THE TRANSFORMATION OF INDONESIAN LANGUAGE PEDAGOGY IN THE AI ERA: OPPORTUNITIES, RISKS, AND IMPLEMENTATION MODELS

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ABSTRACT

The rapid development of artificial intelligence (AI) in recent years has brought significant changes to educational practices, including the teaching and learning of the Indonesian language. Technologies such as chatbots, automated writing evaluation systems, and grammar-checking tools offer new opportunities for teachers and students to enhance language skills in a more interactive and personalized manner. This study aims to explain the opportunities that can be harnessed from the use of AI in Indonesian language learning, identify potential risks arising from technological dependence, and formulate a simple and practical pedagogical implementation model that can be applied by teachers in the classroom. The method employed is a descriptive literature review, examining various relevant studies and scholarly sources published over the past ten years. The findings indicate that AI has the potential to improve learning effectiveness, particularly in writing skills, by providing rapid feedback and supporting the development of digital literacy. However, risks such as a decline in students' originality, potential plagiarism, and teachers' limited readiness to effectively utilize technology were also identified. This study concludes that AI integration in Indonesian language learning should be guided by a structured and ethical pedagogical model that positions AI as a supportive tool rather than a substitute for students' language competence.

Keywords : *Artificial Intelligence, Indonesian Language Pedagogy, Language Learning, Educational Innovation*

INTRODUCTION

Indonesian language learning across educational levels faces a number of significant challenges. One of the most critical issues is students' low reading and writing literacy skills. The OECD reported that Indonesian students' reading literacy score in the 2022 Programme for International Student Assessment (PISA) survey reached only 359 points, which is considered low compared to the global average (Pristiandaru, 2023)). This indicates that many students have not yet attained an adequate level of literacy to comprehend complex texts or to critically integrate information (Febriani Sya et al., 2025).

These challenges are further exacerbated by instructional practices that remain predominantly teacher-centered and make limited use of contemporary literacy strategies, thereby failing to optimally foster higher-order reading and writing skills. This concern aligns with the study *Literacy Activities in Teacher Learning Planning for Indonesian Language Subjects in Middle Schools*, which emphasizes the need for teachers to systematically plan literacy activities in Indonesian language instruction as a response to modern literacy challenges (Adi et al., 2025)). Such conditions highlight the urgent need for new pedagogical approaches that are more responsive to the demands of the current era.

In the digital age, artificial intelligence (AI) offers opportunities to enhance the quality of Indonesian language learning through features such as automated feedback, personalized learning pathways, and the reinforcement of digital literacy. However, its implementation must also consider potential risks, including technological dependence and a decline in students' originality (Apriliani, 2024; Dewi, 2025; Tristianto et al., 2025). Therefore, examining the opportunities, risks, and implementation models of AI in Indonesian language pedagogy has become increasingly relevant.

Over the past decade, the integration of artificial intelligence has gradually penetrated the Indonesian education sector, from primary education to higher education, through the adoption of various digital platforms and tools. Recent studies indicate that AI can enhance learning efficiency and effectiveness, expand access to learning resources, and support the personalization of instructional materials according to students' needs (Yulianti, 2023). In the context of language learning, AI offers promising prospects for adaptive content delivery, automated assessment, and technology-mediated interactions that support digital literacy development (Budi et al., 2024). Nevertheless, several studies caution against potential risks such as overreliance on technology, reduced originality of students' work, ethical challenges, and the need for adequate digital literacy among both teachers and students to ensure optimal use of AI (Palma, 2025). Thus, investigating AI opportunities, risks, and implementation models in Indonesian language learning is essential to addressing current challenges while capitalizing on digital opportunities.

Understanding pedagogical change has become increasingly urgent as digital technologies—including AI—have transformed how educators, learners, and institutions interact in the learning process. Learning is no longer anchored solely in lecture-based and linear classroom activities; instead, it demands more flexible, collaborative, and student-centered approaches. Research demonstrates that technology-driven pedagogical transformation can enhance student engagement, facilitate self-directed learning, and strengthen 21st-century competencies such as critical thinking, problem-solving, and digital literacy (Zawacki-Richter et al., 2019; Holmes et al., 2019; Voogt & Roblin, 2012; Chen et al., 2020).

At the same time, the emergence of AI tools requires educators to redefine their

pedagogical roles—not merely as transmitters of knowledge, but as facilitators, curators of learning resources, and ethical guides in the use of AI in the classroom. Recent systematic reviews reveal that AI integration in education significantly influences instructional design, teacher–student interaction patterns, and learning evaluation processes, which are becoming increasingly automated and adaptive (Holmes, Maya Bialik, et al., 2019). This underscores the importance of understanding pedagogical transformation so that learning practices do not merely follow technological trends but remain aligned with curricular objectives, literacy development, and students' cognitive growth. Consequently, understanding pedagogical change is no longer optional but a strategic necessity to ensure that AI-based educational innovations are effective, ethical, and impactful for the quality of Indonesian language learning.

Despite the rapid growth of literature on AI in education, there remains a lack of empirical studies that examine AI interventions in context-specific Indonesian language learning, teacher readiness, linguistic bias toward local language varieties, and the long-term impact on students' writing quality and originality (Hamzah et al., 2025; Sukini et al., 2025). This gap indicates the need for context-based research in Indonesia to produce pedagogical recommendations that are more relevant, measurable, and aligned with the characteristics of the Indonesian language and national instructional practices.

The integration of artificial intelligence in Indonesian language learning is also aligned with the direction of national education reform as embodied in the *Merdeka Curriculum*. This curriculum provides flexibility and autonomy for educators to design contextual, student-centered learning experiences, including the use of digital media and technologies to support differentiation and digital literacy (Anggraini, 2025; Dewi, 2025). Moreover, AI-based solutions such as generative chatbots demonstrate potential to enrich language learning practices through personalized interaction, adaptive feedback, and increased student engagement (Hakim, 2025). Therefore, AI integration should be viewed as part of pedagogical innovation that aligns with the objectives of the *Merdeka Curriculum* and the demands of 21st-century learning.

The School Literacy Movement (*Gerakan Literasi Sekolah*—GLS) represents a national literacy policy aimed at improving reading skills, text comprehension, and the production of quality writing as foundational competencies for students. Research shows that effective implementation of GLS significantly enhances elementary students' reading abilities, including reading comprehension as a foundation for advanced literacy development (Lestari & Astuti, 2023). Additionally, GLS contributes to increased reading interest and the development of critical thinking skills—two components consistent with modern literacy concepts that extend beyond decoding to include interpreting, evaluating, and reflecting on texts (Puspitariningsih & Laili, 2023; Aryani & Hadi, 2025). Thus, GLS provides a robust literacy ecosystem in schools through reading habituation, enrichment of relevant reading materials, and structured literacy practices that support national education policy goals.

