



AI Literacy, Integration, and Challenges in EFL Education: Perspectives of Higher Education Teachers in Thailand

**Jenjira Jitpaiboon^a, Irina Elgort^b, Tatchakrit Matyakhan^c,
Thidawan Wichanee^d, Atichat Rungswang^{e,*}, Passapong Sripicharn^f**

^a jenjira.ji@kmitl.ac.th, School of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang, Thailand

^b irina.elgort@vuw.ac.nz, Linguistics and Applied Language Studies, Victoria University of Wellington, New Zealand

^c tatchakrit.m@cmu.ac.th, Faculty of Humanities, Chiang Mai University, Thailand

^d thidawan@snru.ac.th, Faculty of Humanities and Social Sciences, Sakon Nakhon Rajabhat University, Thailand

^e atichat.ru@kmitl.ac.th, School of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang, Thailand

^f passapong.s@arts.tu.ac.th, Faculty of Liberal Arts, Thammasat University, Thailand

* Corresponding author, atichat.ru@kmitl.ac.th

APA Citation:

Jitpaiboon, J., Elgort, I., Matyakhan, T., Wichanee, T., Rungswang, A., & Sripicharn, P. (2026). AI literacy, integration, and challenges in EFL education: Perspectives of higher education teachers in Thailand. *LEARN Journal: Language Education and Acquisition Research Network*, 19(2), 581-605.
<https://doi.org/10.70730/JCOL6093>

Received 25/09/2025	ABSTRACT The growing use of AI in education highlights the need for AI literacy among teachers; however, research on Thai EFL university teachers remains limited. To address this gap, the present study aims to investigate the AI literacy of Thai EFL university teachers, as well as the integration and challenges of using AI tools in English classrooms. This study employed a mixed methods design involving 102 Thai EFL university teachers. The quantitative phase was guided by Ma et al.'s (2024) six-construct framework, which includes benefits, limitations, prompts, evaluation, assessment, and ethics, to assess AI literacy. The scope was expanded to include AI tools beyond ChatGPT. Semi-structured group interviews were conducted to gain deeper qualitative insights, and the data was analyzed using both statistical and thematic approaches. The findings of the present study demonstrate that Thai EFL university teachers are clearly aware of the benefits of AI tools in language teaching, with awareness often linked to the length of their experience using such tools. Teachers with advanced familiarity were able to provide detailed examples of how specific AI tools can be applied in their teaching. AI tools were most commonly used for preparing instructional materials, while assessment emerged as a key area of weakness, highlighting the need for further support in this aspect of classroom practice. These findings offer valuable insights for designing teacher training programs that support AI-informed teaching practices in higher education. Keywords: AI literacy, ChatGPT, Generative AI, instructional technology, teacher training
Received in revised form 08/04/2026	
Accepted 15/04/2026	

Introduction

The influence of emerging technologies on language education has long been explored, but the advent of large language model (LLM)-powered Artificial Intelligence (AI) represents a significant shift, accelerating changes in language teaching and learning. Recent studies highlight the instructional potential of tools like ChatGPT (e.g., Hockly, 2023; Kasneci et al., 2023; Kohnke et al., 2023), but also identifying challenges for English language education. Kasneci et al. (2023) outline both the benefits, such as enhanced reading, writing, and research skills, and the critical concerns, including bias,

plagiarism, overreliance, data privacy, and content accuracy. These findings reinforce the importance of AI literacy for both students and teachers.

In response to this growing need, several frameworks have been proposed to conceptualize and assess AI literacy across educational contexts (Long & Magerko, 2020; Ng et al., 2021; Yi, 2021). Wilton et al. (2022) stress the need for AI literacy among teachers, citing challenges related to ethical use, data transparency, and unclear AI functionalities in educational tools. They advocate for targeted training, interdisciplinary collaboration, and professional learning communities. Building on this, Velander et al. (2024) argue that current discourse around AI literacy often prioritizes technical skills, with less attention given to power dynamics, ethics, and social impact.

Within the Thai context, national initiatives such as Thailand 4.0 emphasize the development of a skilled workforce and the integration of technology in education (Wittayasin, 2017). Nevertheless, previous studies have highlighted challenges in educational quality, workforce preparedness, and English language proficiency, highlighting the need for targeted reforms and capacity building (e.g., Buasuwan, 2018; Jones & Pimdee, 2017; Wittayasin, 2017). For example, Puriwat and Tripopsakul (2020), surveying 132 Thai graduate students nationwide, found the lowest readiness in digital and information skills, followed by learning and innovation skills, with life and career skills rated highest. English proficiency, a key requirement for workforce development, was notably weak. In contrast, Puncreobutr et al. (2022) reported higher levels of digital literacy among young adults in Bangkok and surrounding areas. These findings reflect uneven levels of readiness across different contexts and underscore the need for targeted interventions aligned with national development strategies.

Despite growing global interest in AI literacy, research within the Thai education context remains limited, especially in language teaching and higher education settings. Existing training initiatives tend to focus on general course preparation rather than developing specific, targeted skills. Studies investigating AI literacy in language teaching are scarce (Zhou & Hou, 2025; Xue, 2025), and those focusing specifically on the English as a Foreign Language (EFL) context are even more limited (Pan & Wang, 2025), even though English is widely recognized as a critical component of workforce development in Thailand.

This study argues that enhancing AI literacy among Thai EFL university teachers can improve knowledge transfer and student learning outcomes. It seeks to address this gap by examining the AI literacy of Thai EFL university instructors. The findings aim to inform pedagogical practices, shape policy development, and guide future research within the Thai context, as well as contribute to broader regional discussions on AI literacy in education.

Literature Review

The following section reviews relevant literature on AI literacy frameworks, assessment methods, and research in EFL education with a particular focus on university teachers, and also provides a broader overview of the Thai context to capture the overall landscape.

AI Literacy Frameworks

AI literacy has been conceptualized through various interdisciplinary frameworks that emphasize knowledge, skills, and critical engagement with AI technologies. Long and Magerko (2020) define AI literacy as a set of competencies that enable individuals to critically evaluate, communicate with, and effectively use AI in everyday contexts. Yi (2021) conceptualizes AI literacy as an integration of functional, social, and technological literacies, with an emphasis on metacognition and anticipation.

