

Integrating AI into Translation Pedagogy: University Lecturers' Readiness in Indonesia and Timor-Leste

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Abstract

Background:

The increasing use of artificial intelligence (AI) in translation technologies is transforming translation pedagogy and creating new opportunities and challenges for translation pedagogy and creating new opportunities and challenges for translator education. As AI-assisted tools become increasingly integrated into professional translation practices, understanding lecturers' readiness to incorporate AI into teaching becomes essential for effective and responsible implementation.

Methodology:

This study employed a qualitative descriptive design involving six university lecturers as purposive sampling who can teach translation courses in Indonesia and Timor-Leste. Data was collected through semi-structured interviews and analyzed thematically using Maxqda 2024.

Findings:

The findings revealed four interconnected dimensions of lecturers' readiness for AI integration: pedagogical perception, ethical-professional awareness, and institutional ecosystem support. Participants generally demonstrated positive attitudes toward AI and moderate to high technological confidence. However, concerns regarding translation accuracy, overreliance on AI-generated outputs, academic integrity, and ethical responsibility remained evident.

Conclusion:

Lecturers' readiness for AI integration extends beyond technological competence and involves pedagogical adaptation, ethical literacy, and institutional support. Effective implementation requires balanced integration that promotes critical engagement with AI while preserving core translation competencies.

Originality:

This study proposes an AI Readiness Framework for Translation Pedagogy that conceptualizes readiness as a multidimensional interaction among pedagogical, technological, ethical, and institutional factors. The framework contributes to the growing literature on AI-assisted translation education by foregrounding lecturers' perspectives.

Keywords	:	<i>artificial intelligence, higher education, readiness for integration, qualitative research, translation pedagogy.</i>
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INTRODUCTION

The rapid advancement of artificial intelligence (AI) technologies has brought about dramatic changes in several sectors, one of which is higher education. AI has evolved from experimental practices to formal institutional application over the past decade, which is increasingly evident in domains such as language processing and knowledge production ([Bowker, 2021](#); [Kim & Cha, 2023](#)). Tools such as neural machine translation (NMT), automated writing evaluation systems, and large language models (LLMs) have been widely deployed across language-focused careers and educational environments. These developments have had a particular impact on translation studies, a field that is inherently located between language, technology, and communication ([Abdalgane & Othman, 2023](#); [Cheng, 2022](#)).

Professional translation businesses no longer have AI systems as a sidekick to productivity, but as a central infrastructural component. Neural machine translation engines, post-editing, terminology management systems, and AI-assisted quality estimation are now commonly present in workflows ([Falempin & Ranadireksa, 2024](#); [Lin, 2023](#)). The shift from rule-based and statistical machine translation to neural architectures, especially since attention-based and transformer architectures were developed, the degree of fluency and contextual sensitivity in automatic output has also been much higher ([Malik et al., 2023](#); [Nisiforou & Kosmas, 2025](#)). Consequently, the distinction between human- and machine-generated translation has become more blurred, raising questions about what translation competence looks like in the current context.

Translation pedagogy is also inevitably brought by these technological changes. Traditional translations' pedagogical styles have predominantly focused on manual drafting, contrastive linguistic analysis, and iterative revision grounded in human-centered expertise ([Mohamed et al., 2024](#); [Moneus & Sahari, 2024](#); [Patil, 2025](#)). But AI tools now offer instant draft generation, lexical alternatives, stylistic variation, and cross-linguistic alignment suggestions. This immediacy disrupts the traditional instructional sequential approach and facilitates a reconceptualization of classroom practices. Instead of relying solely on production, translation education today more directly engages in post-editing, critical evaluation of machine output, and strategic technological decision-making ([Yuan, 2025](#)).

This transformation is substantial from a competence-based perspective. The PACTE group's (2003) model of translation competence includes not only bilingual and extralinguistic sub-competences but also instrumental competence, which encompasses the effective use of technological resources. In the AI era, instrumental competence expands to include critical AI literacy, understanding system limitations, bias, hallucination risks, and ethical implications. Thus, AI integration is not merely an add-on tool but a catalyst for redefining competence frameworks in translator training ([Nisiforou & Kosmas, 2025](#)).

Studies in AI-augmented language learning further suggest that properly scaffolded use of AI may improve on metacognitive development and revision awareness. For instance, research in computer-assisted language learning (CALL) contexts shows that AI-based feedback systems facilitate the learner self-directedness and reflections and revisions strategies when they are pedagogically mediated ([Kim & Cha, 2023](#)). Yet such advantages are contingent on curriculum design and the direction of teachers. Unsupported use may promote surface engagement or dependence on automated output.

Although research on artificial intelligence (AI) and translation technology in language teaching is developing, significant gaps remain in our understanding of how ready lecturers are to include AI in translation pedagogy. Previous studies have focused primarily on students' experiences, the technological performance of AI tools, and the pedagogical potential of AI-assisted learning. There has been relatively less focus on how translation lecturers understand, negotiate and operationalize AI readiness in terms of pedagogical decision-making, professional responsibility and institutional conditions. Specifically, it is still unknown how lecturers' acquaintance with technology translates into pedagogically meaningful AI integration, and how ethical considerations and institutional support affect such preparation.

Indonesia and Timor-Leste context offers a context that is analytically relevant to study these questions, considering that translation education in these two neighboring, but institutionally and linguistically different, contexts are increasingly located at the intersection of multilingual communication, higher education and emerging AI-mediated professional practices. In exploring instructors in various situations this study is able to transcend beyond a technology-focused narrative of AI adoption by conceptualizing ready as a contextually placed phenomenon impacted by pedagogic attitudes, professional issues and institutional circumstances. Instead of only investigating whether educators have positive or negative attitudes toward AI, the study thus extends educator-readiness research by investigating how lecturers conceptualize readiness, how different dimensions of readiness are manifested in their

accounts, and how these dimensions interact with the specific demands of translation pedagogy. ([Gayed et al., 2022](#); [Zhang et al., 2023](#)).

As curriculum implementers and pedagogical decision-makers, lecturers influence how AI is integrated into learning activities, assessment practices, and ethical classroom engagement ([Lo et al., 2024](#); [Milli et al., 2025](#)). Their beliefs, technological competence, pedagogical considerations, and institutional contexts shape the effectiveness and sustainability of AI adoption in translation education. However, empirical evidence regarding lecturers' readiness to integrate AI into translation pedagogy remains limited, particularly in higher education contexts where translation training increasingly intersects with AI-assisted professional practices.