Literature reviews indicate that AI can support adaptive learning, content personalization, and automated feedback that enhance 21st-century skills such as critical thinking and collaboration. However, challenges related to ethics, algorithmic bias, digital literacy, and pedagogical readiness remain substantial and require further investigation (Efendi et al., 2025; Purnama et al., 2025; Usman et al., 2025). Furthermore, the long-term impact of AI utilization on Indonesian language learning outcomes—particularly reading, writing, and critical thinking skills—has not been comprehensively addressed in prior research. Therefore, this study is crucial in providing systematic and empirical insights, as well as proposing an effective, ethical, and

contextual AI implementation model for Indonesian language learning in the digital era, where digital literacy has become an essential competence.

This study aims to identify opportunities for AI utilization in Indonesian language learning, analyze the associated risks, and formulate an implementation model relevant to teachers' instructional practices. Theoretically, this research contributes to the discourse on technology integration in language pedagogy by mapping aspects of digital literacy, personalized learning, and AI-based instructional design. Practically, it offers actionable recommendations for classroom application to help educators leverage AI effectively while mitigating risks such as algorithmic bias and technological dependence, thereby bridging the gap between academic discourse and the practical needs of educational institutions.

METHOD

1. Population and Sampling Method

The population of this study includes lecturers, teachers, and students involved in digitally mediated Indonesian language learning, particularly those with experience interacting with AI-based tools. The sampling technique employed was purposive sampling, in which participants were selected based on their relevance and capacity to provide in-depth data on the use of AI in pedagogical contexts (Asrulla et al., 2023). The determination of the number of participants followed the principle of data saturation, whereby data collection was discontinued once no new or significant information emerged (Bouncken et al., 2025). This approach ensured that the data obtained were rich, contextual, and aligned with the research objectives. Rather than pursuing statistical representativeness, purposive sampling enabled the study to capture diverse experiences related to AI use in Indonesian language learning.

Table 1. Criteria for Qualitative Research Samples

No.	Group	Sampling Criteria (Purposive)	Rationale	Number
1	Senior High School Indonesian Language Teachers	Experience using AI tools (e.g., ChatGPT, Quillbot, Grammarly) for writing tasks or assessment	Understanding AI utilization in advanced literacy instruction	2
2	Junior High School Indonesian Language Teachers	Use or familiarity with educational AI applications or automated features in instruction	Representing AI integration at the secondary level	2
3	Indonesian Language Lecturers	Integration of AI in teaching, assessment, or research	Providing academic and theoretical perspectives	3
4	First-Year University Students	Use of AI for writing tasks, summarization, or reference searching	Indicating AI impact on foundational literacy skills	5

5	Final-Year University Students	Use of AI in thesis writing or other academic works	Examining AI impact on advanced academic outputs	5
		Total		17

2. Instrumentation

Table 2. Indicators of the Impact and Challenges of Academic AI Use

No	Indicator	Aspect	*Instruments*
A	Opportunities of AI in Indonesian Language Pedagogy	1) General perceptions of academic AI use 2) Impact on the effectiveness of Indonesian language learning 3) AI utilization in classroom practices and interactions	Observation sheets, semi-structured interviews, documentation
B	Risks and Challenges 1) Risks of academic AI use	1) Learning effectiveness in Indonesian language education (Safitri et al., 2025; Dewantara & Dewi, 2025) 2) AI utilization in instructional practices (IJMST, 2025; Azahar et al., 2025) 3) Academic originality and ethics (Dewantara & Dewi, 2025)	
	2) Challenges in academic AI use	1) Teacher interaction and pedagogical roles (Astuti et al., 2025; UNESCO, 2023) 2) Academic application and institutional needs (MDPI, 2025; Fatmadiwi et al., 2025) 3) Digital competence readiness and inequality (MDPI, 2025; Chiu, 2024) 4) Regulation, infrastructure, and sustainability (UNESCO, 2023; OECD, 2024)	
C	Integrated Implementation Models	1) Human-in-the-Loop Model (Holmes et al., 2019; Floridi et al., 2018) 2) Ethical Governance Model (Zawacki-Richter et al., 2019) 3) Academic Integrity–Aligned AI Model (Bretag et al., 2019)	

The primary instruments in this qualitative study were semi-structured interview guidelines and observation sheets designed to explore participants' experiences, perceptions, and practices related to AI use in Indonesian language learning. Documentation such as records of learning activities and students' written products—was also analyzed to trace patterns of AI utilization. Instrument validity was strengthened through expert review and readability testing, while data

consistency was ensured through source triangulation (Carter, Bryant-Lukosius, Dicenso, et al., 2014). The semi-structured format allowed flexibility to adapt interview flows to participants' contexts while maintaining analytical focus (Kallio et al., 2016).

3. Research Procedures and Timeline

The research procedures were conducted through three systematic stages: (1) pre-field preparation, (2) data collection, and (3) data analysis and conclusion drawing. During the pre-field stage, the research context was established, participants were identified through purposive sampling, and research instruments were developed. Instrument validation was conducted qualitatively through expert judgment and contextual alignment checks, consistent with recommendations for qualitative instrument development (Kallio et al., 2016). Data collection involved semi-structured interviews lasting 30–45 minutes, classroom observations across one to two instructional sessions, and documentation analysis of learning records and students' written products. All interviews were audio-recorded and transcribed verbatim following ethical consent from participants. These procedures adhered to the principles of flexibility and depth characteristic of qualitative research (Nowell et al., 2017a). The analysis stage followed a thematic analysis framework developed by Braun and Clarke, encompassing data familiarization, initial coding, theme development, theme review, and final interpretation. Trustworthiness was reinforced through source triangulation and audit trail examination (Carter, Bryant-Lukosius, Dicenso, et al., 2014). Overall, the study was conducted over 8–10 weeks, including two weeks of preparation, four weeks of data collection, and two to four weeks of analysis and thematic verification.

4. Data Analysis

Data analysis employed a reflexive thematic analysis approach to identify patterns of meaning related to AI opportunities, risks, and implementation models in Indonesian language learning. The analysis followed six systematic phases: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report (Braun & Clarke, 2019). Analysis was conducted manually and supported by qualitative data analysis software (NVivo) to organize codes and themes systematically. Coding was iterative and reflective, allowing openness to emerging insights. Analytical rigor was ensured through peer debriefing, member checking, and data source triangulation to maintain trustworthiness (Nowell et al., 2017b; Carter et al., 2014) Research reflexivity was maintained by documenting analytical decisions through an audit trail, enabling transparency and methodological reliability. This approach facilitated in-depth interpretation of teachers' and students' experiences with AI and supported the development of empirically grounded and context-sensitive implementation models.

