

Fractured Adoption: A Qualitative NVivo Study of Teachers' and Students' Divergent Perceptions of AI in Informal Indonesian EFL

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Abstract. In low-exposure English as a Foreign Language (EFL) contexts, where only one organized session is available each week, generative artificial intelligence (AI) tools are increasingly used to supplement limited class time. Few studies have explored how teachers and students within the same non-formal institution use these technologies. Non-formal settings remain under-researched, such as the Taman Pendidikan Al-Qur'an (TPQ), a non-formal Islamic educational institution in Bandung Regency, West Java, Indonesia, that teaches English once a week. A qualitative descriptive study assessed the perceptions of 17 students and 5 teachers regarding AI. Data from a bilingual, open-ended reflective questionnaire were thematically analyzed in NVivo 14 across five domains: awareness, perceived benefits, challenges, fears and concerns, and motivation for future use. The findings indicate that the divergence is role-based, not generation- or attitude-based. Students were impressed by how quickly AI could help with translation and grammar, and they could access it outside class. Teachers were more cautious, pointing to cognitive dependence, output accuracy, and the loss of independent learning. Both groups expressed ethical concerns, but about different forms of over-reliance. The gap is attributable not to incompatible mindsets about technology but to structural issues: limited contact hours, uneven digital proficiency, and the lack of institutional AI policy. These results suggest that AI literacy interventions in non-formal EFL contexts should involve teachers and students together and that national AI-in-education frameworks should explicitly address non-formal institutions, which are barely mentioned in current policy discourse.

Keywords: *artificial intelligence; EFL; Indonesia; nonformal education; learner autonomy; teacher perception*

INTRODUCTION

Artificial intelligence (AI) has quickly become part of Indonesian education policy discourse, with national frameworks promoting its integration as a way to modernize instruction and improve learning outcomes [1]. This optimism, however, is set against a continuing structural reality: Indonesia is one of the most educationally unequal countries in Southeast Asia, with many schools in rural and eastern areas still lacking proper facilities, trained teachers, and reliable connectivity [2]. National enthusiasm for AI is poorly reconciled with these ground-level infrastructural deficits.

This tension is not just logistical; it is pedagogical and distributive. Framing AI integration as a panacea presupposes a baseline of devices, online literacy, connectivity, and teacher readiness that many Indonesian learners and teachers do not have [3], [4]. Without this baseline, AI implementation risks widening rather than closing educational gaps and disproportionately favoring already-advantaged learners [4], [5]. The democratizing potential often attributed to AI cannot be evaluated in isolation from the systemic inequities into which it is introduced.

This problem is concrete in English as a Foreign Language (EFL) teaching. In many non-formal and non-governmental Indonesian institutions, English is taught only once a week, so the classroom is the only formal setting for exposure to the language [6]. In these contexts, free-to-access AI tools (e.g., ChatGPT, Grammarly, Google Translate) are readily available practice supplements outside the classroom [7], compensating for instructional time these institutions cannot provide.

However, accessibility alone does not determine how AI is experienced or evaluated. Teachers and students occupy structurally different positions within the same institution, and these positions shape their perceptions, adoption, and resistance regarding AI tools [8]. Students tend to use AI as a responsive problem-solving tool out of immediate practical need. Teachers, whose responsibility is the quality of learning, more

often evaluate AI by what it may displace pedagogically than by what it adds [9], [10]. If left unchecked, this divergence threatens to exacerbate the inequities that AI integration seeks to address.

Empirical studies of role-based divergence in non-formal Indonesian EFL settings remain scarce. Current research focuses predominantly on formal university and secondary-school settings [11]–[13], while low-exposure, non-formal settings, where the risks of AI misuse and over-reliance are arguably most acute, are comparatively under-explored [11]. The literature has also paid insufficient attention to Islamic educational institutions, particularly non-formal ones such as *pesantren* and the *Taman Pendidikan Al-Qur'an* (TPQ), which serve many Indonesian learners, although tensions between limited contact hours and the demand for English are documented in these settings [5], [14].

