of framing AI as an object of critical learning, in which students are invited to analyze the limitations, biases, and ethical implications of AI use in language production (Akbar et al., 2025; Alotaibi & Alshehri, 2023). This approach enables AI not only to be used, but also to be critically understood by learners. Within the framework of critical pedagogy, AI can be utilized as a means to discuss broader linguistic and social issues, such as language representation, power in digital discourse, and the relationship between technology and culture. Accordingly, Bahasa Indonesia learning is not reduced to AI based technical exercises, but continues to function as a space for the development of critical literacy and social awareness. This aligns with the view that educational technology must be situated within the context of educational values and purposes, rather than treated as a neutral entity free from ideological implications (Reina-Parrado et al., 2025).

Integrative strategies for the use of AI also have implications for the development of a Bahasa Indonesia curriculum that is adaptive to technological advancement. The literature indicates that a curriculum responsive to AI does not imply inserting technology in an ad hoc manner, but rather designing learning outcomes, materials, and assessments that explicitly regulate the role of AI in the learning process (Budi et al., 2024; Fauzi et al., 2025). In this context, AI can be positioned as a supporting tool at certain stages, such as idea exploration, analysis of text examples, or initial feedback, while final production and reflection remain the responsibility of students.

The development of an adaptive curriculum also requires clear boundaries regarding the use of AI in Bahasa Indonesia learning. Without clear limits, the use of AI may obscure authentic assessment of students' language abilities. Therefore, several studies recommend the application of the principle of pedagogical alignment, namely alignment between learning objectives, AI based activities, and evaluation methods (Setiawan & Wibowo, 2025). This principle ensures that AI is used to strengthen, rather than replace, the core competencies targeted in language learning. Another strategic implication is the need for institutional policies regulating the use of AI in learning. The literature emphasizes that without clear regulations and guidelines at the school or educational institution level, the use of AI tends to be sporadic and dependent on individual teacher initiatives (Akbar et al., 2025). Institutional policies are necessary to establish ethical standards, usage boundaries, and mechanisms for teacher capacity development. In the Indonesian context, such policies must also consider infrastructure gaps and digital literacy disparities so that AI integration does not exacerbate educational inequality.

Overall, the pedagogical implications and integrative strategies identified in the literature indicate that the success of AI integration in Bahasa Indonesia learning is highly dependent on the underlying pedagogical framework. AI can become a significant pedagogical opportunity when positioned as a support tool that is critically controlled, but it can turn into a serious risk if used without pedagogical reflection and adequate regulation. Therefore, an integrative approach that

combines teacher competence, critical pedagogy, adaptive curriculum design, and institutional policy constitutes a key prerequisite for responsible AI utilization in Bahasa Indonesia learning.

Conclusion

The integration of artificial intelligence in Bahasa Indonesia learning offers significant pedagogical opportunities, particularly in learning personalization, the strengthening of higher order literacy skills, and the expansion of linguistic learning resources. However, the results of this systematic literature review indicate that these opportunities are accompanied by various pedagogical risks, such as students' cognitive dependence, decline in authentic language production, digital literacy inequality, and potential linguistic and cultural bias in AI systems. These findings affirm that the effectiveness of AI is not determined by the technology itself, but by the pedagogical approach that underlies its use.

This study affirms that AI must be positioned as a tool that supports pedagogical processes, rather than as a substitute for the teacher's role or the core learning processes of Bahasa Indonesia. Teachers have a strategic role as facilitators, ethical regulators, and guides in the use of AI to ensure alignment with language learning objectives that emphasize critical thinking, reflection, and contextual sensitivity. Theoretically, this study contributes to strengthening integrative research between language pedagogy, linguistics, and educational technology by positioning Bahasa Indonesia as a specific context of analysis.

Based on these findings, it is recommended that the development of AI based policies and practices in Bahasa Indonesia learning be conducted cautiously and grounded in the principles of critical pedagogy. Educational institutions need to formulate clear guidelines for AI use, strengthen teachers' pedagogical competence, and develop adaptive curricula that regulate the boundaries and functions of AI in learning. Future research is recommended to examine the empirical implementation of integrative AI strategies across different educational levels and contexts in order to enrich evidence on best practices for the use of AI in Bahasa Indonesia learning.

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Conflict Of Interest Statement

The author declares no conflict of interest in the preparation of this work.

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