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AI Integration in English Language Teaching: Junior High School Teachers' Perceptions and Readiness in Ogan Ilir, South Sumatera

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ABSTRACT

Artificial Intelligence (AI) is increasingly reshaping educational practices worldwide, particularly in language learning. This mixed-methods study investigates English teachers' perceptions and readiness toward AI integration in junior high schools in Ogan Ilir, South Sumatra, Indonesia, an under-resourced and largely rural context that remains underrepresented in global AI-in-education research. Guided by the Technological Pedagogical Content Knowledge (TPACK) framework and technology acceptance perspectives, the study examines how teachers' technological competence, pedagogical readiness, and institutional conditions interact to shape AI adoption in English language teaching (ELT). Data were collected through questionnaires, interviews, and classroom observations and analyzed using descriptive statistics and thematic triangulation. The findings indicate that teachers hold generally positive view on AI and recognize its potential to enhance instructional effectiveness, student motivation, and personalized learning. However, their readiness for AI integration remains moderate, constrained by limited professional development, inadequate digital infrastructure, insufficient AI literacy, and policy-related gaps. By foregrounding teachers' voices from a rural context, this study extends international ELT and AI-in-education scholarship beyond technologically advantaged settings. This research adds empirical support to discussions of equitable AI integration while underscoring the importance of context-specific professional development, institutional infrastructure, and ethical governance in fostering sustainable AI-mediated ELT practices.

Introduction

Artificial Intelligence (AI) has become a major driver of educational transformation, reshaping pedagogical practices and redefining the roles of teachers and learners. In English Language Teaching (ELT), AI tools such as ChatGPT, Grammarly, automated speech recognition systems, and AI-based feedback platforms have been shown to enhance student engagement, support personalized learning, and improve language proficiency, particularly in writing and speaking (Galaczi & Luckin, 2024); Luo & Zou, 2024). These developments

position AI not merely as a technological innovation but as a pedagogical resource with the potential to transform language instruction.

However, research consistently indicates that successful AI integration depends not only on technological availability but also on teachers' perceptions, readiness, and institutional support. Informed by established technology acceptance and integration frameworks, namely the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Technological Pedagogical Content Knowledge (TPACK) framework, prior studies emphasize the importance of perceived usefulness, self-efficacy, ease of use, pedagogical competence, and contextual support in shaping teachers' adoption of AI (Ertmer & Ottenbreit-Leftwich, 2010); Viberg et al., 2024). Despite widespread positive perceptions of AI among teachers, teachers continue to express concerns regarding ethical issues, academic integrity, data privacy, and the potential erosion of their professional roles (Sămărescu et al., 2024; Rahman, 2024).

Despite these global advances, the picture in developing educational contexts differs markedly**.** In Indonesia, particularly in rural and under-resourced regions, AI integration remains uneven due to limited infrastructure, insufficient professional development, and unequal access to digital resources (Septian, 2023). These challenges are especially salient at the junior high school level, where teachers play a crucial role in shaping students' language development, learning habits, and digital literacy during a critical transitional stage. Nevertheless, empirical studies examining junior high school English teachers' perceptions and readiness for AI integration in rural contexts such as Ogan Ilir remain scarce. Addressing this gap is essential for informing context-sensitive policies and professional development strategies that support responsible and sustainable AI adoption in ELT.

Addressing this gap, the present study investigates teachers' perceptions, readiness, and perceived barriers concerning AI integration in English language teaching at junior high schools in Ogan Ilir. Specifically, the study formulates the following research questions:

1. What are teachers' perceptions of AI integration in English language teaching?
2. To what extent do teachers demonstrate readiness to implement AI-based tools in classroom practice?
3. What barriers or constraints influence the integration of AI in English teaching?

The objectives of this research are to examine teachers' attitudes toward AI-based instructional innovation, evaluate their readiness level, and identify challenges affecting effective implementation. The findings are expected to contribute to both academic discourse and practical policy development by providing empirical evidence from a rural Indonesian ELT context, highlighting priority areas for teacher professional development, and supporting strategic planning for AI adoption at the school and district levels. The novelty of this study lies in its localized focus and its examination of both perception and readiness within a developing digital ecosystem, providing perspective often overlooked in mainstream AI education research dominated by urban or technologically advanced settings.

In conclusion, understanding teachers' perceptions and readiness is essential for ensuring equitable and effective AI integration in Indonesian ELT. This research is expected to offer insight for policymakers, school leaders, and educators in designing training, infrastructure support, and implementation frameworks that promote responsible and sustainable AI-based pedagogy.