This study addresses that gap. This qualitative descriptive study was conducted at Darussalam Daar Es-Salam Al-Islami, a non-formal Islamic educational institution in Bandung Regency, West Java, where English is taught once a week. It explored how 17 students and 5 teachers perceived and used AI tools in learning English. Using NVivo-assisted thematic analysis of reflective questionnaire responses, the study aims to (1) document each group's awareness and use of AI tools; (2) identify each group's perceived benefits, challenges, and concerns regarding AI; and (3) examine how institutional role shapes divergent attitudes toward AI in a low-exposure, infrastructure-limited EFL setting.

METHODS

Study area

This study draws on two intersecting theoretical perspectives. First, learner autonomy theory conceptualizes the learner as an active, self-directed agent capable of learning outside formal instruction [16]; within this view, AI tools function as autonomy-supporting resources, particularly where teacher-mediated instruction is constrained by limited contact time [17]. Second, role-based technology perception, an extension of user acceptance research in educational technology, holds that institutional role (student versus teacher) systematically shapes how individuals interpret, adopt, or resist digital tools [18]. Together, these frameworks provide the conceptual lens through which the divergent perceptions reported below are interpreted.

Research Design

A qualitative descriptive design was employed in this study, which is suitable for exploring how participants understand and make sense of their experiences without pre-determining categories [19]. The design is not about quantifying the scale of AI adoption but rather about cultivating a greater understanding by relating to the participants and capturing the nuances and contradictions in their own words. NVivo 14 was employed to systematically code and visualize themes.

Research Setting and Participants

This study was conducted in Darussalam Daar Es-Salam Al-Islami, a non-formal Islamic educational institution (*lembaga pendidikan non-formal*) in Bandung Regency, West Java, Indonesia. The institution provides a *tahfidz* (Qur'an memorization) program, where religious education is the core and English is a supplementary subject, once a week, following the low-exposure EFL profile outlined above.

The participants were selected through purposive sampling. Twenty-two respondents completed the questionnaire: 17 students (10 male, 7 female) who were actively involved in English instruction and 5 teachers (3 male, 2 female) who were involved in the delivery of English instruction. The unequal group sizes are a true reflection of the institution's actual staffing/enrollment ratio rather than a sampling limitation; proportional, within-group analysis was used during coding to allow for valid cross-group comparison despite the numerical asymmetry.

Research Instrument

Data were collected using a reflective questionnaire in two languages, Bahasa Indonesia and English, which were distributed through Google Forms during October 20-21, 2025. The instrument comprised five open-ended questions, which probed into (1) previous awareness and use of AI tools, (2) perceived potential of AI to help with English learning outside of class, (3) perceived benefits, (4) perceived challenges, concerns, or risks, and (5) anticipated motivation or reluctance to use AI in the future. Following qualitative descriptive practice [20], open-ended items were developed to elicit self-generated (not constrained categorical) responses.

Data Analysis

Responses were exported from Google Forms, organized by participant role, and translated from Bahasa Indonesia to English before analysis. Data were thematically coded using NVivo 14.

The coding was done in three phases. Initially a coding structure was deductively developed from the research questions, which comprised five primary themes: Awareness, Benefits, Challenges, Fears and Concerns, and Motivation, each refined into sub-codes (e.g., Awareness: heard of/know of; Benefits: translation assistance, learning support, efficiency, and access; Challenges: inaccuracy, dependency, lack of understanding; Fears and Concerns: misuse, losing critical thinking skills, laziness; Motivation: willingness, reluctance). Second, responses were coded against these themes via sequential close reading. Third, matrix coding query, word frequency analysis, and project mapping tools in NVivo were used to identify convergence and divergence between participant groups. The matrix output was reconfigured to enable direct student-teacher comparison across all thematic dimensions. Trustworthiness was ensured by extensive procedural transparency, role-based triangulation throughout the coding process, and transparent documentation of coding decisions [21].

