

Teacher Perception in Using Artificial Intelligence in Developing Language Assessment

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Abstract

This study investigates English language teachers' perceptions of using Artificial Intelligence (AI) in developing language assessment in junior high school education contexts. Employing a sequential explanatory mixed-methods design, this study involved 52 English language teachers across Bukittinggi. Data were collected through a validated 35-item Likert-scale questionnaire (TPALA-Q) and semi-structured interviews with fifteen participants. Quantitative data were analyzed using descriptive statistics and one-way ANOVA, while qualitative data underwent thematic analysis. Results indicate moderately positive overall perceptions ($M = 3.41$), with Perceived Usefulness rated highest ($M = 3.62$) and Concerns and Ethics also prominent ($M = 3.89$). Institutional type significantly influenced readiness levels. Teachers recognize AI's efficiency benefits but raise concerns about validity, data privacy, and professional deskilling. These findings offer implications for Artificial Intelligence (AI) integration policy and teacher professional development in EFL assessment contexts.

INTRODUCTION

The integration of Artificial Intelligence (AI) into educational settings has been one of the most transformative developments in 21st-century pedagogy. Artificial Intelligence (AI) technologies, ranging from natural language processing (NLP) tools to machine learning-driven platforms, have begun reshaping how educators design, deliver, and evaluate language learning. Within the field of English as a Foreign Language (EFL) education, language assessment occupies a central role in gauging learner progress and informing instructional decisions. As such, the emergence of AI-assisted assessment tools has attracted considerable academic and practical attention (Cheng & Wang, 2022; Huang et al., 2021).

Language assessment, traditionally conceived as a human-driven process, now faces significant disruption due to Artificial Intelligence (AI) capabilities that promise automated scoring, adaptive testing, and real-time feedback mechanisms. Tools such as Grammarly, Turnitin, IELTS Preparation Artificial Intelligence (AI), and various large language model (LLM)-based systems are increasingly available to teachers and learners (Zawacki-Richter et al., 2019). These tools offer potential advantages including consistency in scoring, time efficiency, and the capacity to handle large

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volumes of student work. However, their adoption in formal educational assessment contexts remains uneven and contested.

Teachers, as the primary architects of classroom assessment, play a decisive role in whether and how Artificial Intelligence (AI) tools are adopted in language evaluation. Their perceptions, attitudes, and beliefs toward technology significantly mediate the degree to which innovations are integrated into practice (Davis, 1989; Venkatesh et al., 2003). Research suggests that teachers' perceptions of educational technology are shaped by factors including perceived usefulness, ease of use, institutional support, and concerns about pedagogical appropriateness (Bates, 2022; Teo, 2011).

Despite a growing global body of literature on Artificial Intelligence (AI) in education (AIED), relatively few studies have examined teachers' perceptions specifically within the context of language assessment in Southeast Asian EFL settings. Indonesia, with its vast and diverse educational landscape, presents a compelling context for such inquiry. The country has been actively pursuing educational technology integration as part of its national digitalization agenda (Kebudayaan, 2020), yet empirical research on how teachers perceive and respond to AI-driven assessment tools remains scarce.

This study therefore aims to fill this gap by systematically investigating English language teachers' perceptions of using Artificial Intelligence (AI) in developing language assessment in West Sumatra, Indonesia. Guided by the Technology Acceptance Model (TAM) and the SAMR framework (Substitution, Augmentation, Modification, Redefinition), this research examines: i) the general level of teachers' perceptions of Artificial Intelligence (AI) in language assessment; ii) the specific dimensions of perception including utility, concern, and readiness; and iii) factors influencing these perceptions. The findings are expected to contribute both theoretically and practically to the discourse on Artificial Intelligence (AI) integration in EFL education.

Artificial Intelligence in education (AIED) refers to the application of computational systems designed to perform tasks that typically require human cognition, such as recognizing patterns, generating feedback, and making predictions (Holmes et al., 2019). In educational settings, Artificial Intelligence (AI) manifests in various forms including intelligent tutoring systems (ITS), automated essay scoring (AES), chatbots, and adaptive learning platforms. These technologies have demonstrated promising outcomes in enhancing learner engagement, personalizing instruction, and providing formative feedback at scale (Zawacki-Richter et al., 2019).