Bridging this gap is vital because successful AI integration does not only depend on the availability of technology but also on the readiness of educators to use AI in pedagogically useful and ethically responsible ways. The study provides empirical evidence of the attitudes, experiences and preparedness of university translation teachers in Indonesia and Timor-Leste to integrate AI in translation education. The study has also proposed a prototype AI Readiness Framework for Translation Pedagogy that conceptually integrates the pedagogical perception, technological-pedagogical ability, ethical and professional awareness, and institutional ecosystem support. The framework is an empirically generated conceptualization rather than a verified predictive model and provides a basis for later quantitative and mixed methods validation.

Accordingly, this study investigates university lecturers' readiness to integrate AI into translation pedagogy in Indonesia and Timor-Leste. Specifically, it explores lecturers' perceptions of AI integration and examines the factors influencing their readiness, including technological competence, pedagogical considerations, ethical concerns, and institutional support.

LITERATURE REVIEW

Artificial Intelligence in Translation Education

The development of AI-based translation tools has strongly impacted translation studies, both on theory and pedagogy's front. The early rule-based and statistical machine translation (SMT) systems were constrained by rigid linguistic rules and phrase-based probabilistic models. With the advent of neural machine translation (NMT) using attention mechanisms and transformer architectures however, translation tools have become a new paradigm for automated translation ([Floridi & Chiriatti, 2020](#); [Rico, 2022](#)). These architectures achieved

robust improvements in fluency, contextual sensitivity, and long-distance dependency modeling, eliciting outputs that match human-like readability. Empirical studies have shown that both adequacy and fluency of NMT systems surpass SMT systems on different language pairs ([Huang et al., 2021](#); [Kadel, 2020](#); [Lee & Roger, 2023](#)).

As translation technology has become more sophisticated, scholars have reassessed the role of human translators in AI-mediated settings ([Moneus & Sahari, 2024](#); [Zarrati et al., 2024](#)). Far from replacing translators, AI has changed the face of labor in the profession. Post-editing machine translation (PEMT) also became a standard industry workflow: translators have to edit and refine machine-generated drafts. Studies suggest that post-editing requires a unique cognitive profile, which involves immediate error identification in addition to strategic decision making. As a result, translation competence models have developed to be broader than bilingual and intercultural skills and add instrumental and technological competences ([Lin, 2023](#); [Moneus & Sahari, 2024](#); [Yuxiu, 2024](#)). This technological change has a direct relevance to translation education. The field of translator training programs needs to be made relevant to changing professional requirements to cater to AI-assisted workflows. The need for machine translation literacy in that students need not only be able to understand the limits of the system, but also variability in output and ethics. Without this literacy, learners will likely be over trusting or underusing AI systems.

AI tools can serve as cognitive scaffolds within classroom contexts. Borrowing from socio-constructivist theory ([Kiraly, 2017](#)), tools act to mediate learning by externalizing intermediate stages of thought. These computer-generated drafts give students instant comparative material where students can analyze lexical choices, syntactic restructuring, and pragmatic shifts. The research in computer-assisted language learning (CALL) has found that the use of guided AIs can significantly improve metacognitive engagement and reflective revision ([Namaziandost, 2025](#)). The analysis of human versus machine translations shifts students from simple production to evaluative analysis, deepening critical competence. In addition, the AI enables process-oriented pedagogy. Translation studies have increasingly focused on translation as a problem-solving process rather than a product ([Setyaji, 2019](#); [Yuan, 2025](#)). Through their analysis of machine-generated alternatives, students can highlight translation problems, classify types of errors, and contemplate rationales for decision making. Studies have demonstrated that, when NMT output is delivered together with explicit instruction, students' awareness and efficiency in post-editing improve ([Sánchez-Gijón, 2019](#)).

Yet, an overreliance on AI tools comes with risks. Automation bias defined as the tendency to over trust automated systems may reduce analytical vigilance ([van Dijk et al., 2020](#)). Translation process studies indicate that translators working with machine output may accept incorrect suggestions when cognitive load is high ([Albus et al., 2021](#); [Baier et al., 2019](#)). Moreover, NMT systems, despite fluency, may produce subtle semantic distortions or culturally inappropriate renderings ([Jia et al., 2024](#); [Liu & Zhu, 2023](#)). [Bowker and Ciro \(2019\)](#) caution that machine-generated texts may appear polished yet contain inaccuracies that require expert human judgment. Therefore, pedagogical integration must emphasize critical AI literacy rather than passive adoption. Students should be trained to interrogate AI outputs, identify systemic biases, and justify revisions. Such approaches reposition AI from authority to a dialogic partner in translation learning.

Teacher Readiness and Technology Integration

An effective AI-based translation pedagogy relies heavily on teacher readiness for integration success. The TPACK framework ([Hamid et al., 2024](#)) a conceptualization of successful technology integration, focuses on the intersection of technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). In particular, this intersection is complex in translation education. Consequently, lecturers must ensure integration of linguistic expertise, intercultural sensitivity, technological fluency, and assessment design within AI-supported learning environments. Research shows time and again that teachers' beliefs play a crucial role in technology adoption ([Machala et al., 2022](#)). First-order barriers (e.g., lack of resources) and second-order barriers (e.g., beliefs, attitudes, confidence) combine to help guide instructional decisions. There was also a claim that pedagogical beliefs often mediate the role of technological availability ([Vretos et al., 2019](#)). Although AI tools can be provided, educators who see translation primarily as a humanistic craft may hesitate to incorporate automated systems ([Alfadil, 2020](#); [Farmasari et al., 2026](#)).

Then, there's the institutional context that matters. A systematic review of AI in higher education and emphasized that professional development, institutional policy clarity, and leadership support play a critical role in sustainable AI adoption. Lecturers are, therefore, in the position of uncertainty about how to apply this information in the classroom if structured training is not available. The Diffusion of Innovation theory provides another explanation ([Ayuningrum et al., 2024](#); [Liu, 2016](#)). Adoption rates differ with innovators, early adopters, early majority, late majority, and resisters. In translation departments, early adopters might

want to test out tasks like post-editing or AI comparison exercises, whereas late adopters might resist due to academic integrity and skill erosion concerns. To understand lecturers' preparedness, then, we need to consider not only technical competence but also professional identity, epistemological beliefs, and institutional pressures ([Kusmaryani et al., 2026](#); [Napu et al., 2026](#)).

