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HARNESSING ARTIFICIAL INTELLIGENCE FOR ENGLISH LANGUAGE LEARNING: OPPORTUNITIES, PRACTICES, AND CHALLENGES

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ABSTRACT. This systematic literature review aims to analyze and synthesize updated research published in 2025 on the use of artificial intelligence (AI) in English language education, focusing on its roles, applications, and outcomes in enhancing language learning. Guided by the PRISMA 2020 framework, the review examines nine peerx50072-reviewed studies from the ERIC database and reputable journals, covering various AI tools such as chatbots, MOOCs, virtual tours, mobile learning apps, gamified platforms, and writing assistants. The findings show that AI supports personalized learning, improves learners' engagement, autonomy, and language skills (speaking, writing, vocabulary, grammar, and communication), and provides valuable assistance in diverse educational contexts, including rural and special-needs settings. Despite these benefits, challenges such as limited infrastructure, digital literacy gaps, and dependence on technology remain significant barriers. The review concludes that effective integration of AI requires collaboration among educators, policymakers, and developers, as well as continuous teacher training, to ensure that AI complements traditional pedagogy and contributes to the advancement of English language education.

Keywords: Artificial Intelligence (AI), Educational Technology, EFL, English Language Learning, Language Skill Development.

ABSTRAK. Tinjauan pustaka sistematis ini bertujuan untuk menganalisis dan mensintesis penelitian terbaru yang diterbitkan pada tahun 2025 tentang penggunaan kecerdasan buatan (AI) dalam pendidikan bahasa Inggris, dengan fokus pada peran, aplikasi, dan hasilnya dalam meningkatkan pembelajaran bahasa. Dipandu oleh kerangka kerja PRISMA 2020, tinjauan ini mengkaji sembilan studi yang telah ditinjau oleh rekan sejawat dari basis data ERIC dan jurnal terkemuka, yang mencakup berbagai perangkat AI seperti chatbot, MOOC, tur virtual, aplikasi pembelajaran seluler, platform gamifikasi, dan asisten menulis. Temuan menunjukkan bahwa AI mendukung pembelajaran yang dipersonalisasi, meningkatkan keterlibatan, otonomi, dan keterampilan bahasa pelajar (berbicara, menulis, kosakata, tata bahasa, dan komunikasi), dan memberikan bantuan yang berharga dalam berbagai konteks pendidikan, termasuk lingkungan pedesaan dan kebutuhan khusus. Terlepas dari manfaat ini, tantangan seperti infrastruktur yang terbatas, kesenjangan literasi digital, dan ketergantungan pada teknologi tetap menjadi hambatan yang signifikan. Tinjauan tersebut menyimpulkan bahwa integrasi AI yang efektif memerlukan kolaborasi antara pendidik, pembuat kebijakan, dan pengembang, serta pelatihan guru yang berkelanjutan, untuk memastikan bahwa AI melengkapi pedagogi tradisional dan berkontribusi pada kemajuan pendidikan bahasa Inggris.

Kata Kunci: Kecerdasan Buatan (AI), Teknologi Pendidikan, EFL, Pembelajaran Bahasa Inggris, Pengembangan Keterampilan Bahasa.

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INTRODUCTION

In the age of globalization and th e shift toward Industry 5.0, proficiency in English has become increasingly vital for international communication, academic success, and preparation for the

workforce. In Indonesia, there is a growing need for individuals with strong foreign language skills, particularly in English. This demand is bolstered by government efforts to enhance digital literacy, boost national competitiveness, and foster inclusive education accessible to diverse communities across various social, economic, and regional spectrums (Wang & Si, 2024).

In this context, the integration of Artificial Intelligence (AI) into education, including English language learning, has attracted considerable interest. AI technologies are being employed to develop interactive, personalized, and adaptive learning environments tailored to meet individual student needs. Various applications, such as chatbots, writing aids, gamified platforms, and online learning systems, have demonstrated effectiveness in enhancing writing, speaking, and vocabulary skills. These advancements signify a significant shift in language education from conventional methods to digitally integrated approaches (Alqurashi, 2025).