RESULTS AND DISCUSSION

NVivo matrix coding analysis of the 22 questionnaire responses generated a structured thematic map across five dimensions: awareness, perceived benefits, challenges, fears and concerns, and motivation for future use. Results are organized by theme, with cross-group comparisons integrated throughout. Participant responses are identified as Student (S) or Teacher (T) with a corresponding response number. Figure 1 shows the project map linking cases to codes; Figure 2 shows the coding structure applied across the analysis.

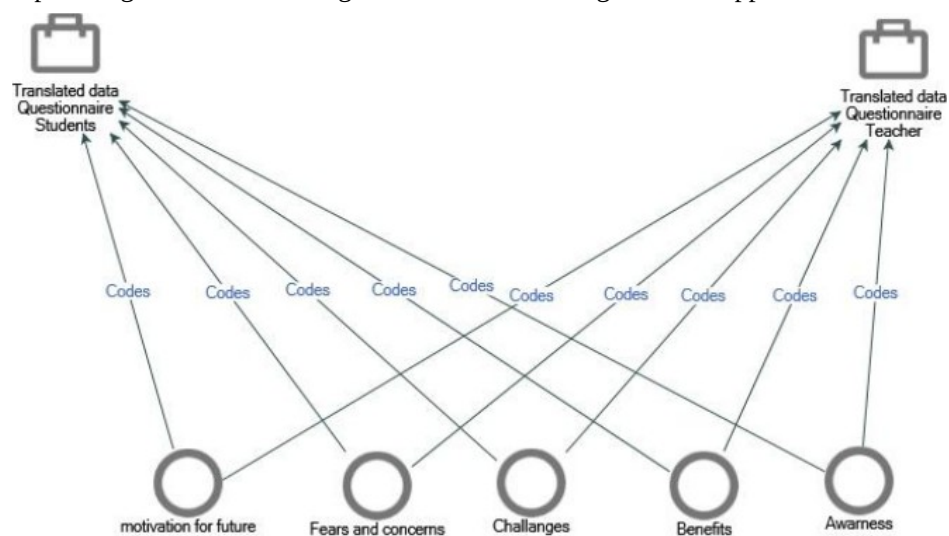


Figure 1. NVivo project map: cases mapped to thematic codes.

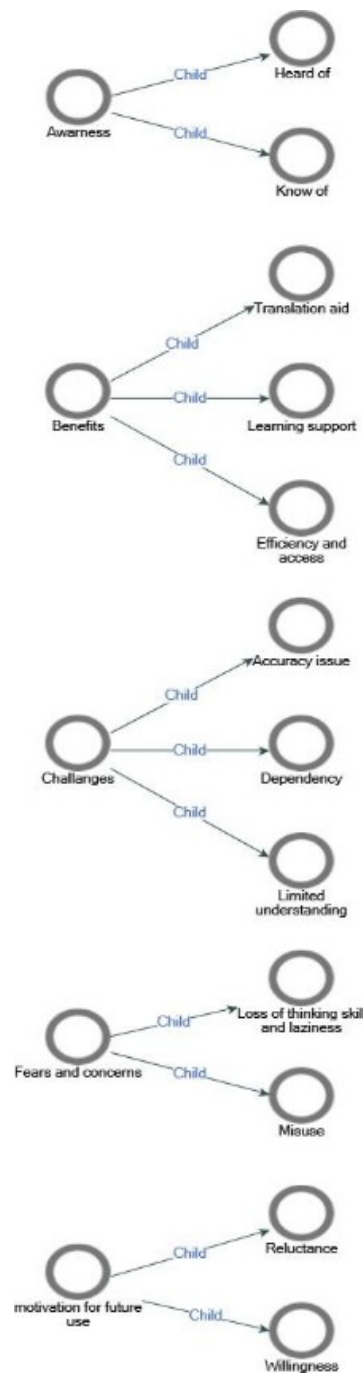


Figure 2. NVivo coding structure: primary themes and sub-codes.