AI also threatens educators' professional identities. Translation lecturers often see themselves as mediators of meaning and guardians of linguistic nuance. AI integrative practices provoke existential questions of expertise and authorship. Data from the research on the integration of technology indicates that appropriate adoption follows when educators redefine technology as an augmentative device as opposed to a substitutive one. In this sense, in translation pedagogy, we can position AI as a tool to develop its use for critical enhancement, not simply a substitute for human judgment.

Ethical and Institutional Dimensions

The implementation of AI integration in education is difficult due to its complicated ethical questions of transparency, accountability, authorship, and data governance ([Fagerlund et al., 2025](#)). In teaching translation, this applies in translation classrooms where those considerations coalesce with questions relating to assessment integrity and skill authenticity. Generative AI systems generate substantive textual data, and that complicates notions of originality. Educators will need to decide whether AI assistance is justifiable support and if such assistance is inappropriate and helps towards achieving independent competence. Bias and representational limitations further complicate the use of AI. NMTs are trained to learn from huge amounts of corpora which may be representative of cultural or ideological bias and therefore NMT systems could be biased due to large data models that reflect culture or ideology.

Studies in translation tech argue machine output could perpetuate either gender bias or culturally skewed representations. Given that translation inherently involves cultural mediation, the criticality of ethical literacy is a key feature regarding translator education. Institutional policy frameworks are therefore essential. Clear guidelines regarding AI use, attribution standards, and assessment design reduce ambiguity and ensure consistency across courses. [Zawacki-Richter et al. \(2019\)](#) emphasize that institutional leadership and governance structures significantly influence responsible AI adoption. Without coordinated policy, integration may become fragmented and inconsistent. Furthermore, ethical AI integration requires balancing innovation with foundational skill preservation.

While AI can enhance efficiency and analytical comparison, excessive dependence may diminish deep linguistic processing. Effective pedagogy must therefore cultivate critical autonomy, ensuring that students remain capable of independent translation while leveraging AI strategically.

METHODOLOGY

Research Design

Through qualitative descriptive design, this study investigates lecturers' readiness to integrate artificial intelligence into translation pedagogy. Qualitative design was chosen as appropriate to capture patterns and perceptions of readiness as well as the thematic dimensions reflected in participants' responses. It also provides the researcher with an insight which is required to the teachers' perspectives, experiences, and their interpretive meanings in relation to the pedagogical integration of AI, which are not sufficiently captured through quantitative measures only. AI's incorporation into translation pedagogy poses a multitude of complicated questions about pedagogical beliefs, professional identity, ethical concerns, and institutional contexts.

These dimensions are subjective and situated, so research is exploratory and needs an exploratory methodology that provides an opportunity for participants to express themselves in detail. Additionally, qualitative inquiry allows the researcher to explore, through qualitative data analysis, the ways in which teachers understand the role of AI in translation learning, respond to its pedagogical boundaries, and what institutional conditions influence their decision-making at the level of instruction. Qualitative analysis allows for a richer understanding of the multidimensional nature of readiness beyond measurable attitudes or technological familiarity through engagement with participants' narratives and interpretations.

Participants

Fourteen university instructors teaching translation-related courses completed a short questionnaire. The questionnaire was not administered as a quantitative measure of readiness but as a preliminary screening tool to uncover variation in participants' views toward AI, technological confidence, and frequency of AI use. Six of the instructors were purposefully picked from these responses for in-depth interviews to ensure variance in attitudes and levels of AI engagement.

The six interview participants comprised three lecturers from Indonesia and three lecturers from Timor-Leste, all of whom were affiliated with higher education institutions offering translation-related courses. Their experience teaching translation was between [5-10

years], while their experience teaching using AI was between less than 5 years. Participants were selected through purposeful sampling to reflect divergent and complementary patterns of interaction with AI including variances in views toward AI, technological confidence, frequency of use, and pedagogical integration. This selection technique allowed the study to analyze how instructors with varied experiences and institutional backgrounds imagined and handled AI inclusion in translation pedagogy.

Instrument

The interview methodology comprised open-ended questions that were developed around four general areas: (1) perspectives of AI in translation education, (2) technological and pedagogical preparation, (3) ethical considerations related to the use of AI, and (4) institutional support for the integration of AI. These were general interview domains but not pre-defined theme groupings. The following themes were not pre-determined on the basis of the interview arrangement. Thematic categories were derived inductively from repeated analysis of the transcripts of the interviews, open coding, comparing codes between participants, and iteratively refining candidate themes. Therefore, the domains of the interview offered a preliminary structure for eliciting the experiences of the participants, but the final thematic dimensions emerged from patterns throughout the data.

The semi-structured format allowed participants to provide detailed responses while ensuring consistency across interviews. Follow-up questions were employed to obtain clarification and deeper insights whenever necessary. Prior to data collection, the interview guide was reviewed to ensure clarity, relevance, and alignment with the research objectives. All interviews were conducted individually, recorded with participants' consent, and subsequently transcribed for analysis.

Data Analysis

Interview data were analyzed using reflexive thematic analysis. The principles of the reflexive thematic analysis were familiarization with the data, systematic coding, formation of candidate themes, review and refining of themes, definition and naming of themes, and interpretation of the thematic structure. MAXQDA 2024 was used to help with the analysis by organizing transcripts, assigning codes, retrieving coded segments, and comparing patterns among participants.

The coding process was iterative; The researchers first read the transcripts multiple times to get a feel for the data, jotting down initial thoughts. Secondly, relevant sections were allocated initial codes capturing participants' views, experiences, concerns and practices of AI

integration. Third, similar codes were examined and clustered in candidate categories. Fourth, candidate themes were checked against coded extracts and the full data set to see if they formed a coherent pattern and were distinct from other themes. Finally, themes were improved, defined and identified. This was done to capture the central trends across participants.