Ng et al. (2021), through a systematic review, identify four key dimensions of AI literacy: knowing and understanding, using and applying, evaluating and creating, and addressing ethical concerns. Despite providing a broad conceptual foundation, these frameworks often focus on general users or student populations

More recent work has begun to tailor AI literacy frameworks to educational contexts, with Ma et al. (2024) proposing a six-construct framework for language education that encompasses benefits, limitations, prompt design, evaluation, assessment, and ethics. This framework offers a comprehensive and context-specific approach for examining teachers' competencies in using generative AI tools in language teaching.

AI Literacy of University Teachers in EFL Contexts

AI literacy research has largely centered on students, with limited attention to higher-education teachers. Drawing on the digital literacy of teachers standard issued by the Ministry of Education of the People's Republic of China (2022), Feng and Sumettikoon (2024) developed a questionnaire covering five dimensions, namely, awareness, knowledge/skills, application, social responsibility, and professional development, and surveyed 92 EFL teachers from two universities and one vocational college. Teachers reported high awareness but weaker application, attributed to insufficient training and institutional support. The authors call for targeted professional development and collaborative learning structures to translate awareness into effective practice.

A similar pattern is observed in Ma et al. (2024), who introduce a six-construct framework specifying competencies for the ethical and effective use of ChatGPT in language education: benefits, limitations, prompt design, evaluation, assessment, and ethics. Survey responses from 492 educators in 41 countries (university faculty, doctoral students, research staff, and schoolteachers) showed high literacy regarding benefits but comparatively low literacy in assessment and prompt design. ChatGPT was used chiefly to support teaching and learning, especially writing, with concerns centering on accuracy, limited personalization, and possible reductions in student motivation and critical thinking. These findings align with Alsaffar (2025), who highlights the importance of digital readiness for personalized learning.

Zhou and Hou (2025) explored EFL teachers' use of AI tools through interviews with 24 participants. Teachers reported using AI primarily for assignment distribution, grading, material preparation, translation, and classroom guidance. They also faced challenges such as limited technical support and insufficient training. The study highlights the need for continuous professional development, ethical AI practices, human oversight, and policy-backed structured training to support effective AI integration.

Pan and Wang (2025) studied AI literacy among 782 English teachers from 54 colleges and universities in China, focusing on how age and teaching experience affect literacy levels. They created and validated a scale with five components: AI knowledge, use, assessment, design, and ethics. Teachers were categorized into four literacy profiles: poor, moderate, good, and excellent. Those aged 27 to 41 and those with four to eleven years of teaching experience were more likely to exhibit higher levels of AI literacy.

Xue (2025) examined digital literacy development among nine Chinese EFL teachers in a university-based professional learning community. Drawing on data from meetings, interviews, observations, and journals, the study identified three growth models based on teacher experience. Novice teachers improved digital skills with mentoring support, veteran teachers deepened application through experience and reflection, and lead teachers, already proficient, acted as mentors and role models.

Research on AI Integration in Thai EFL Education

In Thailand, AI integration in EFL higher education remains emergent. Ulla et al. (2023) surveyed 17 university EFL teachers with follow-up interviews and found broadly positive attitudes toward ChatGPT for lesson planning and activity design, alongside concerns about reliability, trustworthiness, and student overdependence. Extending this line of inquiry, Kohnke and Ulla (2024) examined 20 Thai English teachers and reported early adoption for writing, editing, and planning, but uneven awareness and

proficiency; perceived benefits (workload reduction, instructional enhancement) were tempered by worries about overreliance, reduced interaction, content accuracy, and academic integrity.

Complementing these educator-focused studies, Waluyo and Kusumastuti (2024) examined the experiences of 25 students and 3 teachers with a range of GenAI tools, including Grammarly, Quillbot, ChatGPT, Bard, BingChat, and Reverso, reporting high student acceptance and perceived gains in efficiency and language confidence.

Several studies have investigated AI implementation within Thai EFL classrooms, with a strong focus on writing-related contexts. Sawangwan (2024) found that integrating ChatGPT significantly improved students' writing skills when paired with teacher guidance, underscoring the importance of teacher roles in technical, ethical, and instructional support. Jitpaisarnwattana (2024) used ChatGPT as a diagnostic tool in a paragraph writing course, demonstrating its effectiveness in delivering structured, accessible feedback and promoting learner autonomy.

In more specialized courses, Taylor (2024) explored AI-integrated blended learning by using tools such as Microsoft Editor, Microsoft Reflect, and Microsoft Reading Progress in an English for Specific Purposes (ESP) course for economics students, noting varied experiences based on proficiency levels and identifying social interaction as the most challenging aspect. Pucharoen (2024) evaluated an AI-powered speaking coach in a private university, reporting marked improvements in fluency and pronunciation, especially in preparing students for careers in customer service and business.

Tantivejakul et al. (2024) examined students' attitudes toward GenAI in academic and professional PR writing following GenAI tools training, finding openness to its use in English but hesitancy in professional contexts due to a lack of clear guidelines and individual differences in readiness. Likewise, Tangpijaikul (2025) employed ChatGPT in both remedial and English major classes to provide immediate grammar feedback using simple prompts like "Check:", showing its value in supporting lexical and grammatical awareness through real-time AI-generated feedback.

These findings suggest that the integration of AI tools in EFL university classrooms in Thailand remains in its early stages. Preliminary studies have explored both teacher and student perceptions of generative AI tools such as ChatGPT and Grammarly, revealing a mix of enthusiasm and caution. While interest in these technologies is growing, the findings also highlight a lack of targeted training, inconsistent awareness, and institutional ambiguity, reflecting a broader global call for more structured and comprehensive professional development in AI literacy. To date, however, no study has systematically examined the AI literacy of Thai EFL university

teachers or assessed their competencies across the range of skills needed for effective, ethical AI integration.