5. Validity and Reliability (Trustworthiness)

To ensure trustworthiness, four key criteria were applied. First, credibility was established through triangulation across data sources, time, and techniques, as well as member checking to verify the accuracy of interpretations. Second, transferability was addressed by providing rich contextual descriptions of social, cultural, and instructional settings. Third, dependability was ensured through comprehensive documentation of the research process via an audit trail. Fourth, confirmability was maintained through peer discussions, researcher reflexivity, and systematic data comparison to minimize personal bias (Korstjens & Moser, 2018; Mekarisce, 2020).

6. Assumptions

This study was based on several methodological assumptions: participants provided honest and experience-based data; purposive sampling adequately represented contextual variation for in-

depth analysis rather than generalization; AI usage conditions in schools and universities remained relatively stable during data collection; thematic saturation could be achieved through interviews and documentation; and researcher bias could be minimized through reflexivity and audit trails. Additionally, the reliability of digital data and clarity of participants' linguistic expressions were assumed to support interpretive validity (Nowell et al., 2017b; Creswell & Poth, 2018).

7. Scope and Methodological Limitations

This study adopted a descriptive qualitative approach utilizing purposive sampling, semi-structured interviews, observations, and documentation. The scope was limited to senior and junior high school Indonesian language teachers, Indonesian language lecturers, and first-year and final-year university students engaged in AI-based learning. While this approach enabled in-depth analysis of perceptions, experiences, and pedagogical practices related to AI, it also presents several limitations. First, the findings are context-specific and cannot be statistically generalized to broader populations. Second, data quality depends heavily on participants' openness and the researcher's ability to maintain reflexivity and objectivity. Third, the study focuses on specific AI interaction contexts, which may not fully capture variations in AI use across different educational institutions. Finally, time and resource constraints limited the number of observation and interview sessions. Acknowledging these limitations enhances methodological transparency and helps readers interpret the scope and applicability of the findings (Nowell et al., 2017a).

RESULTS AND DISCUSSIONS

1. Results

a) Opportunities of AI in Indonesian Language Pedagogy

1) General Perceptions of Academic AI Use

Based on classroom observations and university teaching activities, senior high school teachers, junior high school teachers, Indonesian language lecturers, and students demonstrated generally positive perceptions of academic AI use. In several instructional sessions, teachers explicitly referred to AI as *"a realistic supporting tool for current classroom conditions."* One senior high school teacher stated, *"AI is not meant to replace me, but to assist with technical work."* Similarly, a junior high school teacher noted that *"as long as AI is used in a guided manner, students actually become more focused on learning."*

At the university level, lecturers emphasized the role of AI as a supporting tool rather than a substitute for academic work. One lecturer remarked, *"We introduce AI as an academic tool, not as a writing machine."* Observed students also expressed openness toward AI use; one student commented, *"AI feels like an initial discussion partner before we start working on assignments."* These observations indicate that AI is perceived as an assistive and acceptable tool within the context of Indonesian language learning.

Findings from semi-structured interviews further revealed that senior and junior high school teachers, as well as Indonesian language lecturers, generally viewed AI as an assistive pedagogical tool that enhances instructional efficiency. Many participants highlighted that AI has transformed how they provide feedback and guide students' literacy activities. One senior high school teacher stated, *"AI is very helpful for providing initial feedback; I no longer spend hours checking basic errors such as spelling, discourse markers, and sentence structure."* Similarly, a junior high school teacher explained that *"AI makes the process of correcting students' writing much faster."* Several teachers even described AI as *"a tireless assistant that helps identify minor*

errors," which traditionally consumed considerable instructional time.

At the higher education level, Indonesian language lecturers regarded AI as a complementary instrument that enriches academic learning strategies. One lecturer emphasized that *"AI helps students recognize patterns of academic writing, but ethical control is still necessary so that they do not treat AI as the main writer."* Another lecturer highlighted AI's relevance to digital literacy competencies, stating, *"Students now need to learn not only how to write, but also how to evaluate the quality of AI-generated outputs."* First-year students acknowledged that AI helped structure their thinking; one student noted, *"AI provides examples of coherent paragraphs, so I can compare them with my own writing."* Meanwhile, final-year students emphasized AI's role in research-related activities, with one participant stating, *"I use AI mainly for brainstorming, not for writing the final assignment."*

Analysis of instructional documentation showed that senior high school teachers, junior high school teachers, and lecturers consistently positioned AI as an assistive academic tool supporting the learning process. This was evident in lesson plans and teaching modules that explicitly listed AI as *"a writing revision tool"* and *"a medium for supporting digital literacy."* One senior high school lesson plan stated that *"AI is used to help students identify language errors before teacher evaluation."* A junior high school document emphasized that *"AI utilization is directed toward enhancing students' independent learning."* At the university level, syllabi for Academic Indonesian Language courses included notes indicating that *"AI is used for initial exploration rather than as a replacement for critical thinking."* These documents suggest that, conceptually, AI has been accepted as part of the learning ecosystem.

2) Impact on the Effectiveness of Indonesian Language Learning

Observational findings indicated that AI use contributed to improved learning effectiveness, particularly in reading and writing activities. In senior high school classrooms, students completed initial writing drafts more quickly when AI was used as a revision aid. Teachers noted that *"class time can be shifted from correcting basic errors to discussing content."* In junior high school classrooms, observations recorded that *"students understand sentence errors more quickly because they immediately see examples of revisions."* In university courses, lecturers emphasized that *"AI helps students grasp academic writing structures more concretely."* First-year students remarked, *"We can identify which parts of our writing are illogical."* Overall, AI accelerated the learning process without diminishing the pedagogical role of teachers.

Senior and junior high school teachers reported that AI use enhanced the readability and quality of students' revised writing. One teacher stated that *"AI helps students quickly identify weaknesses in their writing, especially coherence."* Another teacher added that *"AI provides revision examples that students can immediately imitate, making remedial instruction more effective."* From a motivational perspective, a senior high school teacher observed that *"students appear more confident when they receive automated feedback before my further evaluation."* Others noted changes in classroom dynamics, such as *"writing classes becoming more lively because students can see their revisions improve instantly."* These findings suggest that AI integration influences not only teaching techniques but also pedagogical interactions.