Existing research strongly supports the advantages of AI in English language learning. For example, studies indicate that tools like Grammarly, ChatGPT, and DeepL greatly enhance students' writing quality, particularly in grammar and sentence construction (Amina, n.d.). Additional findings show that AI-driven platforms improve reading comprehension, vocabulary acquisition, and grammatical accuracy in students. Moreover, the use of AI in vocabulary instruction within vocational schools has been found to increase students' motivation and effectiveness in learning new (Techniques & Vocabulary, 2024).

However, there remains a notable gap in research in this field. Most studies tend to concentrate on short-term results or specific contexts, with a lack of comprehensive analysis regarding the broader application of AI in Indonesian English as a Foreign Language (EFL) settings, the outcomes yielded, and the persistent challenges faced. Additionally, ongoing obstacles such as inadequate digital infrastructure, unequal digital literacy, and the risks of excessive dependency on AI impede its effective implementation, particularly in rural and under-resourced areas (Richard & Noel, 2024).

Given this background, the current study seeks to systematically review recent literature on the incorporation of AI into English language education in Indonesia. It aims to investigate AI's roles, applications, and outcomes while identifying the challenges encountered in various educational contexts. The study is expected to offer a more thorough understanding of both the opportunities and limitations of integrating AI into English language learning (Kovalenko & Baranivska, 2024).

Furthermore, this research posits that AI possesses transformative potential in facilitating more inclusive, effective, and learner-centered English instruction. However, its efficacy is largely dependent on contextual factors such as infrastructure readiness, teacher competencies, curriculum alignment, and policy support. Therefore, the study hypothesizes that AI can significantly improve the quality of language learning and equitable access to education, as long as key barriers are adequately addressed (Outcomes, 2025).

METHOD

This study employed a systematic literature review guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 checklist, which consists of 27 criteria designed to ensure transparency and methodological rigor throughout the review process. A comparative descriptive research approach was applied to examine how Artificial Intelligence (AI) is utilized to enhance various aspects of English language learning, including speaking, writing, vocabulary, grammar, and overall communication skills. This approach enables a conceptual exploration of how AI differs from and complements traditional learning platforms and pedagogical methods.

The review focused on synthesizing and analyzing insights from 9 peer-reviewed research articles that explore the integration of AI into English language education across different educational levels and contexts. These articles were sourced from the ERIC database, chosen for its comprehensive coverage of educational research. Only studies published in 2025 were included to ensure that the review captured the most recent advancements, innovations, and trends in the field.

Phase 1: Identification Phases

This systematic review involves identifying relevant works and consists of two main steps. The first step is selecting suitable articles based on predefined criteria. Such studies may reveal limitations caused by existing biases. This approach focuses exclusively on peer-reviewed journal articles, excluding other sources like book chapters, official reports, and technical writings. Therefore, the study relies solely on journal literature, primarily from Eric, as indicated in Table 1. Additionally, only papers published around 2025 are included. As the number of scientific publications increases, analyzing the latest research helps assess current trends and recent

discoveries, preventing the review from becoming outdated. A range of keywords, such as "learning English using smart machines," was used to conduct this search.

Table 1. Source of Journals

Journal Source	Quantity	Keywords
ERIC	323 Article	Artificial Intelligence, Artificial Intelligence in learning English

Phase 2: Screening Phase

As suitable papers in ERIC was chosen, duplicates were discovered and removed within a week. The papers were then re-examined to ensure that the remaining articles met the researcher's requirements.

Phase 3: Eligibility Phase

In the third phase, the collected papers underwent a review process to assess their eligibility, requiring alignment with the criteria specified in the inclusion section of Table A. This step is vital for guaranteeing that the data acquired for this study maintain high standards of quality and reliability.