Research Methods

This study adopted a mixed-methods research design that combines quantitative and qualitative approaches to obtain a comprehensive understanding of English teachers' perceptions and readiness toward AI integration in English language teaching (ELT). Mixed-methods designs are widely recommended in educational technology research because they enable the integration of generalizable trends with in-depth contextual insights, thereby enhancing interpretive validity and methodological rigor (Creswell & Creswell, 2018; Almpanis, 2016). In AI-in-education research, such designs are particularly valuable for capturing both attitudinal patterns and classroom-level challenges that may not be fully revealed through survey data alone (Thi Nguyen et al., 2024). In this study, the quantitative phase identified overall perception and readiness patterns, while the qualitative phase was designed to explain, contextualize, and elaborate on these patterns.

The study was conducted in junior high schools across multiple districts in Ogan Ilir Regency, South Sumatera, Indonesia, an area characterized by diverse socioeconomic conditions and uneven digital infrastructure. Of the 145 English teachers invited to participate, 80 completed the questionnaire, representing a substantial proportion of the target population and providing sufficient statistical power for descriptive analysis. The qualitative sample comprised five teachers selected through purposive sampling to ensure information-rich cases rather than statistical representativeness. Selection criteria included teaching experience, school location (urban and rural), and prior exposure to AI-based tools. This limited yet strategically selected sample size is consistent with qualitative research principles, which prioritize depth, relevance, and saturation of themes over numerical scale (Palinkas et al., 2015). Classroom observations were conducted with two teachers who had begun experimenting with AI in instructional practice, allowing focused examination of authentic implementation processes where AI use was observable.

Integration between the quantitative and qualitative phases was operationalized through a sequential explanatory strategy. Survey findings informed the development of interview protocols and observation foci, enabling the qualitative phase to directly address patterns and discrepancies identified in the quantitative data. Convergence and divergence across data sources were examined through methodological triangulation, thereby strengthening credibility and trustworthiness.

Three instruments were used for data collection: a questionnaire, semi-structured interviews, and classroom observations. The questionnaire comprised 30 Likert-scale items measuring two constructs: teachers' perceptions of AI integration (15 items) and teachers' readiness for AI implementation (15 items). Item development was informed by key dimensions commonly emphasized in technology acceptance and integration research, including perceived usefulness, confidence, infrastructural support, motivation, and professional development (Granić & Marangunić, 2019; Viberg et al., 2024). Content validity was established through expert review, and internal consistency reliability was confirmed using Cronbach's Alpha, indicating satisfactory reliability in line with established educational research standards (Fraenkel et al., 2012).

Semi-structured interviews were employed to elicit deeper insights into teachers' beliefs, concerns, and contextual challenges related to AI use in ELT. This flexible format enabled participants to elaborate on experiences that could not be captured through fixed-response items (Rahman, 2024). Classroom observations further enriched the data by documenting real-time instructional practices, teacher–student interaction with AI tools, and technical or pedagogical constraints, thereby providing behavioral evidence to complement self-reported perceptions.

Quantitative data were analyzed using descriptive statistics including means and percentage distributions to categorize levels of perception and readiness. Then, the mean ranges were interpreted using the following criteria (Nyutu et al., 2021):

Table 1. Likert's Means Category

Likert-Scale Description	Likert-Scale	Likert Scale interval
Strongly disagree	1	1.00 - 1.80
Disagree	2	1.81 - 2.60
Neutral	3	2.61 - 3.40
Agree	4	3.41 - 4.20
Strongly agree	5	4.21 - 5.00

Then, the collected data of the mean score was interpreted by the following criteria:

Table 2. Triple Scale of Class Intervals for Interpreting Using the Average

Intervals	Interpretation
1.00 – 2.33	Low Level
2.34 – 3.67	Moderate Level
3.68 – 5.01	High level

(Harpe, 2015)

Qualitative data obtained from interviews and classroom observations were examined through thematic analysis to identify patterns and derive core categories related to benefits, challenges, and implementation constraints. Thematic analysis is widely recognized as a rigorous method for systematically identifying themes in qualitative educational research (Xu & Zammit, 2020). Triangulation was applied to verify consistency across questionnaire, interview, and observation data, thereby reducing bias and enhancing credibility (Creswell & Creswell, 2018).

The integration of both quantitative and qualitative findings was structured to answer the research questions holistically and provide a deeper understanding of the contextual factors influencing AI integration. This methodological approach strengthens the contribution of the study to the field by providing empirically grounded recommendations for AI-based innovation policy, teacher professional training, and future research directions, particularly in rural Indonesian educational contexts where research remains limited.