Comparisons of students' and university students' assignments before and after AI use revealed improvements in writing quality, particularly in paragraph structure, idea coherence, and spelling accuracy. Senior high school teachers' reflective notes indicated that *"students' post-AI revisions appear neater and more systematic."* Junior high school teachers reported that *"AI helps students recognize recurring sentence errors."* Lecturer evaluation documents noted that

"students reach minimum academic writing standards more quickly." One student reflected, *"AI helped me understand how a good writing flow works."* These documentary findings demonstrate AI's contribution to the efficiency and effectiveness of Indonesian language learning.

Documentation also revealed shifts in teachers' instructional roles. Senior high school teachers noted that *"the teacher's role has shifted from technical corrector to discussion facilitator."* Junior high school teachers observed that *"AI allows teachers to focus more on content and creativity."* At the university level, lecturers reported that *"class discussions have become more analytical because students compare their writing with AI outputs."* Students also noted that *"AI feedback triggers follow-up questions to lecturers."* These findings indicate that AI strengthens reflective and interactive academic engagement.

3) AI Utilization in Classroom Practices and Interactions

Classroom observations showed that AI was used in various learning activities, including drafting texts, text analysis, and paraphrasing exercises. In one senior high school session, students were asked to compare AI-generated summaries with manually written ones, prompting active discussion. The teacher commented that *"students become more confident in critiquing AI outputs."* In junior high school classrooms, AI was used for paragraph construction exercises, with teachers noting that *"students feel more confident writing."* At the university level, lecturers employed AI as a demonstration tool while emphasizing that *"AI outputs must be tested, not accepted uncritically."* Students actively participated, stating, *"We discuss whether AI suggestions fit the context."* These findings indicate that AI enhances cognitive interaction quality in learning.

Observational data further showed that AI influenced activity-based learning, particularly in reading and writing tasks. In one senior high school class, comparing AI-generated and manual summaries resulted in higher cognitive engagement. The teacher noted that *"discussions became more critical because students questioned whether AI was correct."* Other observations revealed that *"students appeared more enthusiastic when producing initial drafts, as AI gave them confidence to experiment without fear of making mistakes."* In junior high school classrooms, teachers observed that *"AI helps students understand how to create effective transition sentences."* Additionally, AI encouraged collaboration; one teacher remarked that *"students often discuss whether AI suggestions make sense."* These interactions suggest that AI serves as a catalyst for critical discussion rather than replacing learning processes.

From an interactional perspective, observations revealed that AI altered classroom communication patterns toward more dialogic engagement. Senior high school teachers stated that *"class discussions are more dynamic because there is an AI-based point of comparison."* Junior high school teachers observed that *"students ask more questions after seeing AI outputs."* In university contexts, lecturers noted that *"AI triggers critical questions about text validity."* Final-year students commented, *"AI makes us more aware of word choice and source selection."* These interactions demonstrate that AI does not diminish human roles but instead reinforces academic dialogue and reflection.

Documentary analysis of pre-AI and post-AI writing drafts showed improvements in coherence, idea alignment, and punctuation use. One teacher noted that *"students' writing becomes more organized after AI-based revisions, especially in argumentative paragraphs."* Another document indicated that *"AI helps students identify recurring error patterns."* However, concerns regarding originality were also documented. One lecturer noted that *"some students' language styles become uniform due to following AI suggestions."* This was supported by other records indicating that *"AI provides overly polished sentence patterns, causing writing to lose personal*

character." Nevertheless, instructional artifacts such as AI integration guidelines demonstrated increasingly systematic use within learning design. One teacher emphasized, *"The key is guiding students so that AI becomes a learning tool, not a substitute for reasoning."*

Documentation further revealed diverse forms of AI utilization in instructional practice. Senior high school modules included instructions such as *"input the initial paragraph into AI to obtain revision suggestions."* Junior high school materials guided students to *"compare their own writing with AI recommendations."* University syllabi included assignments requiring *"critical analysis of AI-generated outputs."* Student assignments showed AI use for *"idea brainstorming," "outline development,"* and *"language refinement."* One lecturer noted that *"AI functions as a simulation tool for academic writing."* These findings indicate that AI is integrated across multiple learning stages rather than used in isolation.

Despite many positive findings, documentation also highlighted several challenges. Teacher evaluation notes indicated that *"some students tend to copy AI suggestions without modification."* Lecturers reported *"a tendency toward uniform writing styles in some student assignments."* One student admitted in a reflection that *"AI sometimes makes me think less independently."* Nevertheless, teacher guidelines emphasized the importance of pedagogical control, stating that *"AI must be used critically and ethically."* Other documents reinforced that *"successful AI use depends on clear instructional design."* Overall, the findings suggest that AI integration in Indonesian language learning holds substantial potential when balanced with adequate supervision and pedagogical guidance.

b) Risks and Challenges

1) The Impact of Risks in the Use of Academic AI

On the Effectiveness of Indonesian Language Learning

Based on classroom and lecture observations, several risks associated with the use of AI were identified in relation to the effectiveness of Indonesian language learning, particularly regarding depth of understanding and students' cognitive processes. In several senior high school classrooms, students were observed relying directly on AI to produce initial drafts without independently exploring ideas. One senior high school teacher noted that "students finish faster, but the discussion becomes shallow." Similarly, a junior high school teacher observed that "AI makes students skip the process of trial and error." In Indonesian language courses at the university level, lecturers reported that "students tend to focus on the final product rather than the thinking process." Students themselves acknowledged that "AI helps us work quickly, but we end up reading the texts less deeply." These observations indicate that while AI improves efficiency, it also poses a risk of diminishing learning quality if not balanced with appropriate pedagogical strategies.

Thematic analysis of interview data using NVivo identified reduced cognitive depth and functional dependency as the primary risks affecting learning effectiveness. A senior high school teacher stated that "students complete tasks quickly, but their thinking process becomes superficial." A junior high school teacher explained that "AI allows students to bypass the struggle of understanding texts." An Indonesian language lecturer emphasized that "efficiency does not always equal understanding." First-year university students admitted that "we tend to focus on outcomes rather than the process," while senior students acknowledged that "AI sometimes replaces the initial thinking process we should engage in ourselves." These findings suggest that AI may undermine learning quality when efficiency is not supported by reflective pedagogical design.

Analysis of instructional documentation further reveals that teachers and lecturers are generally aware of the potential risks of academic AI use, despite recognizing its benefits. A senior high school teacher's reflective notes stated that "AI is helpful, but it risks reducing students' independent thinking." A junior high school teacher expressed similar concerns, noting that "without supervision, students tend to accept AI outputs uncritically." In university evaluation documents, lecturers observed that "AI may shift thinking processes into mere verification of machine-generated results." Students also reflected on these risks; one student wrote that "AI provides answers too easily, so we need to learn self-restraint." These documents indicate an emerging awareness of the pedagogical dilemmas accompanying AI integration.