Table 2. Inclusion Criteria

Inclusion
Artificial Intelligence applied to English learning
Research methodologies: quantitative, qualitative, mixed-method
Respondents from Indonesian educational contexts
Peer-reviewed journal articles published in 2025

The selected articles concentrate on investigators who employed Artificial Intelligence in the context of learning English. These articles were evaluated based on the criteria presented in Figure 1

Selection of articles criterion	Did the researchers implement Artificial Intelligence in their studies?	Did these articles focus on utilizing Artificial Intelligence applied to English learning?

Figure 1. Assessment criterion in choosing articles

Phase 4: Exclusion Phase

Following the assessment of article eligibility in the third phase, the articles that did not meet the criteria were eliminated from this systematic literature review. The criteria for exclusion are delineated in Table 3. This exclusion phase, akin to the eligibility assessment, played a vital role in guaranteeing that the researchers acquired data of high quality.

Table 3. Exclusion Criteria

Exclusion
AI is not implemented in English learning
Studies did not evaluate AI's impact
Conducted outside Indonesia
Not published in 2025 / not a journal article

A total of 37 articles were identified that examined the impact of Artificial Intelligence on the enhancement of English language learning in Indonesia for the year 2025. The majority of the studies reviewed utilized a variety of research methodologies, including quantitative, qualitative, and mixed-method approaches, as detailed in Table 4. The participants in these studies encompassed a diverse range of educational levels, from primary education to tertiary institutions, highlighting a widespread interest in the application of AI across various educational settings. This observation indicates that the incorporation of AI in English language education is being investigated not only in higher education but also at earlier educational stages, underscoring its increasing significance within the Indonesian educational landscape.

Table 4. Quantity of Journals based on Research Design

Research Design	Quantity
Qualitative Design	4
Quantitative Design	1
Mixed-Method Design	2
Research and Development	2

Figure 2 illustrates the comprehensive process from Phase 1 to Phase 4 with enhanced clarity, in accordance with the 2020 checklist of The Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) utilized in the execution of this systematic literature review.