To address this gap, the present study adopts the six-construct AI literacy framework developed by Ma et al. (2024), which conceptualizes AI literacy on a global scale across six key domains: benefits, limitations, prompts, evaluation, assessment, and ethics. This rigorously validated framework makes a significant contribution to the field of language teaching by providing a structured lens through which to evaluate teachers' competencies, concerns, and patterns of use related to generative AI tools. Situating this investigation within a national context, the study also broadens its scope to include AI tools beyond ChatGPT, offering insights relevant to pedagogical development, institutional policy, and future research.

Accordingly, this article aims to answer the following research questions:

1. What is the level of AI literacy among Thai EFL university teachers?
2. In what ways do Thai EFL university teachers use AI tools?
3. What challenges do Thai EFL university teachers face when using AI tools?

Methodology

Research Design

This study employed an embedded mixed-methods design, combining quantitative and qualitative data through questionnaires to investigate the level of AI literacy and semi-structured group interviews to gain a deeper understanding of the participants' views and behaviors.

Participants

The participants of the study were Thai EFL university teachers nationwide, including those from both public and private universities, regardless of age or years of teaching experience. Following the invitation process, 102 Thai EFL teachers confirmed their participation in the study. Their demographic information is summarized in Table 1.

Table 1*Demographic information of the respondents (N = 102)*

Parameter	Specification	Count	%
Gender	Female	54	53%
	Male	40	39%
	Others	8	8%
Age	25–34	20	20%
	35–44	48	47%
	45–54	30	29%
	55–64	4	4%
Type of University	Public	93	91%
	Private	9	9%
Familiarity with AI Tools	Beginner	13	12.7%
	Intermediate	41	40.2%
	Advanced	42	41.2%
	Expert	6	5.9%

This sample size is comparable to those used in similar studies on AI literacy and EFL teachers (e.g., Feng & Sumettikoon, 2024; Zhou & Hou, 2025) and is considered sufficient for descriptive statistical analysis and for capturing diverse perspectives across higher education contexts in Thailand.

Research Instruments

The questionnaire consisted of three main parts. The first part was designed to collect demographic information (e.g., gender, age, education, location, and self-perceived familiarity with AI).

The second part of the questionnaire adopted the instrument developed by Ma et al. (2024), which includes 26 items aligned with six constructs of ChatGPT literacy: benefits, limitations, prompts, evaluation, assessment, and ethics. Responses were measured on a six-point Likert scale ranging from 6 (Strongly agree) to 1 (Strongly disagree), consistent with the original study. Ma et al.'s questionnaire was rigorously validated through item analysis, reliability analysis, and confirmatory factor analysis (CFA). The validation yielded strong results, with item-total correlations ranging from 0.619 to 0.876 and Cronbach's alpha coefficients ranging from 0.82 to 0.94. The six-construct model also demonstrated good fit in CFA, with CFI = 0.925, TLI = 0.91, RMSEA = 0.07, and SRMR = 0.07. This strong psychometric support was the primary reason their questionnaire was selected for use in the current study. To broaden the scope beyond ChatGPT, the phrase "or other AI tools" was added to relevant items, and the remaining content was left unchanged.

While the original instrument developed by Ma et al. (2024) demonstrated high internal consistency, a new reliability analysis was conducted with the current sample ($N = 102$), in line with Woodrow's (2022) assertion that reliability pertains to the data collected rather than the instrument itself. According to DeVellis (2016), values above 0.70 are considered acceptable, with 0.80 or higher preferred (Pallant, 2007). Cronbach's alpha coefficients for the six constructs in the current study ranged from 0.78 to 0.87, indicating acceptable to high internal consistency. These results suggest that the measurement tool yields reliable, repeatable, and consistent outcomes, supporting its use with this new sample.

The third part contained open-ended questions exploring how AI tools support teaching, the challenges encountered during their use, and the specific courses and AI tools (other than ChatGPT) involved. The semi-structured group interview questions were aligned with the questionnaire to enable data triangulation and to gather more detailed information.

Data Collection

For the quantitative phase, participants were recruited via email invitations and posts on social media platforms in Thailand, such as Facebook and Line. They completed the questionnaire through a Google Form, which took approximately 20 minutes.

For the qualitative component, semi-structured group interviews were conducted via Zoom with ten Thai EFL university teachers. These participants were purposively selected to ensure representation across different geographic regions of Thailand and the diverse locations of their universities. The interviews were conducted in Thai, allowing for ease of communication and accurate transcription, with participants' consent. Participants were organized into small groups of 3-4 to facilitate discussion and interaction, ensuring that each participant could share their perspectives.

Before data collection commenced, the research protocol was submitted to and approved by the Human Research Ethics Committee at the first author's institution, with a strong emphasis on voluntary participation throughout the process.

Data Analysis

Questionnaire data were primarily analyzed descriptively using SPSS software to calculate percentages, means (M), and standard deviations (SD). Open-ended questions and interview data were transcribed and analyzed thematically through manual content analysis. Data related to the use and

challenges of AI tools followed the thematic framework established by Ma et al. in their data analysis.

Ma et al. identified themes for AI use in education, including teaching materials preparation, integration into learning and teaching, formative and summative assessment, prompt training, feedback on student writing or language use, revision/proofreading, and use as a self-learning tool. In the present study, formative and summative assessment were combined into a single category focused on AI use in assessment and marking. This decision was made to streamline the analysis and reflect how, in practice, teachers often do not distinguish sharply between formative and summative functions when applying AI tools for evaluation purposes.

Material design was grouped under teaching materials preparation, and prompt training was excluded because no participants reported engaging in it. The three instructional phases proposed by Ma et al., namely, Before Instruction, During Instruction, and After Instruction, were retained. In addition, an “Across Phases” category was introduced to capture AI uses that were not confined to a single instructional stage. For AI-related challenges, the study also adopted Ma et al.’s seven categories: Access, Assessment, Ethics, Evaluation, Limitations, Prompts, and Teacher Readiness.

Initial coding was conducted by the first author, and the data were then divided among the second, third, and fourth authors for independent review. Interrater reliability was assessed using Krippendorff’s Alpha, yielding a value of 0.78, which indicates substantial agreement among coders (Landis & Koch, 1977).