The adoption of Artificial Intelligence (AI) in education has grown substantially over the past decade, driven by advances in machine learning, big data analytics, and natural language processing. Research has documented AI's application across disciplines and educational levels, with particular concentration in STEM education, higher education, and language learning (Luckin et al., 2019). However, alongside the enthusiasm for AI's potential, critical scholarship has raised concerns about algorithmic bias, data privacy, the reduction of human agency, and the risk of over-reliance on automated systems (Shermis & Burstein, 2019).

Language assessment has long been considered a domain that demands nuanced human judgment, cultural sensitivity, and contextual interpretation. However, Artificial Intelligence (AI) has increasingly demonstrated competence in evaluating specific linguistic features such as grammatical accuracy, lexical diversity, cohesion, and even pragmatic appropriateness (Heenan et al., 2023). Automated Essay Scoring (AES) systems, for instance, have achieved validity and reliability levels comparable to human raters in standardized testing contexts (Shermis & Burstein, 2019).

More recent developments in large language models (LLMs), including GPT-4

and its successors, have expanded the capabilities of AI-assisted assessment to encompass open-ended writing tasks, oral proficiency simulation, and multimodal assessment (Kasneci et al., 2023). These tools can generate detailed, rubric-aligned feedback on student writing within seconds. Nevertheless, researchers caution that Artificial Intelligence (AI) tools often struggle with evaluating higher-order thinking, creativity, and culturally embedded linguistic choices (Lee & Briggs, 2021).

Teacher perception is a multi-dimensional construct encompassing beliefs, attitudes, and subjective evaluations about a given phenomenon (Pajares, 1992). In the context of educational technology, perception functions as a significant predictor of adoption behavior (Davis, 1989). The Technology Acceptance Model (TAM), originally developed by Davis (1989), posits that perceived usefulness and perceived ease of use are the two principal determinants of technology adoption intentions.

Research on EFL teachers' perceptions of technology in language assessment reveals a nuanced picture. While many teachers acknowledge the potential of technology to improve assessment efficiency and feedback quality, they often express concerns about validity, fairness, and the depersonalization of assessment (Bates, 2022; Teo, 2011). Studies specific to Artificial Intelligence (AI) in language assessment have begun to emerge in recent years. (Li et al., 2022) found that Chinese EFL teachers were cautiously optimistic about Artificial Intelligence (AI) scoring tools but demanded greater transparency in algorithmic decision-making. To date, however, Indonesian EFL teachers' perceptions of Artificial Intelligence (AI) in language assessment remain underexplored, constituting a significant gap that this study addresses.

METHODS

This study employs a sequential explanatory mixed-methods design (Anidar et al., 2026; Efendi et al., 2026; Engkizar et al., 2026; Cresweel, 2007; Johnson & Onwuegbuzie, 2004), wherein quantitative data are collected and analyzed first, followed by qualitative data intended to explain and elaborate upon the quantitative findings. This design is particularly appropriate for investigating perceptions, as it allows for both breadth of measurement and depth of understanding (Aryasutha et al., 2025; Cheng & Wang, 2022; Engkizar et al., 2025; 2026; Johnson & Onwuegbuzie, 2004; Kasheem et al., 2025; Khairunisa et al., 2025; Yeh et al., 2022).

The study involved 52 English language teachers from junior high school in Bukittinggi. Participants were recruited through purposive and snowball sampling. Inclusion criteria required that participants be currently practicing English teachers with at least one year of formal teaching experience. A subset of fifteen teachers were purposely selected for follow-up semi-structured interviews based on their questionnaire responses to achieve maximum variation in perceptions.

Demographic data revealed that 62.4% of participants were female and 37.6% male, with teaching experience ranging from 1 to 28 years ($M = 9.3$, $SD = 6.7$). In terms of educational background, 71.8% held a Bachelor's degree in English Education, 25.9% held a Master's degree, and 2.3% held a Doctoral degree. Approximately 43.5% reported having some prior experience with AI tools in their teaching practice.

Two instruments were used in this study. First, the Teachers' Perception of Artificial Intelligence (AI) in Language Assessment Questionnaire (TPALA-Q) was developed and validated for this study. The TPALA-Q consists of 35 items across five subscales: i) Perceived Usefulness of AI in Assessment (PUA, 8 items); ii) Perceived Ease of Use (PEU, 6 items); iii) Concerns and Ethical Considerations (CEC, 8 items); iv) Institutional and Professional Readiness (IPR, 7 items); and v) Integration Intentions (II, 6 items). Items were rated on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Content validity was established through expert review by three ELT specialists and two Artificial Intelligence (AI) education researchers. Construct validity was confirmed via confirmatory factor analysis (CFA) yielding acceptable fit indices (CFI = .94, RMSEA = .058). Internal consistency was satisfactory across all subscales (Cronbach's α = .78–.91). Second, a semi-structured interview protocol consisting of eight open-ended questions was used to elicit teachers' narratives about their experiences, beliefs, and concerns regarding AI in language assessment.