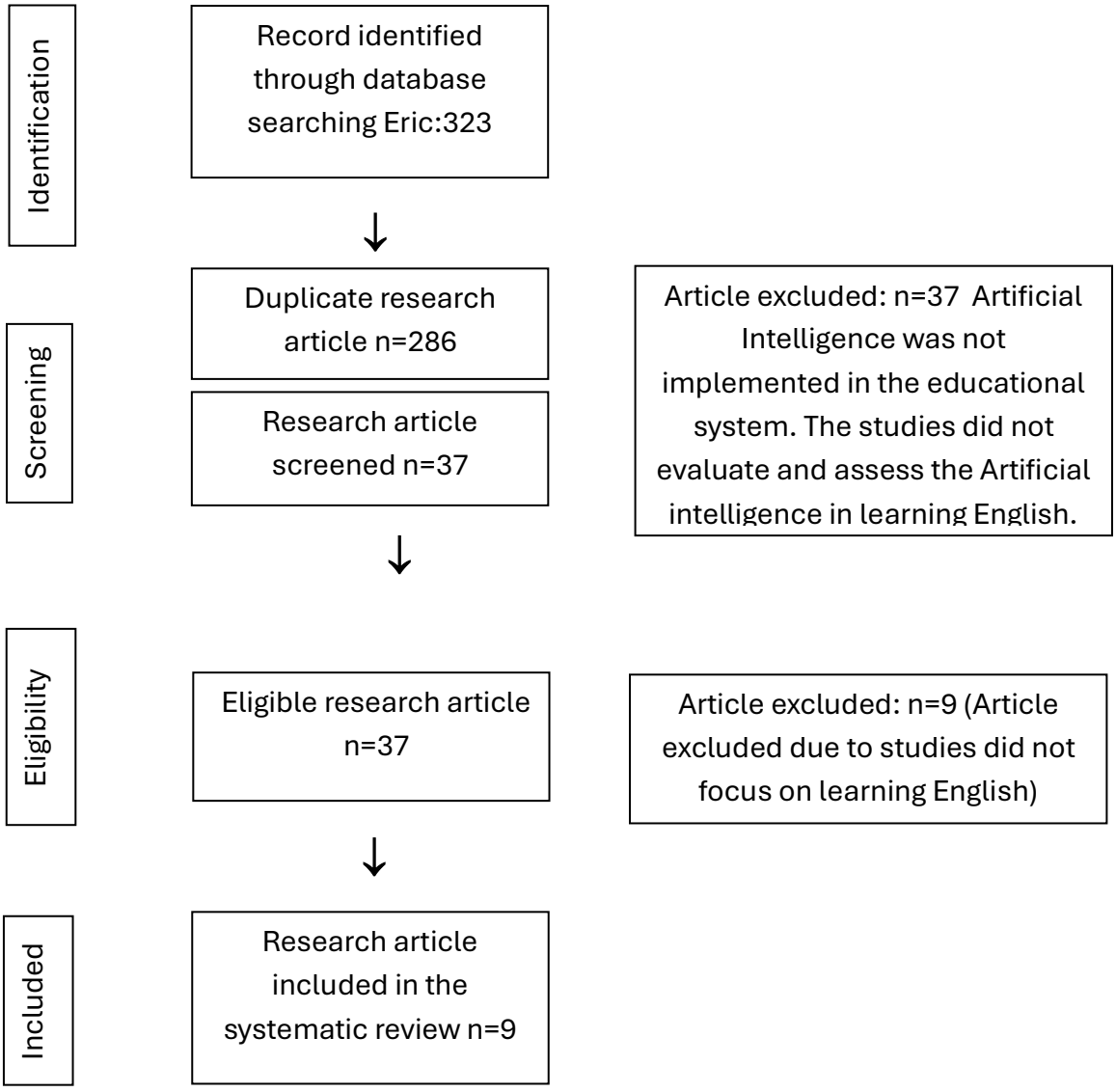

Figure 2. Stream Chart of the Research Article Selection Process

RESULT

This section presents a comprehensive analysis of selected research studies examining artificial intelligence applications in language education. Following a systematic screening process, 9 research articles were identified as meeting the inclusion criteria for this review. The selected

studies represent diverse geographical contexts and methodological approaches, collectively providing insights into how AI technologies are being harnessed to create opportunities, implement innovative practices, and address challenges in English language learning across various educational settings. These investigations are summarized in Table 5, which outlines the key characteristics and findings of each study.

Table 5. Main Characteristics, Perspectives, and perception of using Artificial Intelligence in English Language Learning

Authors	Terrtory	Study Purpose	Participants	Discussion
EJ1479873	Indonesia	To investigate rural EFL lecturers' perspectives on integrating AI into teaching practices and explore AI's role in language pedagogy.	Four EFL lecturers from different institutions in East Java were selected through purposive sampling.	AI offers significant benefits, including streamlined lesson preparation, interactive learning experiences, and independent learning support. However, infrastructural limitations like unreliable internet and digital literacy gaps hinder optimal implementation in rural contexts.
EJ1467944	Indonesia	To investigate EFL students' perceptions of AI-assisted writing tools in supporting self-regulated writing practices.	40 EFL students at UIN Maulana Malik Ibrahim Malang were studied through questionnaires, interviews, and document analysis.	Students perceive AI tools as beneficial for grammar checking, spelling correction, and word choice improvement. While valued for feedback and translation, students prefer human guidance for in-depth explanations, emphasizing balanced AI integration.
EJ1467547	Indonesia	To develop AI-based virtual tours for vocational tourism students to enhance English communication competencies for tour guides.	40 vocational high school students specializing in tourism at Universitas Pendidikan Ganesha.	Significant improvement shown with a large effect size (Cohen's d = 2.14). AI-based virtual tours enable interactive simulations resembling real tourism situations, providing professional context practice with automatic evaluation and feedback.
EJ1470552	Indonesia	To examine gamified MOOC platforms'	27 students enrolled in the English for IT Professionals	Findings reveal improvements in self-directed learning aspects while highlighting challenges in