Findings

Question 1: What is the level of AI literacy among Thai EFL university teachers?

AI literacy levels among Thai EFL university teachers

The overall mean scores obtained by Thai EFL university teachers across various constructs are presented in Table 2.

Table 2*Thai EFL university teachers' literacy in using AI tools (N=102)*

Constructs	Benefits	Limitations	Ethics	Evaluation	Prompts	Assessment	Overall Average
M	5.02	4.80	4.74	4.60	4.57	4.26	4.67
(SD)	(1.07)	(1.20)	(1.33)	(1.14)	(1.17)	(1.38)	(1.22)

According to Table 2, Thai EFL university teachers self-reported a generally high level of AI literacy (Overall $M = 4.67$, $SD = 1.22$) in utilizing AI tools (including generative AI). These results reflect the teachers' perceptions and attitudes toward their ability to use AI in educational contexts rather than measured performance. They showed the strongest confidence in recognizing AI benefits ($M = 5.02$, $SD = 1.07$) and reported a similarly strong awareness of limitations ($M = 4.80$, $SD = 1.20$) and ethical considerations ($M = 4.74$, $SD = 1.33$) related to the use of AI tools. Their self-reported ability to evaluate AI outputs ($M = 4.60$, $SD = 1.14$) and write effective prompts ($M = 4.57$, $SD = 1.17$) is also strong. On the other hand, their average self-reported use of AI for assessment purposes was somewhat lower ($M = 4.26$, $SD = 1.38$), indicating that the teachers feel less confident about applying AI tools to assess or evaluate their students' performance.

In addition to the mean scores, a large proportion of respondents selected "agree" or "strongly agree" across most constructs, particularly for benefits, limitations, and ethics, indicating a generally positive distribution of AI literacy perceptions.

The findings indicate that Thai EFL university teachers are well-informed about various aspects of AI in education, although focused professional development in AI-based assessment practices could further strengthen their competencies.

AI literacy among Thai EFL university teachers by familiarity level

The data analysis confirms that self-perceived familiarity with AI tools aligns with AI literacy levels among Thai EFL university teachers, as shown in Table 3. Those who rated themselves as beginners, having used these tools only once or twice, showed lower literacy scores, and scores increased significantly with greater experience. The benefits construct, which ranked second among beginners, rises to the top position at intermediate and expert

levels, suggesting that increased engagement with AI tools enhances awareness of their usefulness. In contrast, the ability to use these tools effectively for assessing student performance remains consistently weaker across all experience levels when compared to the other five constructs.

Table 3

Descriptive data based on familiarity with AI tools

	Benefits	Limitations	Prompts	Evaluation	Assessment	Ethics	Overall Average
	<i>M (SD)</i>						
Beginner (N = 13)	4.10 (1.43)	4.21 (1.63)	3.77 (1.57)	3.78 (1.46)	3.42 (1.44)	3.88 (1.43)	3.86 (1.49)
Intermediate (N = 41)	4.90 (0.94)	4.74 (0.96)	4.34 (1.01)	4.48 (0.95)	4.02 (1.20)	4.84 (1.10)	4.55 (1.03)
Advanced (N = 42)	5.30 (0.88)	4.91 (1.00)	4.92 (1.05)	4.81 (1.02)	4.60 (1.31)	4.87 (1.38)	4.90 (1.11)
Expert (N = 6)	5.83 (0.33)	5.75 (0.34)	5.33 (0.63)	5.67 (0.40)	5.29 (0.94)	5.71 (0.56)	5.60 (0.48)

Question 2: How do Thai EFL university teachers use AI tools in their teaching and learning practices?

Content Area

According to the survey participants, the 190 Thai EFL university courses where AI tools were integrated into teaching were categorized into content areas (Table 4). The most frequently mentioned courses were related to English for Academic Purposes (EAP) or ESP (24%), followed by speaking (22%) and writing (13%) courses. The fact that courses such as Artificial Intelligence and Language Learning (included in the “Other” category) are offered in Thai universities indicates a growing awareness of the role of AI in Thai EFL tertiary education.

Table 4

Summary of Content Area

Categories	Counts	%
EAP/ESP	45	24%
Speaking	41	22%

Writing	24	13%
Reading	16	8%
General English	15	8%
Linguistics	12	6%
Listening	8	4%
Translation	8	4%
Language and culture	8	4%
Teaching	8	4%
Others (e.g., Artificial Intelligence and Language Learning, etc.)	5	3%

The use of AI tools in EFL university teaching

All responses (N=102) about the use of AI tools in EFL teaching were coded and analyzed thematically (see Table 5). The majority of responses related to the preparation of teaching materials (82%), followed by revision/proofreading (13%) and integration into learning and teaching activities (11%). A detailed analysis of each theme is presented below, organized by frequency and supported by data from semi-structured group interviews.

Table 5

Summary of AI Tool Use in EFL Teaching

Instructional Phase	Theme	Count	%
Before Instruction	Teaching materials preparation	84	82%
During Instruction	Integration into learning and teaching activities	12	11%
After Instruction	Providing feedback on student writing or language use	2	2%
Across Phases	Revision/proofreading	14	13%
Across Phases	Conducting formative and summative assessment	11	10%
Across Phases	Self-learning tool/assistant	6	5%

Teaching materials preparation. This theme emerged prominently, indicated explicitly by terms such as “prepare” and “plan.” Participants described various uses of AI in preparing teaching resources. For instance, one respondent stated, “I mainly use AI for preparing course materials, designing test items, and getting advice for lesson planning.” Another Thai EFL university teacher mentioned, “I have only used ChatGPT for teaching preparation-related activities, such as finding additional reading texts tailored to students’ proficiency levels, creating listening scripts, and designing exercises.” Two teachers also shared a practical approach during interviews, explaining that they turn to AI when they lack ideas for classroom activities,

adapt AI-suggested activities to their teaching contexts, and simplify materials to align with their students' competency levels.