Findings

1. Teachers' Perceptions of AI Integration in Teaching

The quantitative results indicate that teachers generally hold positive perceptions toward the integration of AI in English language teaching. The overall perception mean score (M = 3.92) falls within the *high* category, demonstrating strong agreement that AI provides pedagogical advantages such as improving instructional efficiency, supporting language skill development, and enhancing student motivation. These findings support earlier studies reporting that AI-based tools can facilitate interactive learning and improve language

performance through real-time feedback and autonomous practice (Luo & Zou, 2024); (Dangwal, 2024). However, unlike prior research emphasizing predominantly optimistic teacher attitudes, the current study reveals a more balanced perspective. Qualitative interview data showed that although teachers recognize the instructional benefits—such as diversified teaching methods, improved student engagement, and reduced lesson preparation time—many simultaneously express reservations concerning the reliability and ethical implications of AI use.

Concerns include the risk of cheating, over-dependence on AI-generated content, and uncertainty about the accuracy of automated responses, which aligns with Sămărescu et al., (2024). This contrasts with Galaczi and Luckin, (2024), who reported minimal resistance among teachers in digitally advanced regions. Thus, the findings of this study highlight contextual variation in teacher perceptions, particularly influenced by resource constraints and limited pedagogical exposure to AI tools.

Table 3. Average Mean Score of Teachers' Perception

Variable	Average Mean Score	Category
Teachers' Perception	3.94	High

2. Teachers' Readiness for AI Integration

The readiness variable demonstrated a *high* level (M = 3.78), indicating that teachers generally show strong willingness and increasing preparedness to adopt AI in English language teaching. Although readiness is not yet optimal, the mean score suggests that teachers possess a positive disposition toward using AI and are gradually developing the competence needed for implementation. This contrasts with findings from Viberg et al. (2024), who reported substantially higher readiness levels in technologically advanced educational environments supported by structured institutional training. In the present context, readiness is positively influenced by teachers' motivation but is limited by practical barriers.

Qualitative interview data reinforce this result, revealing that many teachers feel confident about the potential benefits of AI but require more hands-on experience, professional development, and school-level support to integrate AI effectively. Several participants stated that they have begun exploring AI tools but still rely partly on traditional teaching practices due to limited training and inconsistent access to devices and internet connectivity. Thus, institutional and infrastructural factors remain decisive in determining the extent to which readiness translates into active classroom use.

Table 4. Average Mean Score of Teachers' Readiness

Variable	Average Mean Score	Category
Teachers' Readiness	3.78	High

3. Constraints and Challenges in AI Implementation

Qualitative analysis identified five major categories of constraints affecting the effective integration of AI in English language teaching: infrastructure limitations, training gaps, curriculum alignment issues, ethical concerns, and unequal accessibility. Infrastructure and training emerged as the most critical factors. These findings align with Septian Syarifudin,

(2023)and Rahman, (2024)who similarly reported that inadequate digital facilities and teacher preparedness hinder technology adoption in developing regions. However, unlike previous studies that focused mainly on infrastructural gaps, the current research highlights growing teacher concerns related to academic integrity—specifically plagiarism, over-reliance on AI, and reduced student autonomy—which represent emerging issues requiring urgent policy and pedagogical attention.

Table 5. Identified Constraints in AI Implementation

Constraint Category	Description
Infrastructure limitations	Limited devices and unstable internet connectivity
Training gaps	Lack of workshops and professional development programs
Curriculum alignment	Absence of structured pedagogical integration guidelines
Ethical & integrity issues	Plagiarism, dependency, and academic dishonesty concerns
Unequal access	Disparity between urban and rural school resources

Discussion

This study found that English teachers in junior high schools of Ogan Ilir hold generally positive perceptions toward AI in ELT (M = 3.94.) while also reporting a relatively high level of readiness (M = 3.78). At the same time, teachers identified multiple persistent barriers, most notably infrastructure limitations, training gaps, curriculum alignment issues, ethical concerns, and unequal access that constrain meaningful classroom integration. These results are significant because they show a coexistence of favorable attitudes and practical limitations: teachers are willing and increasingly prepared to adopt AI, yet systemic factors continue to restrict translation of positive dispositions into sustained classroom practice. This combined pattern (positive perception + conditional readiness + structural constraints) underscores that increasing teacher buy-in alone is insufficient for effective AI adoption; enabling conditions at school and policy level are essential.

The findings confirm and extend technology-acceptance perspectives which posit that perceived usefulness and perceived ease of use predict adoption, but also underscore that contextual enablers moderate this relationship. Teachers' high perception scores align with research showing favorable teacher attitudes toward educational AI when pedagogical benefits are apparent (e.g., improved feedback and engagement). However, the presence of persistent infrastructure and training constraints reveals that the attitudinal antecedents identified in models such as TAM and UTAUT do not operate in a vacuum: structural and institutional factors must be included as moderating constructs when applying these models in low-resource contexts. Thus, this study supports a more ecological model of technology adoption in education, one that integrates individual attitudes, school-level capacity, and policy infrastructure rather than models that privilege cognitive beliefs alone.