Importantly, the four final dimensions were not pre-defined from the four interview areas. They came out of comparing and refining codes across the six interviews. The researchers also kept reflexive notes during the analytical process to explore the possible effect of their own ideas about AI and translation pedagogy on interpretation. Credibility was built by an iterative process of transcript reading, comparison of interpretations across researchers, and debate of subject definitions until a coherent thematic structure was developed.

FINDINGS

The thematic analysis generated four major themes from the interview data. These themes provide answers to the two research questions of this study. The first two themes explain how university lecturers perceive and conceptualize the integration of artificial intelligence (AI) in translation pedagogy, whereas the remaining two themes identify the factors influencing their readiness to integrate AI into translation teaching. The thematic domains and subthemes identified through MAXQDA 2024 are presented in Table 1.

Table 1 Thematic Domains and Subthemes Identified in MAXQDA Analysis

Thematic Domain	Subtheme	Description
Attitudes Toward AI	Positive perception	AI is viewed as beneficial and relevant for modern translation teaching
Attitudes Toward AI	Conditional acceptance	AI is accepted but accompanied by critical evaluation of its limitations
Attitudes Toward AI	Skepticism toward accuracy	Concerns about reliability and contextual nuances
Attitudes Toward AI	Preference for traditional methods	Continued importance of manual translation instruction
Readiness for AI Integration	Technical knowledge	Self-reported familiarity with AI tools and their functions
Readiness for AI Integration	Confidence in using AI	Comfort in implementing AI in classroom activities
Readiness for AI Integration	Need for training	Recognition of continuous professional development needs
Readiness for AI Integration	Curriculum integration orientation	Support for gradual or full AI integration
Impact on Teaching and Learning	Increased work efficiency	Improved workflow and reduced preparation time
Impact on Teaching and Learning	Enhancement of student engagement	Greater classroom participation and discussion
Impact on Teaching and Learning	Support for higher-order thinking	Encouragement of analytical comparison and reflection
Impact on Teaching and Learning	Risk of error	Need for verification of AI-generated outputs

Practical Behaviour in AI Use	Demonstrative use	AI used for examples, comparisons, and vocabulary exploration
Practical Behaviour in AI Use	Supplementary use	Occasional AI use to support explanations
Practical Behaviour in AI Use	Blended integration model	Combination of AI-assisted and traditional approaches
Institutional and Policy Support	Access to resources	Availability of AI tools and infrastructure
Institutional and Policy Support	Training provision	Institutional workshops and professional development
Institutional and Policy Support	Ethical guidelines	Need for policy frameworks for responsible AI use

(a) Lecturers Perceived Pedagogical Benefits of AI Integration

Most of the participants showed a positive attitude regarding the integration of AI-assisted translation tools in translation pedagogy. Lecturers saw AI as having the ability to improve the efficiency of education, boost students' translation learning, and make the learning experience more participatory. As several participants pointed out, AI technologies can save time, provide students with exposure to actual use of language, and offer post-editing practice, thus preparing students for professional translation contexts mediated by technology.

One participant emphasized the instructional value of AI tools in classroom activities: *"AI tools allow students to compare machine-generated translations with their own work, which helps them identify errors and develop critical thinking in translation."* (Participant 2) Another lecturer highlighted the relevance of AI in preparing students for professional practice: *"In the translation industry today, AI-assisted tools are widely used. If we ignore these tools in the classroom, students may not be fully prepared for real-world translation tasks."* (Participant 4)

In the six interviews, participants typically described AI as a productivity tool as well as a potential instructional resource for comparative analysis, post-editing and critical evaluation of translation results. This trend was seen in the descriptions of Participants 2 who stressed the instructional value of AI tools in classroom activities, whereas Participant 4 was more cautious on the relevance of AI in preparing students for professional practice. Thus, the participants had good opinions but disagreed in terms of the appropriateness of AI for direct use in the classroom. These convergent and diverging perspectives show that lecturers' perception of AI was one of educational opportunities and critical qualification.

These findings are consistent with previous studies demonstrating that AI-assisted translation tools can promote learners' metalinguistic awareness, revision skills, and critical reflection when integrated into well-designed instructional activities ([Lee, 2023](#); [O'Brien,](#)

[2022](#)). Rather than replacing human translators, AI is viewed as a cognitive scaffold that supports analytical thinking and comparative evaluation between machine-generated and human-produced translations.

(b) Ethical and Professional Concerns

Although many individuals reported positive perspectives of AI, ethical and professional concerns were a recurrent issue across interviews. Particular concerns were expressed in relation to translation accuracy, over-reliance on AI-generated outputs, academic integrity and the potential decline in students' critical participation. For instance, participant (3) said, *"I am also concerned about academic integrity. Students may submit an AI-generated translation as if it were their own work. For me, this is an ethical issue. We need to teach them about responsible and ethical use of AI."*

Participant (6) similarly said, *"Another concern is that students may choose the easiest way. If AI can translate everything, they may not want to think deeply. So, we have to design activities where students explain their translation choices, rather than simply submitting the final translation."*

Moreover, participant (2) stated, *"Accuracy is still a problem. Sometimes the AI translation looks very good, but when we look more carefully, the meaning is not exactly correct. There can also be cultural problems. So, students should not assume that AI is always correct."*

The main concerns emerging from the responses were student dependency, translation accuracy, academic integrity, AI bias, cultural loss, and changing professional roles. These concerns correspond closely with the questionnaire's focus on AI accuracy, ethical challenges, bias, and the continuing role of lecturers.

This ambivalence reflects wider debates in the AI in education literature. Scholarly caution argues that overreliance on generative AI can diminish cognitive work and reduce skills acquisition if not implemented judiciously ([Kasneci et al., 2023](#)). In the field of translation education, ethics go beyond just biopolitical concerns but also raise issues such as authorship, accountability and professional standards ([Pym, 2019](#)). In addition, others voiced fears that jobs may be automated. Nevertheless, the majority of respondents did not view AI as a direct substitute for human expertise, indicating a measured and thoughtful attitude towards tech advancement.

The second research question examined the factors influencing university lecturers' readiness to integrate AI into translation pedagogy. Two themes were identified: technological and pedagogical readiness, and institutional support and professional development needs.