Task documentation and evaluation reports suggest that unregulated AI use may distort learning effectiveness. A senior high school teacher noted that "some students' writing appears too polished but lacks substantive ideas." A junior high school teacher reported that "AI helps with structure, but content often remains underdeveloped." In lecturers' feedback documents, it was stated that "students demonstrate technical improvement, but not necessarily stronger critical arguments." One student reflected that "my writing looks better, but I do not fully understand its content." These findings affirm that learning effectiveness may be compromised when AI is used excessively or without reflective engagement.

On the Use of AI in Instructional Practices

Further observations indicate that AI use in instructional practice may lead to technological dependency and altered classroom dynamics. In several learning sessions, students were seen interacting more frequently with devices than with peers or teachers. A senior high school teacher remarked that "students open AI tools before asking questions." A junior high school teacher stated that "AI becomes an overly convenient shortcut." An Indonesian language lecturer observed that "the lecturer's role may be reduced if AI use is not regulated." First-year university students admitted that "we often follow AI suggestions without double-checking," while senior students noted that "AI can replace classroom discussion if it is not properly guided." These findings highlight the need for pedagogical control to prevent AI from dominating instructional practices.

Another thematic category emerging from interview data is technological dependency and the reduction of pedagogical roles. A senior high school teacher observed that "some students consult AI before trying on their own." A junior high school teacher reiterated that "AI becomes an excessively easy shortcut." Indonesian language lecturers expressed concern that "academic authority may weaken if AI is not controlled." First-year students admitted that "AI makes us less motivated to verify information," while senior students warned that "without clear rules, AI may replace classroom discussion." This pattern suggests that unrestricted AI use can shift learning practices from dialogic processes to mechanistic routines.

Instructional documentation further indicates that dependency is the main challenge in AI-assisted learning. A junior high school teacher's module noted that "students often ask AI to revise their writing without attempting revisions themselves." A senior high school teacher wrote in a reflective journal that "AI can reduce the trial-and-error process that is essential in learning to write." In course syllabi, lecturers included warnings that "unrestricted AI use risks blurring the boundary between assistance and plagiarism." Students also noted in reflective reports that "AI makes us forget to recheck sources and logical coherence." These findings underscore the need for clear regulations governing AI use in instructional activities.

On Originality and Academic Ethics

Issues of originality and academic ethics emerged as significant risks in observational data. In several written assignments, similarities in language style and sentence structure were identified across students' work. A senior high school teacher stated that "students' writing styles have become similar." A junior high school teacher added that "it is difficult to distinguish original writing from AI-assisted output." An Indonesian language lecturer emphasized that "AI opens the door to subtle forms of plagiarism." First-year students expressed ethical uncertainty, stating that "we are confused—this feels like help, but also like copying." Senior students also noted that "the ethical boundaries of AI use remain unclear." These observations indicate that without explicit ethical guidelines, AI may blur academic integrity and authorial identity in Indonesian language learning.

NVivo analysis further identified originality and academic ethics as dominant risk categories. A junior high school teacher observed that "students' writing becomes increasingly similar after using AI." A senior high school teacher confirmed that "it is difficult to distinguish students' own thinking from AI-generated suggestions." Indonesian language lecturers expressed concern that "AI enables more subtle forms of plagiarism." First-year students admitted confusion regarding ethical boundaries, while senior students stated that "AI blurs academic ethical lines." Another lecturer emphasized that "without AI ethics literacy, students are vulnerable to dependency." Overall, interview findings suggest that AI-related risks are not merely technical but also affect fundamental aspects of Indonesian language education, including critical thinking, originality, and academic integrity.

Documentation of assignments and assessment reports further demonstrates that originality is the most prominent challenge. Senior high school teachers noted that "students' language styles become uniform after AI use," while junior high school teachers reported that "some assignments are difficult to distinguish from one another." Indonesian language lecturers emphasized that "AI increases the risk of hidden plagiarism." Students acknowledged in reflections that "the boundary between assistance and copying becomes blurred." Consequently, several instructional documents have begun to include explicit rules, such as "AI may be used for revision purposes, not for writing entire texts." This indicates growing ethical awareness in responding to AI-related challenges.

Based on observations, interviews, and documentation analysis, this study concludes that academic AI use presents significant opportunities for strengthening Indonesian language pedagogy at junior high school, senior high school, and higher education levels. Teachers and lecturers generally perceive AI as a realistic and relevant assistive tool, while students position AI as an initial partner in thinking and writing processes. This positive perception confirms that AI is increasingly accepted as part of the learning ecosystem—not as a threat to educators' roles, but as a supportive instrument that can enhance efficiency and instructional quality.

In terms of learning effectiveness, AI contributes to accelerating learning processes, particularly in reading and writing activities. By reducing the burden of technical correction, AI allows teachers and lecturers to focus on content development, reasoning, and critical discussion. Improvements in students' writing quality—especially in coherence, paragraph structure, and linguistic accuracy—indicate that AI functions as a form of scaffolding that supports learner autonomy. Moreover, the shift in educators' roles from technical correctors to discussion facilitators suggests that AI can foster more reflective and meaningful pedagogical interactions.

In classroom practice, AI enriches instructional activities and enhances academic interaction. Its use in drafting, text analysis, paraphrasing, and comparative writing tasks promotes

higher cognitive engagement and encourages critical attitudes toward texts, including AI-generated outputs themselves. Classroom interaction becomes more dialogic, as AI provides comparative material that can be collectively debated and evaluated. However, these opportunities can only be maximized if AI is positioned as a pedagogically and ethically controlled learning tool—one that supports, rather than replaces, reasoning, creativity, and academic responsibility. Overall, the potential of AI in Indonesian language pedagogy lies in its ability to strengthen learning effectiveness, enhance literacy quality, and enrich classroom interaction, provided its use is consciously designed, purposefully guided, and grounded in academic values. With appropriate guidance from teachers and lecturers, AI can serve as a catalyst for more adaptive, reflective, and digitally relevant Indonesian language learning in the context of 21st-century literacy.

2) Challenges of Academic AI Use

Challenges to Classroom Interaction and the Role of Teachers

Classroom and lecture observations indicate that the integration of AI presents significant challenges to learning interaction and the role of teachers. In several senior and junior high school classrooms, students were observed interacting more frequently with digital devices than engaging in direct dialogue with teachers. One senior high school teacher stated that "students tend to trust AI more than teachers' explanations." A junior high school teacher similarly noted that "AI sometimes makes students reluctant to ask questions." In the higher education context, Indonesian language lecturers observed that "academic authority needs to be reaffirmed in AI-assisted classrooms." Students confirmed this phenomenon by stating that "we often check AI first before discussing with others." These observations suggest that AI may shift pedagogical communication patterns from dialogic to individualistic if not managed reflectively.