Awareness of AI Tools

Students made more than twice as many references to awareness (12) than teachers (5). The dominant student sub-code was the “know of” (9 references) and indicated direct exposure to tools such as Google Translate, ChatGPT, and Grammarly from schoolwork and informal use. One student reported that AI is a tool “to help find information or help solve tasks or problems” (S1), while another student reported using Google Translate because it is “faster in interpreting languages or words that I don’t understand” (S10).

Teachers, in contrast, were grouped in the “heard of” sub-code, indicating conceptual familiarity as opposed to experiential, usually through professional exposure rather than personal adoption. One teacher described AI as “a fast-paced tool” (T1) for searching keywords; another said they mainly used AI for coding and programming rather than teaching language (T3). This pattern corresponds to previous studies of EFL technology, which have found that younger students who are more immersed in digital technology often have a greater familiarity with tools than their teachers [22]; in a low-exposure environment, this asymmetry is of particular interest, as students seem to be developing AI literacy independently, filling a gap that the institution does not formally address.

Perceived Benefits

Students reported high levels of engagement in all three benefit sub-codes: translation aid (8), learning support (8), and efficiency and access (7). Responses consistently made AI personally instrumental, immediate, available, and responsive. One student expressed this compensatory function explicitly: “When we are outside of class and we don’t know what an English word or sentence means, and there are no teachers or parents to ask, we can use the tool as a helping hand” (S9). S14 spoke about the multimodal aspect of AI for “the development of speaking, writing, and listening in casual or everyday language.”

The teachers identified pedagogical benefits (5) and learning support (7) but expressed these more tentatively, i.e., in terms of anticipated student results rather than personal usefulness. One teacher hoped AI would “make kids more active in speaking English and add to the number of words they know” (T2). Another one was interested but unsure: “I want to learn English with AI, but I’m not sure where to start” (T1). This pattern is in line with results from West Java Islamic university settings, where ICT-based learning led to varying student engagement between active student use and more conditional instructor assessment [23], and supports evidence that ChatGPT-assisted learning can activate students’ prior knowledge but still needs contextual scaffolding [24].

These differences are not confined to attitude but to structural orientation: students benefit directly and immediately, and teachers look to the future and institutional benefit. This study characterizes the pattern as a student logic of convenience versus a teacher logic of consequence, two internally coherent but structurally different orientations to the same technology, neither of which is unreasonable given the constraints of once-weekly instruction. The issue is not the divergence but the absence of structured dialogue between the two logics, leading to a gap which grows by default rather than design.

Challenges

Overall, students made the greatest number of references to challenges (12), focusing on issues of accuracy (8) and a lack of understanding (6) due to real experience: translations not matching classroom teaching and contextually inappropriate answers and outputs that require prior knowledge to be critically assessed. One student commented that “the language that is translated is different from the one that is learned” (S2), and another stated that “AI answers are dubious and different from what is taught by teachers, even other books” (S10). A third expressed concern that AI was “not always like what the teacher says” (S5), a framing that suggests that even when considering independent AI use, the teacher continues to be the students’ implicit epistemic authority.