(c) Technological and Pedagogical Readiness

Participants' interview responses indicated varying degrees of technological and pedagogical readiness to integrate AI into Translation teaching. Several participants described having prior experience with AI-based translation tools and demonstrated an understanding of their basic functions and potential applications for teaching. Their responses also reflected a degree of confidence in using AI for educational purposes, although some participants acknowledged that they still needed further guidance, particularly in designing pedagogically appropriate AI-supported learning activities. The participants consistently expressed willingness to participate in additional training to strengthen their ability to integrate AI into their teaching practices. At the same time, some participants indicated that they still valued conventional teaching approaches and emphasized the importance of combining AI-supported activities with traditional translation instruction. These findings suggest that readiness was not understood solely in terms of familiarity with or access to technology, but also involved lecturers' confidence, pedagogical knowledge, willingness to learn, and ability to adapt existing teaching practices. This interpretation is consistent with [Mishra and Koehler \(2006\)](#). Technological Pedagogical Content Knowledge (TPACK) framework, which emphasizes that effective technology integration requires the interaction of technological, pedagogical, and content knowledge.

Results show that the technological knowledge of lecturers seems fairly sufficient, while pedagogical transformation has not all taken place. These transitional phases indicate that the majority of lecturers are likely currently transitioning to early adoption of AI, in alignment with [Rogers \(2003\)](#) diffusion of innovation.

(d) Institutional Support and Professional Development Needs

One of the most important findings of this study is that institutional support was a significant predictor of lecturers' preparedness for implementing AI in translation education. The participants emphasized technological infrastructure and structured training programs (with clear ethical guidelines for AI use in educational settings).

Respondents noted that to integrate AI effectively and consistently, school systems need systematic professional development rather than opportunities for individual experimentation. This finding is in line with earlier studies that show both institutional policy frameworks and

administrative support have a decisive role in educators' technology adoption ([Tondeur et al., 2017](#)).

Participants also emphasized the need to embed AI ethics into translation curricula. This aligns with broader calls across higher education to incorporate AI literacy and an ethical sensibility into the environment of learning in which students are being immersed (UNESCO, 2021). For many people we have spoken to, using of AI for teaching in translation is not just a technological choice it also represents an ethical duty.

To capture more breadth on differences in lecturers' readiness, a cross-case analysis was then conducted, taking into consideration participants' attitudes toward AI, confidence levels, frequency of use and integration patterns. The findings also divulged multiple unique patterns of readiness in lecturers, scrolling from high-level ready integrators to low-level hesitant adopters. These profiles are underlined in the subsequent table.

Table 2 Cross-Case Readiness Profiles of Participants

Readiness Profile	Attitude Toward AI	Confidence Level	Frequency of AI Use	Integration Pattern
Highly Ready Integrators (4 participants)	Strongly positive	High	Frequent	Full or progressive integration
Balanced Pragmatist (1 participant)	Positive but cautious	Moderate to high	Regular	Blended with strong traditional foundation
Cautious Adopter (1 participant)	Conditional acceptance	Moderate	Occasional	Gradual integration with strong verification

The profiles were established through a pattern-based interpretation of four dimensions: attitude toward AI, confidence level, frequency of AI use, and integration pattern. Thus, a participant was assigned to a profile based on the overall combination of these four dimensions rather than on a single indicator.

Highly Ready Integrators were characterized by a strongly positive attitude toward AI, high confidence, frequent AI use, and full or progressive integration of AI into their practice. This profile represents participants who demonstrate strong acceptance of AI, feel confident in using it, use it frequently, and integrate it extensively or increasingly into their practice.

Balanced Pragmatists were characterized by a positive but cautious attitude, moderate-to-high confidence, regular AI use, and a blended integration pattern with a strong traditional

foundation. These participants accepted AI and used it regularly, but they continued to rely substantially on established/traditional practices when integrating AI.

Cautious Adopters were characterized by conditional acceptance, moderate confidence, occasional AI use, and gradual integration with strong verification. These participants were willing to use AI under certain conditions, used it less frequently, and adopted it gradually while placing strong emphasis on verifying AI-generated outputs.

DISCUSSION

This study shows that university lecturers were generally receptive to AI integration into Translation pedagogy, although their receptiveness was accompanied by caution. This finding is broadly consistent with recent evidence on lecturer readiness for generative AI, which conceptualizes readiness as a multidimensional process involving technology-related expectations, individual capabilities, pedagogical values, motivation, and institutional conditions ([Luo & Day, 2026](#)). In particular, the four dimensions identified in the present study that perceived pedagogical benefits, ethical and professional concerns, technological and pedagogical readiness, and institutional support and professional development needs that correspond closely with several dimensions identified in recent lecturer-readiness research ([Luo & Day, 2026](#)).

First, participants' recognition of the pedagogical benefits of AI, particularly its potential to improve teaching efficiency, provide feedback, and support student learning, resonates with the notion of performance expectancy in the UTAUT framework ([Luo & Day, 2026](#)). However, participants did not equate perceived usefulness with unconditional adoption. Their concerns about accuracy, student dependency, academic integrity, and the changing role of lecturers indicate that pedagogical values also shaped their willingness to use AI. This is consistent with previous research showing that teachers' technology integration is influenced not only by technological knowledge and confidence but also by pedagogical beliefs and the perceived value of technology for teaching and learning ([Ertmer & Ottenbreit-Leftwich, 2010](#); [Ottenbreit-Leftwich et al., 2010](#)). More specifically, [Luo and Day \(2026\)](#) demonstrate that lecturers' readiness is influenced not only by expected benefits but also by teaching values and individual professional orientations.

Second, the ethical and professional concerns expressed by participants extend the conventional technology-acceptance perspective. Participants' attention to AI accuracy, bias, academic integrity, cultural meaning, and students' potential overdependence on AI suggests that readiness involves the ability to critically evaluate and ethically apply AI rather than

simply being willing to use it. This interpretation is consistent with broader research on AI in higher education, which has highlighted the need to pay greater attention to educators' roles, pedagogical implications, and ethical considerations in AI adoption ([Zawacki-Richter et al., 2019](#)). It also corresponds with the emphasis that [Luo and Day \(2026\)](#) place on AI literacy and teaching values, particularly lecturers' capacity to evaluate AI outputs and consider their pedagogical appropriateness.