Revision/proofreading. The most frequently mentioned words related to this theme are “paraphrasing” and “checking grammar.” For instance, one respondent stated, “I use ChatGPT and other AI tools to get general ideas, like checking grammar or paraphrasing.” During the interviews, two teachers echoed these insights, explaining they primarily use AI tools “to refine writing or paraphrase when struggling to find alternative wording, or simply to help refine language use.” Another teacher similarly noted, “I often rely on AI tools to quickly check sentence structure and improve clarity when preparing materials or reviewing my own writing.” This suggests that AI tools are also perceived as valuable for ongoing professional development, even when not fully integrated into classroom practices.

Integration into learning and teaching activities. This theme highlights how teachers use AI across classroom contexts, reflecting growing AI literacy. Several use AI as a writing coach to help students evaluate work, reflect on feedback, and build real-world communication skills. One teacher shared, “I generated speeches on AI for listening activities in English for Hospitality,” whereas another noted, “I allow students to use AI to justify the readability of texts,” referring to tools like ChatGPT or Grammarly. A similar approach was noted in translation classes, where AI helped simplify and clarify texts.

Teachers also use AI to foster more interactive, student-centered learning. For instance, one asked students to create different story versions with AI for group comparison, and another used AI to support idea generation for class debates. These practices show how AI can promote collaboration and critical thinking in the classroom.

Conducting formative and summative assessment. Only a few Thai EFL university teachers reported using AI tools for evaluating assignments and supporting grading, as indicated in the open-ended responses, mainly in writing-related tasks. Terms such as “grading” appeared occasionally, along with specific references like “assess students' essays.” For example, one teacher stated, “ChatGPT is primarily used for lesson planning and grading, such as assessing student writing assignments.” When asked to provide more detail during the interview, most teachers mentioned using AI to help brainstorm test items or quizzes. However, none clearly explained how AI was used directly in the grading process.

Self-learning tool/assistant. References to using AI as a self-learning or professional support tool were limited, possibly due to the study's focus on classroom-related practices. Some teachers reported using AI for personal academic development rather than for direct teaching. For example, one teacher shared, “I rarely use them for the classroom. I use them for

research,” while another noted, “I don’t use it in classroom teaching, just for personal use.”

Providing feedback on student writing or language use. This theme was the least frequently observed in the current study. In the survey responses, one teacher noted, “I use it with lesson planning, developing teaching materials, and giving feedback,” though no further details were provided. Despite its low frequency in the survey data, interview responses provided more detailed insights into how AI tools were used for feedback purposes. One teacher explained, “I applied ChatGPT with a writing rubric and asked it to provide feedback on students’ writing. It created a space for discussion about both the writing pieces and the AI-generated opinions on the work.”

AI tools used by Thai EFL university teachers

This section explores AI tools other than ChatGPT. From participants’ open-ended responses, 146 mentions of AI tools were collected. As many teachers referred to the same tools, these were consolidated into 38 unique AI tools and categorized by function, as shown in Table 6. Among the 102 participants, 26 Thai EFL university teachers (25%) reported experience with ChatGPT only. One teacher mentioned Google Workspace, which is Google’s suite of cloud-based productivity and collaboration tools including Gmail, Google Drive, and Google Docs. Since AI features are not consistently available across all components of Google Workspace, the response was excluded for being too broad. Nonetheless, the mention of commonly used tools such as Google Docs and Google Workspace suggests an emerging awareness of AI integration in everyday digital tools.

It is noteworthy that respondents who mentioned more than three different AI tools typically rated themselves at the “advanced level” in AI familiarity. Several teachers in this category elaborated on their tool usage in detail. For instance, one teacher stated, “I mostly use Grammarly for grammar and structure checking during script or essay correction, and ChatGPT and Gencraft to generate sentences or images for writing prompts.” Another teacher shared, “Claude AI, ChatGPT, and DeepSeek for academic work; Perplexity AI for general searching; Copilot and ChatGPT for listening and speaking activities.”

Table 6*AI tools used by Thai EFL university teachers*

Categories	Other AI Tools	Count	%
AI Chatbots & Conversational AI	Google Gemini (31), Claude AI (19), Perplexity (13), Deepseek (10), Microsoft Copilot (8), Meta AI	82	57%
AI Writing & Editing Assistance	Grammarly (12), Quillbot (12), GravityWrite, ZeroGPT, Google Docs	26	18%
AI for Visual Art, Music, Video, and Presentation Design	Canva (3), Gamma.AI (3), DALL·E, Midjourney, Gencraft, Dreamina, AI Art Generator, Napkin AI, Suno, Sora, AI Bing Image Generator	15	10%
AI Research & Academic Assistance	SciSpace (4), Research Rabbit (2), Elicit (2), NotebookLM (2), Consensus AI, Jenni AI, ChatPDF	13	9%
AI for Teaching & Education	Brisk Teaching, MagicSchool AI, Woodclap, MindMeister	5	3%
AI Speech & Voice Tools	ttsfree.com, Murf AI, Happytranscribe, Botnoi	4	3%
Translation Tool	Microsoft Bing Translation	1	1%

Question 3: What are the challenges and concerns in using AI Tools?

The analysis of responses to the open-ended questions regarding the challenges and concerns associated with using AI tools for EFL language learning and teaching in the Thai university context is presented in Table 7.

Table 7*Summary of challenges in using AI tools for EFL learning and teaching*

Categories	Counts	%
Teacher readiness	37	36%
Evaluation	31	30%
Ethics	18	18%
Limitations	18	18%
Prompts	13	13%
Access	11	11%
Assessment	3	3%

Teacher readiness. This emerged as the predominant concern among Thai EFL university teachers. Issues within this theme included classroom management difficulties, student engagement, and concerns about students' overreliance on AI tools. These concerns reflect teachers' uncertainty about how to guide students in using AI appropriately, suggesting a lack of clear strategies or training to support responsible AI use in the classroom. One participant noted in the open-ended questionnaire, "Although AI has great potential to enhance students' writing skills, I am reluctant to introduce it to my students. Careful pedagogical planning is needed to integrate AI into classroom lessons."