		impact on autonomous learning in ESP courses using self-directed learning frameworks.	course on the LearnovaUM platform at Universitas Negeri Malang.	maintaining motivation and time management. Demonstrates the potential of gamified MOOCs for ESP enhancement and autonomous learning promotion.
EJ1464340	Indonesia	To analyze students' needs for mobile English application development for EFL young learners and curriculum integration.	100 junior high school students were randomly selected from Makassar using interviews, observations, and questionnaires.	Students need applications with easy-to-understand materials using Indonesian speaker audio/video and interactive exercises for speaking improvement. Study synergized school curriculum with needs analysis for stakeholder benefit.
EJ1460119	Indonesia	To identify English-speaking difficulties and recommend digital media strategies for improvement in the digital age.	15 students at Cokroaminoto University, Yogyakarta, were selected through simple random sampling.	Problems include insufficient practice, vocabulary, pronunciation accuracy, training, environment, and habituation. Solutions involve vocabulary memorization, English audio exposure, speaking exercises, peer support, and consistent practice using YouTube, TikTok, Instagram, and Duolingo.
EJ1467828	Indonesia	To conduct needs analysis and develop MOOC-based instructional material models for flipped English speaking classes.	Students and lecturers from the English Language Education Department at Indonesian Higher Education institutions.	MOOC materials should be supportive, accommodating, goal-oriented, fluency/accuracy focused, diverse, updated, engaging, and motivating. The model integrates goals, content, activities, venues (online/offline), and media components effectively.
EJ1470994	Indonesia	To investigate rural EFL lecturers' perspectives on	Four EFL lecturers from different institutions in East	AI offers significant benefits, including streamlined lesson preparation, interactive learning experiences, and independent learning support. However,

		integrating AI into teaching practices and explore AI's role in language pedagogy.	Java were selected through purposive sampling	infrastructural limitations like unreliable internet and digital literacy gaps hinder optimal implementation in rural contexts.
EJ1476303	Indonesia	To investigate guided vs unguided social media effects on EFL speaking performance and willingness to communicate.	Indonesian EFL students: USM group (20), GSM group (23), and control group (26) from a state university.	Both approaches improved speaking performance, but only the unguided significantly enhanced willingness to communicate. Social-emotional learning is influenced by engagement, motivation, environment, and support. A balance between structure and freedom is emphasized.

DISCUSSION

The inaugural study undertaken investigated the viewpoints and experiences of English language instructors situated in rural regions, shedding light on how these educators perceive the integration of artificial intelligence (AI) into their teaching practices. The findings of this study revealed that AI plays a pivotal role in facilitating the preparation of teaching materials, thereby enhancing the overall instructional process. Additionally, it was observed that AI technologies provide an interactive learning environment that encourages student engagement and participation. Moreover, these tools have been shown to foster independent learning among students, empowering them to take greater responsibility for their educational journeys. However, despite these advantages, the study also identified several significant challenges that impede the effective implementation of AI in remote areas. Chief among these challenges are issues related to inconsistent access to the internet and the prevailing low levels of digital literacy, which collectively limit the potential benefits of AI for both instructors and students.(Praja et al., 2025)

In a separate study that focused on the perceptions of students regarding AI-assisted writing tools, researchers found compelling evidence that such technologies can offer marked improvements in key aspects of writing, including grammar, spelling, and word choice. The students reported these tools as beneficial in enhancing their writing skills, thereby facilitating a more efficient independent writing practice. Nonetheless, it is essential to note that a subset of students expressed a continued desire for guidance from instructors, particularly when it comes to receiving more nuanced and in-depth explanations of complex concepts. This feedback underscores the critical need for establishing a collaborative dynamic between human educators and AI systems, with the latter serving as a complementary resource rather than a complete replacement for traditional forms of instructional support.(Amani & Bisriyah, 2025)

Furthermore, the development of an AI-based virtual tour specifically designed for tourism students has yielded promising results. This innovative tool aids in the improvement of real-world communication skills by simulating authentic tour guide scenarios. The implementation of automated assessments and the provision of constructive feedback have collectively demonstrated statistically significant enhancements in the participants' communication abilities. This highlights the potential of AI technologies to offer practical training experiences that mirror real-life professional situations.(Ramendra, 2025)