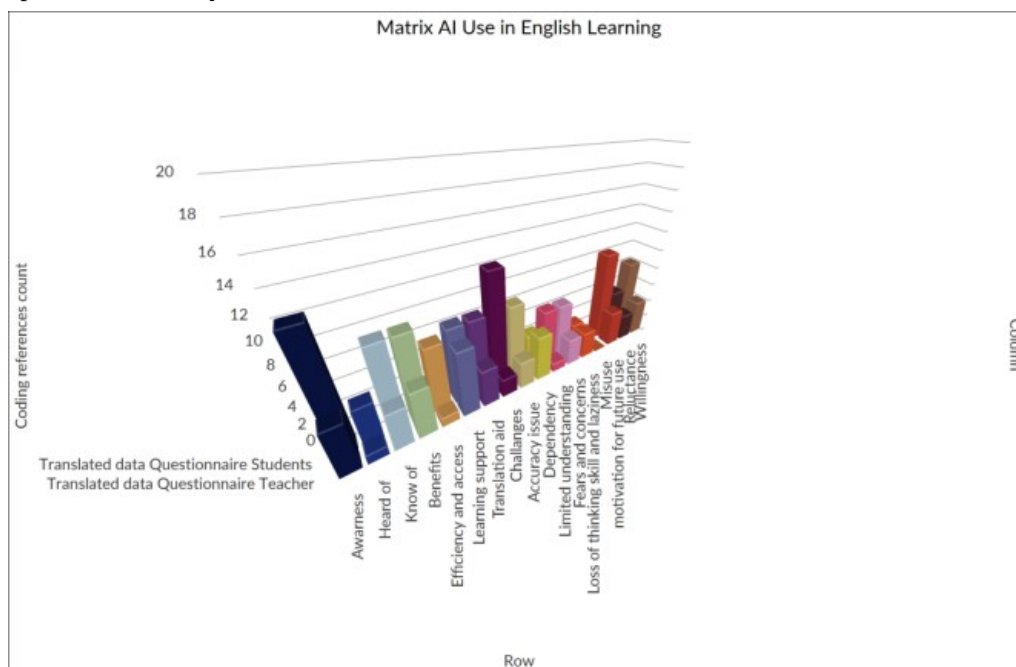


Figure 3. NVivo matrix coding query: coded references by theme and participant group.

Teachers made fewer direct challenge references (2) but expressed significantly greater concern about dependency (5), i.e., the danger that students would depend on AI output rather than developing independent linguistic competence. We get obsessed with ChatGTP and don’t want to think for ourselves’ (T1), said one teacher, while another warned that ‘over-reliance on artificial intelligence can make a person less able to practice thinking or writing independently’ (T3). This is consistent with larger evidence that unscaffolded generative AI use is associated with cognitive offloading and reduced independent evaluation of information

[25], [26]. Interestingly the accuracy problems students report empirically are precisely those that teachers anticipate abstractly, a point of convergence that remains unexploited in the absence of structured exchange between the two groups.

	A : Translated data Questionnaire Students	B : Translated data Questionnaire Teacher
1 : Awareness	12	5
2 : Heard of	4	1
3 : Know of	9	4
4 : Benefits	9	5
5 : Efficiency and access	7	1
6 : Learning support	8	7
7 : Translation aid	8	4
8 : Challenges	12	2
9 : Accuracy issue	8	3
10 : Dependency	4	5
11 : Limited understanding	6	1
12 : Fears and concerns	6	3
13 : Loss of thinking skill and laziness	3	3
14 : Misuse	1	0
15 : motivation for future use	10	4
16 : Reluctance	5	3
17 : Willingness	8	4

Figure 4. NVivo matrix coding query (transposed): cross-group comparison.

Fears and Concerns

Both groups expressed concern, albeit in different ways. Students (6 references) expressed concern about losing their thinking ability and becoming lazy, an ethical awareness that several respondents mentioned on their own. "I'm worried that we're going to become dependent on AI tools if we keep using them" (S9), one said directly, and another expressed fear of losing self-regulation: "I was worried that I couldn't control myself when I used AI" (S13). Only one reference addressed misuse (S3), indicating that ethical awareness at this stage is still emerging rather than fully consolidated.

Teachers (3 references) focused on the population level rather than the individual level and addressed concerns of cognitive decline and institutional readiness rather than personal dependency. One pointed out that "not every translation or correction from AI is always correct, so critical skills are still needed" (T3). Students' self-reported fears and teachers' institutional concerns are substantively convergent; both focus on uncritical AI use producing linguistic passivity, but this convergence does not seem to translate into shared discourse. It implies that the perceptual gap is not as large as it appears on the surface but is still institutionally unmet.