Evaluation. In this construct, concerns regarding accuracy, relevance, potential bias, and information sources prominently emerged in the qualitative responses, highlighting persistent uncertainties about the trustworthiness of AI tools. For instance, one Thai EFL university teacher commented, "I have not experienced any major challenges. My only concern is about the trustworthiness of ChatGPT, as I sometimes have to double-check the information provided by this AI tool." Another teacher recommended adopting AI as a "thinking partner," emphasizing that AI should facilitate thorough planning rather than dictate actions blindly, a perspective they suggested should also be encouraged among students. Insights from the interviews further emphasized these concerns. Teachers expressed apprehension about validating AI-generated content. For example, one participant stated, "I am not sure how we can trust or validate the information generated by GenAI."

Ethics. This theme concerns the ethical use of AI and issues related to plagiarism. One teacher suggested that such concerns can be addressed by modifying the evaluation approach, specifically, through project-based assessments that more effectively evaluate students' competencies and emphasize the skills demonstrated throughout the process, rather than solely the final product. Another teacher, during the interview, remarked that this process-focused approach could help mitigate overreliance on AI, noting, "Without evaluating the generated sentence, students rely too much on AI for their writing because they know AI can help them with it." These insights highlight the importance of designing assessments that uphold academic integrity and still leverage the benefits of AI tools in educational settings.

Limitations. The data revealed several concerns about the limitations of AI tools, such as usage restrictions in free versions. Some teachers expressed concerns about the speech generated by AI, describing it as robotic or unnatural; one commented, "AI cannot focus on specific consonant sounds like /r/ and /l/ or word stresses if the activity aims to differentiate the sounds." Others were worried about reliability issues, with one teacher noting, "If you want more reliable information from AI, you need

to pay for it, and the costs for one tool are somewhat high.” Additionally, another teacher explicitly highlighted that “It is true that AI tools are getting smarter and smarter. Still, they cannot perform all tasks, such as rating video clips based on very detailed criteria,” emphasizing that despite advancements, AI still has considerable functional limitations.

Prompts. Concerns about prompt usage were also notable in the current study. Most Thai EFL university teachers reported not knowing how to write effective prompts. They mentioned the need to specify detailed instructions or provide examples to ensure that the AI understands their intended request. One teacher noted, “The only challenge is my own prompt literacy. I am not advanced enough to do the prompting. If I were, I would have made the best use of ChatGPT.” Another piece of evidence pointed out that “Prompts are crucial input in collaborating with AI tools; the outcomes would be incompatible if we do not place precise and effective prompts.”

Access. Seven out of eleven comments regarding access to AI tools raised concerns about cost. Thai EFL university teachers noted that paid subscriptions tend to offer more reliable and higher-quality features than free versions, which limits access for those unable to afford them. As one teacher explained during an interview, “The limitation drawn from using AI tools is restricted access to their full functions due to the requirement of paid subscriptions.”

The remaining comments addressed broader access challenges beyond cost. These included unclear policies regarding the extent to which AI is permitted in educational settings, unequal access to devices, and unstable internet connections that hinder effective use of AI tools.

Assessment. Only a few Thai EFL university teachers commented on assessment-related issues. One teacher remarked, “It is difficult to evaluate students’ performance if they are allowed to use AI tools during exams.” The overall lack of discussion may suggest that this area is being overlooked, possibly due to limited literacy in applying AI tools for assessment purposes.

Discussions

The findings provide valuable insights into the AI literacy levels of Thai EFL university teachers. Participants reported AI literacy scores across all six constructs ranging from 4.26 to 5.02, with an overall mean of 4.67. These results demonstrate consistently high levels of AI literacy and slightly higher scores than those reported by language teachers across 41 countries in Ma et al. (2024), whose scores ranged from 3.95 to 4.70 with an overall mean of 4.59.

Thai EFL university teachers rated themselves highest in the “Benefits” construct and lowest in “Assessment,” reflecting a pattern also

observed in the findings of Ma et al. (2024). This alignment suggests a shared recognition of AI's educational potential, alongside a common need for greater support in assessment practices. The similarity in results, despite involving a different group of participants, also supports the validity of Ma et al.'s six-construct framework.

These findings are consistent with prior research highlighting positive awareness of AI tools in the Thai EFL context. For example, Puncreobutr et al. (2022) emphasized the general digital literacy of Thai people, with studies by Ulla et al. (2023) and Kohnke and Ulla (2024) reporting encouraging attitudes towards AI in language teaching, particularly among Thai EFL university instructors. Despite this, the integration of AI in assessment remains underdeveloped. A closely related study by Jitpaisarnwattana (2024) explored the use of ChatGPT for diagnostic assessment and feedback generation, but without incorporating evaluative grading. This points to a need for further exploration into AI's role in comprehensive assessment practices.

The consistently low mean scores in the "Assessment" construct, even among teachers who identified themselves as being at an "advanced" level of AI familiarity, align with the findings of Feng and Sumettikoon (2024). While digital awareness may be high, it does not always translate into effective digital application. This limitation may also be influenced by broader factors, including uncertainty about ethical boundaries in AI-assisted grading, limited assessment literacy related to AI tools, and institutional constraints such as unclear policies and lack of standardized guidelines for AI use in evaluation.

Self-reported familiarity was closely associated with usage frequency: more frequent users reported higher AI literacy, echoing Kohnke and Ulla's (2024) observation that some teachers had only minimal exposure (e.g., a single trial). Across proficiency levels, assessment remained the weakest competence, underscoring the need for targeted professional development. "Advanced" users typically employed multiple tools beyond ChatGPT and described purpose-specific applications. With adequate institutional support, these digitally skilled teachers can serve as lead educators and mentors (Xue, 2025). As such, institutional backing, including funded tool subscriptions and infrastructure, is essential (Ngelambong et al., 2025).

One of the key findings is that AI tools were most frequently integrated into EAP and ESP courses (24%). This pattern aligns with an expanding body of Thai-based research on AI use in these instructional contexts. For instance, Taylor (2024) explored AI-supported learning in English for Economics, Pucharoen (2024) examined its integration within the School of Entrepreneurial Management, and Tantivejakul et al. (2024) investigated student attitudes toward generative AI in academic and

professional public relations writing. Collectively, these studies underscore the role of AI in enhancing students' career-oriented communication skills. The introduction of courses such as Artificial Intelligence and Language Learning further reflects growing institutional awareness of AI's role in Thai EFL tertiary education.