Third, the technological and pedagogical readiness reported by participants suggests that familiarity with AI tools alone does not constitute readiness. Participants described the need for greater confidence, knowledge, and pedagogical strategies for integrating AI into Translation instruction. This finding is consistent with research emphasizing that effective technology integration depends on the interaction of teachers' technological knowledge, self-efficacy, pedagogical beliefs, and contextual conditions ([Ertmer & Ottenbreit-Leftwich, 2010](#)). It is also consistent with [Luo and Day \(2026\)](#) conceptualization of readiness as involving AI literacy, competence, teaching values, and openness to experimentation. Importantly, the present findings add a discipline-specific dimension: lecturers' readiness was not simply about whether they could use AI, but whether they could determine when and how AI should be used without weakening the development of students' independent translation competence.

Fourth, participants' emphasis on institutional support, technological infrastructure, training, peer collaboration, and clear guidelines closely reflects the facilitating conditions identified in recent lecturer-readiness research ([Luo & Day, 2026](#)). Earlier research likewise suggests that teachers' technology integration is shaped by contextual factors, including access, support, school or institutional culture, and professional development ([Ertmer & Ottenbreit-Leftwich, 2010](#)). Thus, the present findings reinforce the view that lecturer readiness is partly shaped by the institutional environment in which AI integration takes place.

The findings suggest that the cautious orientation observed among participants should not be interpreted as resistance to AI. Rather, it reflects a form of reflective professional readiness in which perceived usefulness is weighed against pedagogical values, ethical responsibilities, technological competence, and institutional conditions ([Ertmer & Ottenbreit-Leftwich, 2010](#); [Luo & Day, 2026](#)). What appears particularly distinctive in the context of Translation pedagogy is the centrality of translation-specific concerns, including the evaluation of AI-generated translation accuracy, cultural appropriateness, students' development of independent translation skills, and the appropriate balance between AI-assisted and conventional translation practices. In this respect, the present study extends general lecturer-readiness research by

showing how broader readiness constructs are negotiated through the specific pedagogical and professional demands of Translation education.

The perceived educational advantages elucidated in this study strengthen claims that AI tools are capable of streamlining the teaching process and stimulating analytical immersion. Participants highlighted time-saving processes and post-editing practice in a context that reflects the findings of research showing that machine translation can act as a springboard to comparative analysis and revision training ([O'Brien, 2012](#); [Sánchez-Gijón et al., 2019](#)). In the context of post-editing, learners have to spot semantic inaccuracies, pragmatic mismatches and stylistic inconsistencies—tasks considered higher-order cognitive skills ([Daems et al., 2017](#)). As a result, when integrated into structured tasks, the use of AI is not inherently less cognitively demanding but instead redistributing cognitive effort toward evaluation and iteration.

Moreover, lecturers' acknowledgment that AI integration mirrors current industry practices suggests that AI can enable classroom activities to represent professional translation practice more realistically. This is particularly relevant given the structural changes taking place in the translation profession, where neural machine translation (NMT) and AI-assisted workflows have increasingly reshaped translators' professional competencies ([Kenny, 2022a](#)). In this respect, our findings converge with [Rico and Pastor, \(2022\)](#) observation that translator educators need to engage with MT not merely as a technological tool but also in relation to MT literacy, the development of translation competence, and the changing role of the human translator.

However, the findings also extend this perspective by suggesting that lecturers' openness to AI is closely associated with the perceived need to align translator education with workplace practices. Rather than reflecting an uncritical enthusiasm for technological novelty, participants' openness can be interpreted as a form of professional pragmatism: AI is considered valuable because it reflects technologies and workflows that graduates are likely to encounter in professional settings. At the same time, this orientation does not necessarily imply the replacement of human agency. Instead, AI integration requires students to develop the ability to evaluate, revise, post-edit, and make informed decisions about AI-generated outputs. In this sense, human agency remains central because technological competence needs to be accompanied by critical judgment and responsibility for the final translation.

From a curriculum perspective, these findings support a shift from treating AI or MT as an additional technological topic toward embedding MT/AI literacy across translation courses. Such integration should include not only familiarity with NMT and AI-assisted

workflows but also critical evaluation of machine output, post-editing, source-text and target-text analysis, error identification, and decision-making regarding when and how AI should be used. This position is consistent with [Rico and Pastor \(2022\)](#) argument that MT teaching raises broader questions about translation competence and agency, rather than being limited to the technical operation of MT tools. Thus, the openness expressed by our lecturers can be understood as an opportunity to reduce the gap between academic preparation and professional requirements, provided that AI is integrated into the curriculum through a human-centred, critically informed, and pedagogically purposeful approach, rather than as a substitute for translators' linguistic, analytical, and decision-making expertise.

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But readiness is more than just potential benefits. Ethical issues and worries about reliance highlight the need for pedagogical guardrails. Over trust in automated systems during the translation processes has led to automation bias ([O'Brien, 2012](#); [Daems et al., 2017](#)) characterized by the users' acceptance of error-prone machine suggestions without adequate scrutiny. Within educational contexts, recent investigations on generative AI mention the potential for unguided usage to harm deep learning and critical reasoning ([Kasneci et al., 2023](#)). So, the anxieties expressed by participants are not technophobia, but valid pedagogical considerations.

As translation, by definition, is an act of interpretative judgment and cultural mediation, the ethical dimension is much more pronounced in translation pedagogy. Special attention is needed for sensitive or superdiverse topics, as AI-generated translations can reflect the biases contained in training corpora or create culturally insensitive renderings ([Savoldi, 2021](#)). This is what strengthens the need to position AI not as an authority but as something upwards to critical interrogation. Lecturers' emphasis on the responsible integration of AI represents a recognition that any literacy related to AI includes component skills such as ethical discernment, detecting bias and accountability in authorship attribution.

The results also indicate that lecturers' preparedness operates across several interconnected dimensions, including technological familiarity, pedagogical adaptation, and institutional infrastructure. In this respect, the findings are partly explained by the Technological Pedagogical Content Knowledge (TPACK) framework ([Mishra & Koehler, 2006](#)), which conceptualizes effective technology integration as an interaction among technological, pedagogical, and content knowledge rather than as technical competence alone. Specifically, the participants' relatively high technological competence and their ongoing efforts to redesign pedagogical practices can be understood through the technological and pedagogical dimensions of TPACK. Similarly, the finding that lecturers are negotiating the use of AI alongside established translation-training practices is consistent with the view that

technology integration involves the interaction between technology, pedagogy, and disciplinary content.