Motivation for Future Use

The highest number of student references (10) and the most complex internal pattern were produced by motivation: strong interest in continued use (8) with significant reluctance (5), the latter self-imposed more than externally imposed. Several students associated willingness with self-regulation: "I am sure that I can get through these challenges if I believe in myself and take care of myself" (S13). Others limited the intended use to certain circumstances: "I will not use the tool all the time but only use it in certain urgent situations" (S9).

Teachers' conditional willingness (4 references) was always associated with pedagogical justification. One teacher's response directly represented this tension: "Aside of teaching, I'm also an informatics engineering student; I'm more likely to use AI to help me in the domain of coding and not use AI to learn English" (T4). This shows that high online literacy does not necessarily translate into pedagogical AI adoption. Another teacher's uncertainty, "I want to learn English with AI, but I'm not sure where to start" (T1), indicates that hesitation rather than resistance might be the main barrier to teacher-side adoption.



Figure 5. NVivo word frequency cloud: most frequent terms across all participant responses.

Discussion

Taken together, the five thematic dimensions reveal a disconnect that individual attitude or generational difference cannot fully account for. Students exhibit an experiential relationship with AI: responsive, efficient, and compensatory for limited English exposure. Teachers exhibit a reflective relationship: cautious, principled, and oriented toward the long-term integrity of learning. Neither position is unwarranted; both are coherent responses to the same resource-constrained institutional environment.

The central question this pattern raises is what occurs when these two logics operate without institutional mediation. In formal institutions with established professional-development infrastructure, this gap can be narrowed through AI literacy programming, shared policy frameworks, or structured teacher-student dialogue [27], [28]. Nonformal institutions such as the one studied here typically lack this infrastructure, and the gap widens not from bad-faith action on either side but from the absence of institutional conditions that would enable convergence.

This is where the equity concern raised at the outset becomes concrete. The promise of AI as an equalizing force in education remains unrealized where students receive one weekly hour of English instruction, teachers use AI without formal training or guidance, and institutions have not yet developed policy to govern tools students are already using independently. At present, AI integration in this setting is being improvised by individual actors operating within a system that has not yet caught up with its own stated ambitions.

CONCLUSION

This study investigates teachers and students' perceptions and practices of AI tools for English learning in an informal EFL context in Indonesia and the implications of such divergence for the adoption of AI in under-resourced educational contexts. The results are from 22 participants, but the implications are profound.

The reason students resort to AI is a practical one: AI is an effective crutch for translation, grammar assistance, and vocabulary retrieval when used in conjunction with a once-a-week teaching model. Teachers are using AI in a pedagogically responsible way, aware of the cognitive costs of over-reliance and questioning the accuracy of the output. Both are rational responses to the same under-resourced environment, but they are working in parallel without structured dialogue, shared institutional frameworks, or professional support that would enable either group to navigate AI adoption with confidence.

The gap described here is real; it is role-based, and it will probably grow without intervention, but the root is structural, not attitudinal. This national push toward AI integration presumes a degree of institutional readiness that many non-formal institutions have yet to reach. The introduction of AI tools without investment in trained teachers, sufficient contact hours, and basic digital infrastructure does not level the playing field. It creates localized adaptations to structural problems.

There are three implications. First, AI literacy programming in Indonesian EFL settings should involve learners and educators as co-creators, not as distinct audiences. Second, national AI-in-education frameworks should explicitly include non-formal institutions that serve large numbers of Indonesian learners but are largely out of policy attention today. Third, the discussion about AI in Indonesian education cannot be separated from the discussion about educational equity. To focus on one without the other is to risk using new technology to entrench existing disparities."

This study is limited by the small sample size and that it was conducted at one institution, limiting the generalisability. Future research should broaden this study to encompass multiple non-formal institutions and regions, longitudinal observation of patterns of AI use, and supplement reflective questionnaire data with structured interviews to enrich the thematic interpretation. It's no longer a question of whether AI has a role in

Indonesian classrooms, as it's here. The question is whether the system around it is ready to lead that presence wisely, critically, and with the institutional support that current infrastructure has yet to rise to.

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