Thematic coding of interview data using NVivo identified shifts in pedagogical authority and changes in interaction patterns as key challenges in AI integration. Senior high school teachers reported that "students now often trust AI answers more than teachers' explanations." Junior high school teachers added that "AI makes classroom interaction quieter because students are occupied with their devices." Indonesian language lecturers emphasized that "the role of lecturers needs to be redefined so that it is not displaced by AI." Students corroborated this condition by stating that "we usually consult AI before asking questions." These findings indicate that, without reflective control, AI can transform pedagogical relationships from dialogic engagement into individualized learning processes.

Analysis of instructional interaction documentation further demonstrates that AI introduces challenges to teachers' roles and classroom dynamics. Senior high school teachers wrote that "some students trust AI more than teacher guidance," while junior high school teachers noted that "students tend to consult AI before engaging in discussion." In evaluation reports, Indonesian language lecturers stressed that "academic authority must be reaffirmed in the AI era." Students acknowledged this phenomenon by writing that "we sometimes open AI tools more quickly than asking lecturers." These findings suggest that AI may reshape pedagogical communication patterns unless accompanied by reinforcement of teachers' roles.

Challenges of Implementation and Academic Needs

Observations also reveal challenges in AI implementation related to learners' academic needs. In senior high school classrooms, teachers noted that "not all materials are suitable for AI support." Junior high school teachers reported that "AI is effective for writing tasks but less suitable for literary discussion." Indonesian language lecturers stated that "AI is not yet fully aligned with learning outcomes." First-year students noted that "AI helps with technical aspects

but does not always explain concepts," while senior students added that "AI needs to be adjusted to academic level." These findings indicate that AI implementation requires pedagogical selection to ensure alignment with the characteristics of learning materials and Indonesian language learning objectives.

NVivo analysis further identified pedagogical misalignment between AI capabilities and academic needs as a major challenge. Senior high school teachers emphasized that "AI is not suitable for all content," while junior high school teachers stated that "AI works well for technical writing but is limited in supporting literary appreciation." Indonesian language lecturers noted that "AI has not fully aligned with intended learning outcomes." First-year students acknowledged that "AI assists with technical matters but often fails to clarify concepts," and senior students stressed that "AI use must be adapted to academic level." These findings underscore the need for strategic selection in AI implementation to ensure its relevance to instructional goals.

Documentation also reveals structural and pedagogical challenges in AI implementation. Senior high school teachers reported that "not all students possess sufficient digital literacy," while junior high school teachers noted that "teachers themselves are still learning to understand the boundaries of AI use." Lecturers observed that "there are no uniform institutional guidelines regarding AI." Students expressed that "we need clear guidance to avoid misusing AI." Nevertheless, recent instructional guides and modules indicate risk-mitigation efforts, emphasizing that "AI should be positioned as a reflective tool rather than an instant solution." Overall, documentation confirms that AI-related challenges require more deliberate, ethical, and contextualized pedagogical design in Indonesian language education.

Challenges of Readiness and Digital Competency Gaps

Observations reveal disparities in digital competencies between educators and learners that affect the effectiveness of AI integration. Senior high school teachers stated that "not all teachers are ready to use AI," while junior high school teachers added that "some teachers are still hesitant and afraid of making mistakes." At the higher education level, lecturers noted that "students' AI literacy is also uneven." Students acknowledged that "not all peers understand how to use AI ethically." Classroom observations further indicated that "differences in digital competence influence student participation." These findings highlight human resource readiness as a crucial factor in AI utilization.

Interview analysis likewise emphasized digital competency gaps as a significant challenge. Senior high school teachers admitted that "not all teachers are ready to use AI," while junior high school teachers stated that "some teachers are still uncertain and hesitant." Indonesian language lecturers observed that "students' AI literacy remains uneven." Students reported that "not all peers understand ethical AI use," and one student added that "differences in digital skills create imbalance in group work." These findings indicate that human resource readiness is a key determinant of successful AI integration.

Documentation of reflective notes and evaluation reports further shows that teachers' readiness to utilize AI is uneven, posing a significant implementation challenge. A senior high school teacher wrote, "I am still learning how AI works so that I do not misguide students." Junior high school teachers similarly noted that "not all teachers feel comfortable using AI-based technologies." Professional development documents indicate that "AI training remains sporadic and unsystematic." Indonesian language lecturers reported that "digital competency disparities among educators affect the quality of AI integration." These findings suggest that challenges lie not only with students but also with educators' capacity to manage AI pedagogically.

Challenges of Regulation, Infrastructure, and Sustainability

Beyond pedagogical challenges, observations also identified structural constraints affecting the sustainability of AI use. Senior high school teachers reported that "internet access is not stable in all classrooms," while junior high school teachers noted that "not all students have adequate devices." Indonesian language lecturers stated that "there are no clear institutional guidelines on AI use." Students expressed confusion, saying that "AI usage rules differ across courses." These observations indicate that without regulatory support, infrastructure, and sustainable policies, AI integration in Indonesian language learning risks being uneven and difficult to maintain.

NVivo analysis further identified limitations in regulation and infrastructure as critical challenges. Senior high school teachers stated that "there are no official guidelines for AI use in schools," while junior high school teachers added that "internet access and devices are not evenly distributed." Indonesian language lecturers observed that "institutional policies regarding AI remain unclear." Students expressed confusion, stating that "AI rules vary from one course to another." These findings suggest that without regulatory frameworks, infrastructure, and sustainable policies, AI utilization in Indonesian language education may remain inconsistent and unsustainable.

Policy documentation and institutional reports further reveal structural challenges affecting AI sustainability. School reports stated that "official guidelines for AI use in Indonesian language learning are not yet available." Senior high school teachers noted that "access to devices and networks is uneven across classrooms." At the university level, lecturers reported that "without institutional policies, AI use depends heavily on individual initiative." Students reflected that "we are confused about AI usage boundaries because rules differ across courses." These findings underscore that AI integration requires regulatory, infrastructural, and sustainable policy support to prevent inequality and pedagogical confusion

3) Challenges of Academic AI Use

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2. Discussions

a) Opportunities of AI in Indonesian Language Pedagogy

1) General Perceptions of Academic AI Use

In general, the use of Artificial Intelligence (AI) in academic contexts has begun to be perceived positively by teachers, lecturers, and students. AI is viewed as a supportive tool that can

facilitate learning processes, such as helping learners understand materials, organize writing outlines, and correct linguistic errors. In Indonesian language learning, AI offers opportunities to support early stages of writing, including idea generation, text structuring, and spelling and grammar revision. Several studies indicate that AI can enhance learning efficiency and provide rapid feedback that supports students' learning processes (Luckin et al., 2016; Holmes et al., 2019).