However, the findings also reveal dimensions of AI readiness that are not fully captured by TPACK. First, institutional infrastructure and support emerged as an important contextual dimension of lecturers' preparedness, whereas TPACK primarily focuses on teachers' knowledge and the interaction among technological, pedagogical, and content knowledge. Second, the findings point to the importance of AI-specific readiness, including lecturers' ability to critically evaluate AI-generated outputs, verify accuracy, and make informed decisions about when and how AI should be used. These issues become particularly important in translation education because AI integration involves not only technological knowledge but also questions of human judgment, responsibility, quality control, and professional translation practices. Third, the participants' readiness is shaped by their attitudes, confidence, patterns of AI use, and perceptions of professional relevance, dimensions that are not fully represented in the original TPACK framework. Thus, TPACK provides a useful foundation for explaining the technological and pedagogical aspects of our findings, but it does not by itself provide a comprehensive account of lecturers' readiness to integrate AI into translation pedagogy.

This distinction is important for the development of the proposed readiness framework. Rather than replacing TPACK, the framework extends its explanatory scope by incorporating contextual, affective, behavioral, and AI-specific dimensions of readiness. The findings therefore suggest that effective AI integration in translation education requires not only technological, pedagogical, and content knowledge, but also institutional support, confidence and willingness to engage with AI, critical AI literacy, and alignment with evolving professional translation practices. In this sense, the proposed framework can be viewed as a contextualized extension of existing technology-integration perspectives to the specific conditions and demands of AI-mediated translation education.

Institutional support further structures readiness trajectories. Studies unequivocally demonstrate that sustainable technology integration is greatly affected by government and organizational leadership, professional development, clarity over policy and plans ([Zawacki-Richter et al., 2019](#)). Participants' request for structured training and ethical frameworks indicates that readiness is not just an individual characteristic but a systemic condition. If not aligned with the institution, integration of AI will lead to fragmented or haphazard policy across courses.

Crucially, this analysis pushes against a binary narrative that depicts AI alternately as an existential threat to human translators or as a revolutionary solution. Respondents imagined AI to be additive instead of replaceable. And is in line with recent scholarship framing translation competence as adaptive and mediated by technology ([Göpferich, 2009](#); [Pym, 2019](#)). Rather than placing AI and human translation at odds with one another, the results advocate for a hybrid competence model where students learn to critically assess, edit and ethically handle AI outputs.

This hybrid framework works to reframe translation pedagogy as dialogic interaction between human cognition and algorithmic suggestion. The role of the lecturer changes from sole knowledge transmitter to facilitator of critical technological literacy. This transition mirrors wider changes in higher education in which AI is conceptualized neither as the automation of expertise but rather as the augmentation of human intellectual capacity ([Zawacki-Richter et al., 2019](#)).

In sum, the discussion indicated that lecturers are not primarily resisting the arrival of AI but rather negotiating its jural and pedagogical limits. Their willingness is carried out through informed caution, conditional acceptance, and acknowledgement of institutional obligation. Thus, the integration of AI into translation pedagogy signifies a pedagogical advancement toward an ethically situated, technologically malleable type of competence

Based on the empirical data collected, this study makes a theoretical contribution by formulating an AI readiness framework for translation pedagogy. The framework theorizes lecturers' preparedness to integrate artificial intelligence into translator training. Though there is a growing body of literature focused on the use of technology in teaching, much of it relies on theoretical frameworks such as the Technological Pedagogical Content Knowledge (TPACK) model ([Mishra & Koehler, 2006](#)) and Diffusion of Innovation theory ([Rogers, 2003](#)), which fail to comprehensively account for pedagogic and ethical dimensions to AI-enhanced translation learning. Translation pedagogy teeters between aspects of language, cultural mediation and technology mediation that all require reconceptualizing in more contextual ways.

Figure 1. AI Readiness Framework for Translation Pedagogy

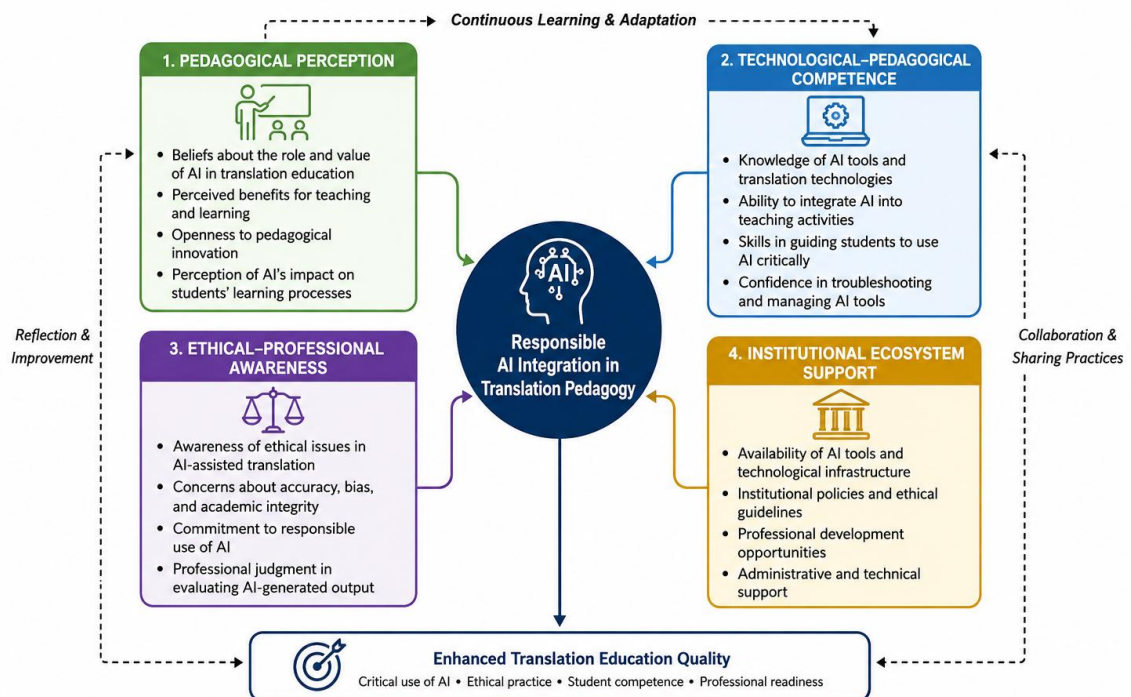


Figure 1. AI Readiness Framework for Translation Pedagogy

Thematic research findings: the readiness of lecturers for the incorporation of AI into translation pedagogy has been identified as an interlinked four-dimensional framework comprising four relative domains having relationship between them: (1) pedagogical potentiality regarding AI, (2) technological–pedagogical skillset domain, (3) ethical–professional awareness and growth-rooted mindset, and (4) institutional ecosystem relational support.