In terms of practical application, the study found that Thai EFL university teachers primarily used AI for preparing teaching materials. This differs from findings reported by Ma et al. (2024), who noted that AI integration was most common in general teaching activities, and Zhou and Hou (2025), who found that AI tools were frequently used for assignment distribution and grading. Kohnke and Ulla (2024) pointed out that, in the Thai context, centrally developed lesson plans and teaching materials may limit individual teachers' autonomy in adopting AI tools more broadly. Furthermore, uncertainty regarding institutional policies, particularly concerning the extent to which AI is allowed in classroom settings, may also act as a barrier to full integration.

A particularly important pedagogical insight emerging from these findings is the concept of AI as a "thinking partner," where teachers and students use AI to support idea development, reflection, and critical evaluation rather than relying on it as an authoritative source. This perspective extends existing discussions of AI use in language education by emphasizing its role in fostering critical engagement rather than passive reliance.

The results also highlight the need for context-specific professional training that goes beyond general AI awareness and focuses on pedagogical applications. Training programs should include practical strategies for evaluating AI-generated outputs, designing AI-assisted assessment tasks, and developing prompt literacy. In addition, institutions should provide clearer guidelines and support structures to help teachers integrate AI tools responsibly and effectively into their teaching.

Conclusions

The findings of this study show that Thai EFL university teachers are aware of the benefits of AI tools in language teaching, yet also revealing key areas of weakness in their application. These results point to the need for targeted support to address teachers' instructional needs in response to the growing demand for professional development in the AI era. They also underscore the importance of integrating AI literacy into English language instruction to better prepare students for a technology-driven society.

Human involvement remains essential in AI-supported education to ensure accuracy, ethical use, and sound pedagogy. Teachers and students need to engage critically with AI-generated content and use it responsibly.

Effective integration depends not only on ongoing professional development and policy support, but also on teachers' ability to adapt their pedagogical practices. As classrooms evolve, developing new literacies, including an understanding of AI's limitations and ethical implications, becomes increasingly important. Despite rapid technological change, human interaction remains central, with teachers continuing to play a key role in facilitating meaningful learning. These findings align with prior studies (e.g., Kasneci et al., 2023; Kohnke & Ulla, 2024; Zhou & Hou, 2025).

Future research could explore underrepresented educational contexts, as well as institutional and cultural differences, to support more inclusive and effective AI practices in language education. Further work is needed to examine AI's role in assessment and feedback across both local and international settings, especially in relation to challenges such as limited teacher capacity and students' overreliance on AI tools. Examining AI through the lens of power dynamics, as suggested by Velander et al. (2024), may also offer deeper insight into its broader implications in educational discourse.

In terms of practical implications, teacher training programs could include workshops on AI-assisted assessment design, prompt engineering for educational tasks, and strategies for critically evaluating AI-generated content. At the institutional level, universities should consider developing clear guidelines on AI use in teaching and assessment, providing access to reliable AI tools, and supporting communities of practice where teachers can share experiences and best practices.

This study contributes to addressing the gap in AI literacy research within the Thai EFL context, where such surveys remain limited. The findings are constrained by the framework used and the timing of data collection. Although the study involved a relatively large sample of Thai EFL teachers, future research with broader samples may yield different insights.

About the Authors

Jenjira Jitpaiboon: An assistant professor at King Mongkut's Institute of Technology Ladkrabang, Thailand. Her research interests include English for Specific Purposes, Computer-Assisted Language Learning, and Languages Other Than English.

Irina Elgort: An associate professor at Centre for Academic Development and Linguistics and Applied Language Studies at Victoria University of Wellington, New Zealand. Her research interests include vocabulary learning, processing, and use, the bilingual lexicon (representation and processing), and reading.

Tatchakrit Matyakhan: An English lecturer at English Department, Chiang Mai University. His research interests include English language teaching, technology in ELT, and language assessment.

Thidawan Wichanee: A lecturer in English Department, Humanities and Social Sciences, Sakon Nakhon Rajabhat University. Her interests concern critical pedagogy, discourse analysis, and language and identity.

Atichat Rungswang: An assistant professor in the Department of Languages, School of Liberal Arts, King Mongkut's Institute of Technology Ladkrabang. His research interests include intercultural communication, discourse analysis and language and gender.

Passapong Sripicharn: An assistant professor in the Department of English, Faculty of Liberal Arts, Thammasat University, Thailand. His main research interests are corpus linguistics, lexicology, terminology, and translation technology.

References

- Alsaffar, R. D. (2025). The role of AI-driven adaptive multimedia systems on personalized learning paths. *Asian Journal of University Education*, 21(2), 380–402. <https://doi.org/10.24191/ajue.v21i1.26>
- Buasuan, P. (2018). Rethinking Thai higher education for Thailand 4.0. *Asian Education and Development Studies*, 7(2), 157–173. <https://doi.org/10.1108/AEDS-07-2017-0072>
- DeVellis, R. F. (2016). *Scale development: Theory and applications* (4th ed.). SAGE Publications.
- Feng, L., & Sumettikoon, P. (2024). An empirical analysis of EFL teachers' digital literacy in Chinese higher education institutions. *International Journal of Educational Technology in Higher Education*, 21, Article 42. <https://doi.org/10.1186/s41239-024-00474-1>
- Hockly, N. (2023). Artificial intelligence in English language teaching: The good, the bad and the ugly. *RELC Journal*, 54(2), 445–451. <https://doi.org/10.1177/00336882231168504>
- Jitpaisarnwattana, N. (2024). Idea sharing: Using ChatGPT for diagnostic writing assessment. *PASAA*, 69, 561–574.
- Jones, C., & Pimdee, P. (2017). Innovative ideas: Thailand 4.0 and the fourth industrial revolution. *Asian International Journal of Social Sciences*, 17(1), 4–35. <https://doi.org/10.29139/aijss.20170101>
- Kasneci, E., Seßler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günemann, S., Hüllermeier, E.,

- Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., . . . Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences*, 103, Article 102274. <https://doi.org/10.1016/j.lindif.2023.102274>
- Kohnke, L., & Ulla, M. B. (2024). Embracing generative artificial intelligence: The perspectives of English instructors in Thai higher education institutions. *Knowledge Management & E-Learning*, 16(4), 653–670. <https://doi.org/10.34105/j.kmel.2024.16.030>
- Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal*, 54(2), 537–550. <https://doi.org/10.1177/00336882231162868>
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33(1), 159–174. <https://doi.org/10.2307/2529310>
- Long, D., & Magerko, B. (2020). What is AI literacy? Competencies and design considerations. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1–16). Association for Computing Machinery. <https://doi.org/10.1145/3313831.3376727>
- Ma, Q., Crosthwaite, P., Sun, D., & Zou, D. (2024). Exploring ChatGPT literacy in language education: A global perspective and comprehensive approach. *Computers and Education: Artificial Intelligence*, 7, Article100278. <https://doi.org/10.1016/j.caeai.2024.100278>
- Ministry of Education of the People’s Republic of China. (2022). *Digital literacy of teachers* (JY/T 0646—2022). http://www.moe.gov.cn/srcsite/A16/s3342/202302/t20230214_1044634.html
- Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). Conceptualizing AI literacy: An exploratory review. *Computers and Education: Artificial Intelligence*, 2, Article 100041. <https://doi.org/10.1016/j.caeai.2021.100041>
- Ngelambong, A., Wong, S. F., Kibat, S., Che Ahmat, N., & Scott, N. (2025). AI-powered education: A cross-country exploration of AI literacy among hospitality and tourism educators. *Asian Journal of University Education*, 21(2), 577–587. <https://doi.org/10.24191/ajue.v21i1.39>
- Pallant, J. (2007). *SPSS survival manual: A step-by-step guide to data analysis using SPSS for Windows* (3rd ed.). Open University Press.
- Pan, Z., & Wang, Y. (2025). From technology-challenged teachers to empowered digitalized citizens: Exploring the profiles and antecedents of teacher AI literacy in the Chinese EFL context. *European Journal of Education*, 60(1), Article e70020. <https://doi.org/10.1111/ejed.70020>

- Pucharoen, N. (2024). Unveiling the effects of integrating an AI-powered English speaking coach for students and specific careers in the EDSY program: A study on higher education students in a Thai private university. *Journal of Business Administration and Languages*, 12(2), 141–158.
- Puriwat, W., & Tripopsakul, S. (2020). Preparing for Industry 4.0—Will youths have enough essential skills? An evidence from Thailand. *International Journal of Instruction*, 13(3), 89–104.
<https://doi.org/10.29333/iji.2020.1337a>
- Puncreobutr, V., Waiyakarn, S., Tapaneeyakorn, W., & Chuepan, A. (2022). Factors influencing the development of digital literacy skills in Thailand according to the Thailand 4.0 policy. *Webology*, 19(2), 9273–9284.
- Sawangwan, S. (2024). ChatGPT vs teacher roles in developing EFL writing. *International Journal of Computer-Assisted Language Learning and Teaching*, 14(1), 1–21. <https://doi.org/10.4018/IJCALLT.361235>
- Tangpijaikul, M. (2025). Exploring the lexical approach for vocabulary learning through AI-driven feedback. *LEARN Journal: Language Education and Acquisition Research Network*, 18(1), 1015–1038.
<https://doi.org/10.70730/SFNP1171>
- Tantivejakul, N., Chantharasombat, J., & Kongpolphrom, W. (2024). Voices of the future: Exploring students' views on the use of GenAI in academic and professional PR writing. *LEARN Journal: Language Education and Acquisition Research Network*, 17(2), 511–537.
- Taylor, P. (2024). Blended learning challenges of EFL undergraduate students: Student learning experience in an AI-integrated ESP course. *Studies in English Language and Education*, 11(3), 1431–1449.
<https://doi.org/10.24815/siele.v11i2.37472>
- Ulla, M. B., Perales, W. F., & Busbus, S. O. (2023). “To generate or stop generating response”: Exploring EFL teachers' perspectives on ChatGPT in English language teaching in Thailand. *Learning: Research and Practice*, 9(2), 168–182.
<https://doi.org/10.1080/23735082.2023.2257252>
- Velander, J., Otero, N., & Milrad, M. (2024). What is critical (about) AI literacy? Exploring conceptualizations present in AI literacy discourse. In A. Buch, Y. Lindberg, & T. Cerratto Pargman (Eds.), *Framing futures in postdigital education* (pp. 139–160). Springer.
https://doi.org/10.1007/978-3-031-58622-4_8
- Wilton, L., Ip, S., Sharma, M., & Fan, F. (2022). Where is the AI? AI literacy for educators. In M. M. Rodrigo, N. Matsuda, A. I. Cristea, & V. Dimitrova (Eds.), *Artificial intelligence in education* (Lecture Notes in Computer Science, Vol. 13356). Springer.

- https://doi.org/10.1007/978-3-031-11647-6_31
- Wittayasin, S. (2017). Education challenges to Thailand 4.0. *International Journal of Integrated Education and Development*, 2(2), 29–35.
- Waluyo, B., & Kusumastuti, S. (2024). Generative AI in student English learning in Thai higher education: More engagement, better outcomes? *Social Sciences & Humanities Open*, 10, 101146. <https://doi.org/10.1016/j.ssaho.2024.101146>
- Woodrow, L. (2022). *Introducing researching English for specific purposes*. Routledge.
- Xue, L. (2025). Urgent, but how? Developing English foreign language teachers' digital literacy in a professional learning community focusing on large language models. *European Journal of Education*, 60(1), Article e12899. <https://doi.org/10.1111/ejed.12899>
- Yi, Y. (2021). Establishing the concept of AI literacy. *Jabr–European Journal of Bioethics*, 12(2), 353–368.
- Zhou, C., & Hou, F. (2025). How do EFL teachers utilize AI tools in their language teaching? *Theory and Practice in Language Studies*, 15(2), 403–413. <https://doi.org/10.17507/tpls.1502.10>