Nevertheless, perceptions of academic AI use are not entirely free from concern. Some educators argue that unrestricted AI use may foster excessive dependency and limit the development of independent thinking skills. Other concerns relate to academic integrity, particularly when AI replaces the full process of thinking and writing. In Indonesian language learning, this situation may reduce linguistic originality, expressive creativity, and sensitivity to politeness norms and cultural context. Previous research emphasizes that acceptance of AI is stronger when educational institutions establish clear rules and ethical guidelines for its use (Zawacki-Richter et al., 2019).

Ultimately, AI is perceived as a major pedagogical opportunity when used wisely and responsibly. AI should be positioned as a human-oriented learning support tool, with teachers and lecturers retaining primary control over the learning process. This approach aligns with the principles of human-centered AI, which emphasize human oversight, ethical values, and academic integrity (Ahuerma, 2024). In Indonesian language learning, AI can assist with technical linguistic aspects, while educators remain responsible for guiding meaning-making, critical thinking, and cultural value formation. Thus, general perceptions of academic AI use can evolve positively and align with broader educational goals.

2) Impact on the Effectiveness of Indonesian Language Learning

The use of AI in Indonesian language learning has demonstrated positive effects on learning effectiveness, particularly in improving the quality of learning processes. AI enables faster and more personalized feedback, especially in reading and writing skills. With AI assistance, learners can immediately identify spelling errors, sentence structure issues, and textual coherence problems, making the revision process more efficient. Research shows that AI-based technologies can enhance learner engagement and support deeper understanding compared to conventional instruction alone (Holmes, Bialik, et al., 2019).

In addition to improving learning quality, AI also increases instructional efficiency. Teachers and lecturers are supported in managing routine tasks such as language checking and repetitive exercises, allowing more time for facilitating discussion, reinforcing conceptual understanding, and assessing students' critical thinking abilities. In this context, AI functions as an assistive tool that strengthens—rather than replaces—the educator's role. Systematic reviews indicate that AI is most effective when used to support adaptive learning and differentiated instruction (Zawacki-Richter et al., 2019).

However, the effectiveness of AI in Indonesian language learning depends heavily on how and to what extent it is used. Without proper supervision and clear regulation, learning effectiveness may decline as students become passive and less engaged in independent thinking. Therefore, AI must be integrated within a human-centered framework, where educators maintain control over learning processes while reinforcing academic integrity and linguistic politeness values (Zawacki-Richter et al., 2019; UNESCO, 2023; Ahuerma, 2024). Through this approach, AI can enhance learning effectiveness not only in terms of outcomes but also in process quality and character development.

3) AI Utilization in Classroom Practice and Interaction

In Indonesian language instruction, AI utilization has become increasingly visible across various classroom activities in both schools and higher education. AI is used to support learning tasks such as providing example exercises, assisting students in identifying reading patterns, and helping them develop clearer writing outlines. This encourages more interactive and reflective learning, as students are prompted not only to receive information but also to critically evaluate AI-generated outputs before adopting them as final answers. International research suggests that when used effectively, AI can stimulate student engagement in discussion and active learning activities (Kasneci et al., 2023).

Findings from the Indonesian context also indicate that AI positively influences classroom interaction patterns. A national study found that integrating AI technology into Indonesian language learning enhances student engagement by providing additional learning resources that students can access independently (Arifah et al., 2025). With AI handling technical tasks, teachers have more time to facilitate discussion, provide deeper explanations, and deliver meaningful feedback. Consequently, teacher–student interaction shifts from mere technical correction toward dialogue on meaning, context, and communicative purpose.

Nevertheless, AI use in classroom practice and interaction must be guided pedagogically and ethically to prevent excessive technological dependence. Without clear guidance from teachers or lecturers, classroom interaction may lose depth as students rely on AI for quick answers without engaging in critical thinking. Therefore, educators must establish clear rules, positioning AI as a discussion tool or reference rather than a final answer source. This approach aligns with human-centered AI principles that place educators as the primary controllers of learning interaction and AI as a tool that enriches the learning process (UNESCO, 2023)

b) Risks and Challenges

1) Risks of Academic AI Use

Impact on Indonesian Language Learning Effectiveness

Despite its advantages, AI use in Indonesian language learning presents risks to learning effectiveness. One major risk is reduced cognitive engagement when AI is overused as an instant answer provider. Studies indicate that dependency on AI can diminish the depth of information processing, as learners tend to accept outputs without critical analysis (Holmes, Bialik, et al., 2019; Kasneci et al., 2023). In Indonesian language learning, this condition may weaken higher-order thinking skills such as textual interpretation, argument construction, and independent idea development. Consequently, rather than enhancing effectiveness, AI may undermine learning quality if not pedagogically integrated.

Impact on AI Utilization in Classroom Practice

Another risk concerns how AI is used in classroom practice. Without clear guidance, AI may be reduced to a task-completion tool rather than a medium for reflective learning. Zawacki-Richter et al. (2019) emphasize that unguided AI use can narrow learning functions to outcome attainment alone. In Indonesian language learning, this is evident when AI is used to generate texts directly without discussion, revision, or linguistic reflection. National findings suggest that unsupervised AI use can reduce pedagogical interaction, as students focus more on technology than dialogic learning (Suryani, 2023). Thus, the primary risk lies not in the technology itself but in the absence of instructional design and pedagogical control.

Impact on Originality and Academic Ethics

The most critical risk of academic AI use concerns originality and academic ethics. AI's capacity to generate human-like text can encourage academic dishonesty, including disguised plagiarism and blurred authorship. UNESCO (2023) warns that non-transparent AI use may weaken academic integrity and trust in education. In Indonesian language learning, this risk is particularly significant because linguistic originality, personal expression, and cultural context are core competencies. National studies indicate that students often lack sufficient understanding of ethical boundaries in AI use, underscoring the need for stronger digital ethics literacy and firm academic policies (Suryani, 2023). Therefore, AI risk management must focus on reinforcing originality, honesty, and academic responsibility.