The questionnaire was distributed digitally via Google Forms between June 2026. Completed questionnaires were received from all 52 participants, yielding a 100% response rate. Quantitative data were analyzed using SPSS 26.0. Descriptive statistics (means and standard deviations) were computed for each subscale. One-way ANOVA was conducted to examine whether perceptions differed significantly by teaching experience and educational level. Qualitative data were analyzed using thematic analysis following Braun & Clarke, (2012) six-phase framework. Member checking and peer debriefing were employed to enhance the trustworthiness of qualitative findings.

RESULT AND DISCUSSION

General Perceptions of Artificial Intelligence (AI) in Language Assessment

Table 1 presents the descriptive statistics for teachers' perceptions across the five subscales of the TPALA-Q. Overall, teachers demonstrated moderately positive perceptions of AI in language assessment ($M = 3.41$, $SD = 0.62$), suggesting a cautiously optimistic orientation.

Table 1. Descriptive Statistics of Teachers' Perceptions of Artificial Intelligence (AI) in Language Assessment (N=52)

Subscale	N	Min	Max	M	SD	Interpretation
Perceived Usefulness (PUA)	52	2.13	5.00	3.62	0.58	Positive
Perceived Ease of Use (PEU)	52	1.83	5.00	3.28	0.71	Moderate
Concerns & Ethics (CEC)	52	2.50	5.00	3.89	0.54	High Concern
Institutional Readiness (IPR)	52	1.71	4.86	3.11	0.69	Moderate
Integration Intentions (II)	52	1.67	5.00	3.17	0.74	Moderate
Overall	52	-	-	3.41	0.62	Moderately Positive

Perceived Usefulness emerged as the highest-rated subscale ($M = 3.62$, $SD = 0.58$), indicating that teachers generally recognize the functional value of Artificial Intelligence (AI) in streamlining assessment tasks, generating feedback, and ensuring consistency in scoring. Concerns and Ethical Considerations, however, also received notably high scores ($M = 3.89$, $SD = 0.54$), reflecting strong apprehension about the ethical implications of AI-driven assessment.

Perceived Usefulness and Ease of Use

Analysis of individual items within the Perceived Usefulness subscale revealed that teachers most strongly agreed that Artificial Intelligence (AI) tools can provide faster feedback to students ($M = 3.91$) and help reduce the time burden of assessment ($M = 3.78$). These findings align with international literature suggesting that efficiency is a primary driver of AI adoption in assessment contexts (Foltz et al., 2013; Huang et al., 2021).

Qualitative data reinforced these quantitative findings. When asked about the benefits of Artificial Intelligence (AI) in assessment, teachers frequently mentioned time efficiency and scalability. As one participant articulated: *"With Artificial Intelligence (AI), I can give written feedback to 40 students in a fraction of the time. Before, it would take me the*

whole weekend just to mark one set of essays.” This perspective resonates with findings from Cheng and Wang (2022), who similarly documented that EFL teachers value Artificial Intelligence (AI) primarily as a labor-saving mechanism.

Regarding Perceived Ease of Use ($M = 3.28$), teachers expressed mixed views. While many were familiar with general-purpose tools like Grammarly (68.2% reported regular use), specialized Artificial Intelligence (AI) assessment platforms were less familiar. Teachers with limited digital literacy backgrounds consistently rated ease of use lower, suggesting that interface design and accessibility remain important considerations for Artificial Intelligence (AI) tool developers.

Concerns and Ethical Considerations

The Concerns and Ethical Considerations subscale yielded the highest mean score ($M = 3.89$), indicating that teachers harbor significant apprehensions about AI-driven assessment. The most frequently endorsed concerns included: the potential for Artificial Intelligence (AI) to misinterpret culturally specific language use ($M = 4.12$), privacy and data security of student responses ($M = 4.08$), and the risk of Artificial Intelligence (AI) perpetuating bias in language evaluation ($M = 3.94$).