Pedagogical perception as the first dimension is related to the way that lecturers perceive AI tools as educative aid within translation learning environments. Rather than viewing AI as strictly an instrument with which to do productivity, lecturers in this study framed it, most positively perhaps, as being a pedagogical resource that supports comparative analysis of translations produced by different methods (AI and human), post-editing practice, and critical reflection. This aspect refers to the cognitive and epistemological positioning of educators regarding AI assisted learning. Moreover, this positive pedagogical perception enables the lecturer to reiterate AI technology as supplemental support in analytical study of person-to-person translation competences instead of substitutes for such human translation competences.

The second dimension, technological–pedagogical competence, captures lecturers' ability to incorporate AI tools in a manner inseparable from instructor design,

classroom activities and assessment approaches. This skill, however, is different from mere technical know-how about AI systems and pedagogical ability to scaffold activities that link machine translation assessments, post-editing tasks and comparative translations. Thus, technological readiness becomes pedagogically relevant only when teaching staff are able to link AI tools with learning objectives in translator training.

The third dimension, ethical and professional awareness relates to lecturers' ability to critically evaluate how they incorporated into the translation education use of AI. Attendees shared many concerns around the accuracy of translation, dependence on automated outputs, academic integrity, and professional responsibility. These concerns highlight the fact that even though AI is a technical integration, it also has ethical implications. Ethical sensitivity can allow lecturers to question AI as an object of scrutiny instead of an object of authority and also promote genuine literacy regarding that technology within the students themselves.

The fourth dimension, institutional ecosystem support, also describes the systemic conditions that facilitate or impede AI integration in schools. Other factors impact lecturers' preparations, such as institutional policies, training opportunities and the availability of infrastructure and administrative guidance. They also highlight how sustainable AI integration requires integrated institutional frameworks, with articulation of ethical guidelines and opportunities for educators to engage in professional development.

Upon these four domains hinges context-sensitive AI readiness frameworks in translation pedagogy. It positions this readiness as a constructive synergy between personal pedagogical orientation, technology competence, ethical literacy and institutional support systems. Self-regulation of standards, rather than seeing AI adoption as purely a technology issue, allows for pedagogical mediation and alignment to become the driver behind such developments. In three different ways, this theoretical contribution extends existing models of educational technology adoption. It focuses on technology readiness in the sense of translation education contextualization task where linguistic knowledge and intercultural judgement are still essential capabilities. The second is that it highlights ethical literacy as a key readiness factor related to the unique challenges of AI-generated textual outputs. Third, it conceptualizes readiness as a system; iterated by the simultaneous interaction of individual speakers to institutional contexts.

Future studies may also refine this model through additional studies that test it in new clinical, translational programs, and educational settings and educational cultures. These four readiness dimensions may also be explored using quantitative testing or mixed methods evaluations to examine the relationships between these four constructs and the true pedagogical implementation of AI tools in translation classes at translation teaching institutions. With these concerns, the proposed framework can therefore provide a structure for studying the developing role of artificial intelligence for translator education.

CONCLUSION

This study investigated university lecturers' readiness to integrate artificial intelligence (AI) into translation pedagogy through qualitative thematic analysis supported by MAXQDA 2024. The analysis identified four interconnected dimensions shaping readiness: (1) perceived pedagogical affordances of AI, (2) ethical and professional considerations, (3) technological–pedagogical competence, and (4) institutional infrastructure and policy support.

These findings should, however, be interpreted in light of several methodological limitations. First, the study employed a small purposive sample, which was appropriate for an in-depth qualitative exploration but limits the transferability of the findings to the broader population of university lecturers. Second, readiness was examined primarily through participants' self-reported perceptions and experiences, which may not fully reflect their actual AI-use practices or demonstrated competence. Third, the study involved lecturers from a limited number of institutional contexts, meaning that differences in institutional resources, policies, and organizational cultures across other universities may not be adequately represented. Therefore, the findings should not be interpreted as statistically generalizable but rather as providing context-sensitive insights into the multidimensional nature of lecturers' AI readiness.

Despite these limitations, the study suggests that AI readiness in translation pedagogy extends beyond technological competence. Effective integration requires the alignment of pedagogical affordances, ethical and professional judgment, technological–pedagogical competence, and institutional support. Future research could address these limitations by involving larger and more diverse samples across institutions, combining self-reported data with observations or evidence of actual AI use, and examining how institutional contexts shape lecturers' readiness and sustained integration of AI into translation education.

Future research should extend this inquiry by involving larger samples across multiple institutions to examine the applicability and transferability of the proposed four-dimensional framework for lecturer readiness to integrate AI into Translation pedagogy. Mixed-method studies could further validate and refine the framework by combining quantitative measures of lecturer readiness with qualitative evidence from lecturers' experiences and classroom practices. Longitudinal research is also needed to observe how lecturers' readiness develops over time and how AI is actually integrated into Translation classrooms, rather than relying primarily on reported perceptions. Furthermore, comparative research involving lecturers from Indonesia and Timor-Leste could provide insights into how institutional, technological, cultural, and educational contexts shape AI integration and lecturers' evolving professional roles. Such research would contribute to a more comprehensive understanding of how AI reshapes Translation pedagogy and professional practice across different higher-education contexts.

DECLARATION OF GENERATIVE AI

The authors would like to declare the use of artificial intelligence (AI) tools during the preparation of this manuscript. Specifically, ChatGPT was utilized for brainstorming initial concepts and improving the clarity, grammar, and overall language of the text. All final content was reviewed and approved by the authors, who take full responsibility for the integrity of the work

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