2) Challenges of Academic AI Use

Challenges to Interaction and the Role of Educators

A key challenge in academic AI use lies in shifting interaction patterns and educator roles. AI may reposition teachers and lecturers from primary knowledge sources to learning facilitators, requiring more adaptive pedagogical and digital competencies. Research suggests that without adequate pedagogical readiness, AI can reduce human-centered classroom interaction, including dialogue, discussion, and reflective guidance (Holmes, Bialik, et al., 2019; Kasneci et al., 2023). In Indonesian language learning, this challenge is substantial, as language acquisition relies heavily on communicative interaction, contextual interpretation, and linguistic modeling by educators.

Challenges of Implementation and Academic Needs

Another challenge involves aligning AI implementation with diverse academic needs. Not all learning objectives require or benefit from AI support. Zawacki-Richter et al. (2019) note that AI implementation is often partial and poorly integrated into curricula, resulting in sporadic and pragmatic use. In Indonesian language learning, AI is more suitable for technical linguistic support, such as editing and structural exercises, but less appropriate for assessing interpretative skills, creativity, and cultural sensitivity. This challenge requires educators to critically determine when AI is relevant and when human guidance should prevail.

Challenges of Readiness and Digital Competency Gaps

Academic AI use also faces serious challenges related to readiness and digital competency disparities among educators and learners. Not all teachers, lecturers, and students possess adequate digital and AI literacy to use the technology effectively and ethically. Unequal access and skills risk creating learning gaps, where some learners benefit more than others (UNESCO, 2023). In Indonesian language learning, this condition affects fairness in instruction and assessment. National studies indicate that limited training and technological understanding are major barriers to AI integration in language classrooms (Dewi, 2024).

Challenges of Regulation, Infrastructure, and Sustainability

Beyond pedagogical and competency challenges, academic AI use is constrained by regulatory, infrastructural, and sustainability issues. Many educational institutions lack clear policies on AI usage boundaries, data protection, and academic responsibility. UNESCO (2023) and Ahuerma (2024) emphasize that without strong institutional regulation, AI use risks ethical violations, privacy issues, and inequity. Additionally, limited technological infrastructure and the cost of maintaining AI systems pose sustainability challenges, particularly for resource-constrained schools and universities. Therefore, challenges in academic AI use are not merely

technical but also structural and policy-related, requiring long-term planning and cross-stakeholder collaboration.

c) Implementation Models Integrated with Ethics and Academic Regulation

1) Human-in-the-Loop Model

An integrated implementation framework positions the Human-in-the-Loop Model as its foundation. This model emphasizes that AI does not operate autonomously but remains under human control, particularly by teachers and lecturers. Holmes, Bialik, et al. (2019) and Kasneci et al. (2023) argue that active educator involvement in verifying, interpreting, and deciding on AI outputs is essential to maintaining instructional quality. In Indonesian language learning, this model allows AI to assist with technical linguistic aspects while educators guide interpretation, discussion, and critical reflection. Thus, the pedagogical role of educators is not replaced but strengthened through technological support.

2) Ethical Governance Model

The Ethical Governance Model provides a regulatory framework ensuring that AI use aligns with institutional values, norms, and educational goals. This model highlights the importance of written policies, ethical guidelines, and clearly defined boundaries for AI use in academic activities. Zawacki-Richter et al. (2019) stress that without ethical governance, AI implementation tends to be fragmented and ethically risky. In Indonesian language learning, ethical governance is essential to maintain fair assessment, protect academic data, and preserve cultural and linguistic values. Consequently, AI is viewed not merely as a technological tool but as a pedagogical practice requiring normative regulation.

3) Academic Integrity–Aligned AI Model

The Academic Integrity–Aligned AI Model focuses on safeguarding originality, honesty, and academic responsibility. UNESCO (2023) emphasizes that AI use in education must be transparent and accountable to prevent erosion of academic integrity. In Indonesian language learning, the primary challenge lies in preventing AI from replacing independent thinking and creative processes. This model encourages students to openly disclose AI use and to position AI as a support tool rather than a substitute for reflective and creative work. Through this approach, academic integrity is preserved while ethical awareness in technology use is fostered.

Collectively, these three models form a comprehensive framework for academic AI implementation. The Human-in-the-Loop Model ensures pedagogical control, the Ethical Governance Model provides regulatory direction, and the Academic Integrity–Aligned AI Model safeguards moral and academic values. National findings indicate that AI integration accompanied by teacher supervision and ethical regulation can enhance learning quality without compromising academic values (Masarroh et al., 2024). Therefore, this integrated implementation model represents an ideal approach for AI use in Indonesian language learning, as it balances technological effectiveness with ethics, regulation, and human-centered pedagogy.

CONCLUSIONS

Based on the findings of this study, several conclusions can be drawn. First, the use of AI has been shown to enhance learning effectiveness, particularly in reading and writing activities, by accelerating the revision process, improving textual structure and coherence, and reducing the burden of technical correction. As a result, educators are able to focus more on conceptual discussions and the development of students' reasoning skills. In classroom practice, AI enriches

the variety of learning activities and encourages more dialogic and reflective academic interaction, as learners are prompted to critique, compare, and evaluate AI-generated outputs. However, these benefits can only be maximized when AI is positioned as a supportive tool that is pedagogically and ethically controlled, thereby keeping learners' reasoning, creativity, and academic responsibility at the center of the learning process.

Second, the use of academic AI in Indonesian language learning presents significant risks and challenges. The primary risks include a potential decline in learners' cognitive depth, increased dependence on technology, and the weakening of independent thinking due to an emphasis on instant results rather than learning processes. In instructional practice, AI may shift classroom dynamics and the role of educators if its use is not clearly guided. From an academic ethics perspective, issues related to originality, stylistic uniformity, and blurred boundaries between assistance and plagiarism also emerge. These challenges are further exacerbated by disparities in digital competence, limited infrastructure, and the absence of consistent institutional regulations and guidelines.

Third, the most relevant AI implementation model for Indonesian language pedagogy is an integrated approach that combines the Human-in-the-Loop Model, the Ethical Governance Model, and the Academic Integrity–Aligned AI Model. In this framework, AI is consistently positioned as an initial support tool for learning, while pedagogical decisions, assessment, and instructional control remain in the hands of educators. Ethical governance, implemented through institutional policies and classroom agreements, functions as a regulatory mechanism to ensure that AI is used fairly and responsibly without undermining its pedagogical benefits. Furthermore, an emphasis on academic integrity strengthens these models by placing honesty, originality, and critical thinking at the core of AI use. Overall, the findings indicate that effective and sustainable AI integration is not merely technocratic in nature, but depends on human oversight, clear ethical regulation, and the internalization of academic integrity values by both educators and learners.

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