Thematic analysis of interview data identified three dominant themes related to concerns: (1) Validity and Fairness, (2) Data Ethics and Privacy, and (3) Deskillng and Professional Identity. Teachers were particularly vocal about validity, expressing doubt that AI could adequately assess complex communicative competencies. One teacher noted: *“Artificial Intelligence (AI) can check grammar, vocabulary, maybe structure. But can it understand whether a student is communicating appropriately in a given cultural context? I don’t think so.”*

Concerns about professional identity were also salient. Several teachers articulated a fear that AI-driven assessment would marginalize their professional expertise and judgment. This concern aligns with (Shermis & Burstein, 2019) critique of Artificial Intelligence (AI) in education as potentially deskillng educators and reducing their role to that of data interpreters rather than pedagogical decision-makers. Institutional Readiness and Professional Support

The Institutional and Professional Readiness subscale ($M = 3.11$) revealed that many teachers feel inadequately supported to integrate Artificial Intelligence (AI) into their assessment practices. A one-way ANOVA indicated significant differences in institutional readiness perceptions by institutional type ($F(2,82) = 6.48, p = .002, \eta^2 = .14$), with higher education teachers reporting greater institutional support ($M = 3.47$) compared to secondary school teachers ($M = 2.89$).

Table 2. ANOVA Results: Institutional Readiness by Institutional Type

Source	SS	df	MS	F	p	η^2	Interpretation
Between Groups	5.84	2	2.92	6.48	.002*	.14	Significant
Within Groups	36.97	82	0.45	-	-	-	-
Total	42.81	84	-	-	-	-	-

Note. * $p < .05$

Qualitative interviews elaborated on these disparities, with secondary school teachers describing a lack of AI-related professional development opportunities, inadequate infrastructure, and institutional ambivalence toward technology integration. In contrast, university-level teachers reported access to Artificial Intelligence (AI) platforms through institutional licenses and described peer learning communities that facilitated Artificial Intelligence (AI) adoption.

The findings of this study collectively paint a picture of moderate positivity tempered by significant concern among Indonesian EFL teachers regarding Artificial Intelligence (AI) in language assessment. This pattern is consistent with findings from other Asian EFL contexts (Huang et al., 2021; Song et al., 2024), suggesting that ambivalence toward Artificial Intelligence (AI) assessment tools may be a broadly

shared characteristic of EFL teaching communities in the region.

The high perceived usefulness scores suggest that teachers recognize the instrumental value of Artificial Intelligence (AI) in managing workload and providing rapid feedback. However, the equally high concern scores indicate that teachers do not simply accept Artificial Intelligence (AI) as a panacea. This dual recognition of utility and risk may reflect a sophisticated pedagogical awareness: teachers understand what Artificial Intelligence (AI) can do, but they also understand what it cannot do. This interpretation is supported by Bates (2019), who argues that effective technology integration requires teachers to critically evaluate tools against their pedagogical goals rather than adopting them uncritically.

The significant role of institutional factors in shaping teacher perceptions deserves particular attention. The ANOVA results confirm that teachers in better-resourced institutions report greater readiness for Artificial Intelligence (AI) integration. This points to systemic inequities in Artificial Intelligence (AI) access and support that risk creating a digital divide within the Indonesian educational landscape. Policymakers must therefore address not only the availability of Artificial Intelligence (AI) tools but also the provision of equitable professional development and infrastructure support across institutional types.

CONCLUSION

This study investigated English language teachers' perceptions of using Artificial Intelligence (AI) in developing language assessment in Bukittinggi. Through a sequential explanatory mixed-methods approach, the findings reveal moderately positive overall perceptions characterized by recognition of AI's utility in efficiency and feedback provision, alongside substantive concerns regarding validity, ethics, data privacy, and professional identity. The study contributes empirical data from an underrepresented EFL context, demonstrating the complex, multidimensional nature of teacher perception that cannot be reduced to simple acceptance or rejection of Artificial Intelligence (AI), and highlighting the critical role of institutional support and professional development in shaping teacher readiness.

Teacher professional development programs should not only address technical skills but also cultivate critical Artificial Intelligence (AI) literacy, enabling teachers to evaluate Artificial Intelligence (AI) tools against principled assessment frameworks. Furthermore, Artificial Intelligence (AI) tool developers should consult language educators in tool design to ensure that AI-generated assessments are pedagogically valid and culturally sensitive. Future research should employ longitudinal designs to trace how perceptions evolve following sustained Artificial Intelligence (AI) tool use, and should investigate student perspectives to provide a more complete picture of AI's impact on language assessment ecosystems.

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