Another noteworthy study investigated the efficacy of a gamified online learning platform within the context of an IT-specific English course. The findings indicated that participants exhibited increased levels of independent learning as a result of engaging with the gamified elements of the course. However, it was also evident that challenges related to motivation and time management persist. These issues need to be addressed comprehensively to fully harness the advantages presented by this innovative educational method and to enhance the overall learning experience.(Slamet et al., 2019)

A needs analysis conducted for the development of a mobile application aimed at junior high school students learning English highlighted several critical requirements. Key findings emphasized the importance of incorporating materials that are straightforward and accessible, utilizing audiovisual resources presented by native Indonesian speakers. Additionally, the necessity for interactive speaking exercises that align with the existing school curriculum and are widely applicable was underscored to ensure maximum educational value.(Fansury et al., 2025)

Moreover, a further study focused on the primary obstacles that students face in their efforts to speak English fluently. It identified a lack of practical speaking opportunities, limited vocabulary, issues with pronunciation accuracy, the absence of a supportive learning environment, and inadequate practice habits as the main barriers to proficiency. In response, various solutions were recommended, including strategies for vocabulary acquisition, increased exposure to English through audio materials, opportunities for regular speaking practice, encouragement of peer support, and the utilization of popular social media platforms to facilitate practice more engagingly.(Nurarifah et al., 2025)

Lastly, a comprehensive examination of the development of an integrated online learning model that supports flipped learning in university-level speaking classes revealed the necessity for the creation of didactic materials that align clearly with the learning objectives. It also highlighted the need for diverse and current content, as well as stimulating activities that engage students. A well-structured hybrid learning approach that effectively combines online and offline elements is essential for maximizing participant engagement and motivation.(Agusniati et al., 2025)

Further studies that investigate the impact of social media on language acquisition have shown that both intentional (directed) and unintentional (undirected) interventions can effectively enhance students' English speaking skills. Interestingly, it was found that undirected social

media use tends to be more effective in fostering authentic communication, influenced significantly by factors such as student engagement, motivation, environmental context, and the availability of social support systems. This balance between providing students with a structured environment and allowing them the freedom to explore is crucial for language learning.(Margareth et al., 2025)

Collectively, these studies offer valuable insights into the multifaceted nature of English language education, particularly in light of the advancements in AI technology and digital media. They highlight both the myriad opportunities and the distinct challenges that educators face in adopting these innovations. This is especially true in the realm of interactive pedagogy and personalized learning experiences. A harmonious conjunction between technological advancements and the indispensable role of educators is essential for realizing effective and inclusive educational outcomes across diverse contexts and learning environments.(Kusuma et al., 2025)

CONCLUSION

The integration of artificial intelligence (AI) in English language education in Indonesia has yielded numerous beneficial developments. AI has significantly enhanced student engagement, fostered self-directed learning, and facilitated timely feedback and tailored educational experiences. This technological advancement has proven particularly advantageous for students with special needs and has expanded access to English language instruction in remote and under-resourced regions. Nevertheless, the incorporation of AI in English language teaching encounters several challenges, including inadequate infrastructure, low levels of digital literacy, and the potential for excessive dependence on technology. Thus, the successful implementation of AI necessitates collaborative efforts among educators, policymakers, and technology developers. In addition, ongoing teacher training and the creation of AI platforms attuned to the local cultural context are essential. In summary, AI should not be viewed as a substitute for conventional pedagogical methods; rather, it acts as a complement that enhances and elevates the quality of English language education, particularly in the Indonesian context. The collaboration between technological innovations and the instructional role of teachers is crucial for achieving interactive, personalized, and inclusive learning environments across various educational strata and diverse social contexts. This conclusion affirms that, when the appropriate challenges are addressed, AI can serve as a strategic asset in advancing English language education in a comprehensive and sustainable manner.

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