Practically, the study suggests three priority areas for stakeholders:

1. **Targeted professional development (PD)**: Although readiness is high, teachers reported the need for hands-on training and scaffolded experience with AI tools. Effective PD should be ongoing, practice-based, and contextualized to local classroom realities (e.g., workshops combined with follow-up coaching and peer communities). This aligns with other empirical work showing that teacher competence grows fastest when training is iterative and classroom-embedded.
2. **Infrastructure and technical support**: The gap between perception and classroom use is strongly linked to device shortages and unstable connectivity. Investment in robust, school-level infrastructure and reliable connectivity is a necessary precondition for converting positive attitudes into routine practice. Short-term interventions (offline-compatible AI tools, local servers, blended approaches) can partially mitigate connectivity problems while longer-term investment proceeds.
3. **Clear curriculum and integrity guidelines**: Teachers' ethical concerns; plagiarism, over-dependence, and accuracy of AI outputs indicate an urgent need for curriculum guidance and academic-integrity policies that explicitly address AI. Integrating AI literacy into curriculum standards and assessment guidelines will help teachers use AI to augment learning rather than undermine it. The evidence here echoes other studies that recommend policy frameworks for responsible AI use in schools (Islam et al., 2024).

The study confirms prior findings that teachers generally view AI as pedagogically useful and that AI can enhance engagement and feedback opportunities. At the same time, it disconfirms claims reported in studies from technologically advanced settings that positive perception directly equates to high adoption and seamless integration. In contrast to research conducted in well-resourced contexts where institutional support and readiness are often high, the present findings show that readiness is conditional: teachers may be willing and motivated yet still impeded by resource and policy gaps. This nuance is critical for policymakers who might otherwise equate teacher enthusiasm with implementation success.

Beyond local policy, these findings contribute to broader debates about the role of AI in schooling. First, they indicate that AI's potential to reconfigure teacher roles (toward facilitator/coach) will only be realized where systems invest in teacher agency and capacity building; otherwise, AI risks amplifying inequities by benefitting better-resourced schools while leaving marginalized contexts further behind. Second, the results foreground the ethical dimension of AI in education; as AI becomes embedded in assessment and content creation, institutions must balance efficiency gains with safeguards for authenticity, fairness, and data privacy. These consequences suggest that educational AI should be considered as a sociotechnical system requiring coordinated action across pedagogy, infrastructure, and governance (Granström & Oppi, 2025).

This study's mixed-methods design provides convergent evidence, but limitations remain: the sample is localized to Ogan Ilir junior high contexts and may not generalize to other Indonesian regions or national systems. Future research should examine longitudinal

outcomes of PD initiatives, test interventions that combine offline-capable AI tools with school-level capacity building, and investigate student learning outcomes linked to teacher use of AI. Experimental or quasi-experimental designs could clarify causal pathways from teacher readiness to actual student achievement gains. Finally, comparative studies across regions with differing resource endowments would illuminate how structural factors interact with teacher-level variables (Lucas et al., 2025).

Understanding teacher perception and readiness is not an abstract academic exercise; it directly affects whether AI will deepen educational opportunity or widen existing divides. The study's evidence positive perceptions paired with conditional readiness suggests that investments in AI for education must be holistic: building teacher capacity, strengthening infrastructure, and crafting policy safeguards concurrently. Doing so will maximize AI's pedagogical benefits while minimizing ethical and equity risks, thereby advancing responsible and context-sensitive integration of AI into ELT (Ananayo Echave et al., 2024).

Conclusion

This study aimed to investigate English teachers' perceptions and readiness toward the integration of Artificial Intelligence in teaching at junior high schools in Ogan Ilir. The findings indicate that teachers hold positive perceptions of AI and demonstrate a relatively high level of readiness to utilize AI tools in instructional processes. These results suggest that teachers recognize the potential of AI to enhance pedagogical practices, support differentiated learning, and improve efficiency in assessment and feedback. However, the study also highlights that the realization of AI-supported learning depends substantially on systemic factors such as infrastructure availability, professional development, institutional policies, and ethical guidelines.

In relation to the research objectives, the study concludes that fostering effective AI integration requires more than individual teacher willingness; it necessitates coordinated school-level and policy-level action. Schools need to strengthen technical infrastructure, provide structured and continuous training, and develop guiding frameworks that support responsible AI use. Policymakers and school leaders should consider AI literacy and digital competency as core components of teacher development programs and curriculum design. Furthermore, collaboration between stakeholders—including teachers, technology providers, and educational authorities—will be essential to create sustainable and equitable implementation across diverse school contexts.

Future work may explore intervention-based studies that examine the impact of specific training models, investigate student learning improvements associated with AI use, or compare resources and readiness across regions. The broader implication is that AI has considerable potential to transform English language teaching when supported strategically; thus, schools and governments must approach AI integration as a long-term investment in educational innovation rather than a temporary trend.

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