



Integrating Artificial Intelligence Tools into English Language Teaching: Opportunities and Challenges for Teachers

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Abstract

Over the past decade, the role of artificial intelligence (AI) in education has shifted from supportive digital tools to more sophisticated systems with an active learning and teaching function. The present study discusses literature between 2021 and mid-2025 on the use of AI tools in English Language Teaching (ELT), with a specific concentration on teachers' attitudes, potential, and concerns. A PRISMA-guided methodology drove the search and screening of 65 peer-reviewed papers, case studies, and practitioners' reports from around the globe. The review classifies main categories of AI applications, including adaptive learning systems, automatic evaluation systems, conversational agents, translation and multimodal tools, and AI literacy tools. The evidence points to potential benefits, such as personalized learning, productivity gains for teachers, enhanced learner engagement, and enhanced access for students from low-resourced environments. Simultaneously, key issues are flagged concerning pedagogy, infrastructure, teacher education, ethics, privacy, and professional identity. Case studies report on actual teacher and student experiences using ChatGPT, Duolingo, and Grammarly, illustrating possibilities as well as dangers for classroom adoption. The review further points towards the incorporation of AI literacy in teacher training, provision of ongoing professional development, and building critical digital literacy. The findings first and foremost signal that the successful use of AI in ELT should appropriately weigh teaching methods and technological innovation, moral rights, and contextualization in their upholding of fairness and longevity.

Introduction

Over the past decade, education technology has evolved from peripheral tools such as learning management systems, multimedia resources, and language lab computers to smarter, more adaptive, and interactive technologies. The evolution of artificial intelligence (AI) techniques, especially large language models (LLMs), generative AI, natural language processing (NLP), and speech recognition, has expedited the shift (Reddy and Reddy, 2024). These developments make possible systems that can generate content on a customized basis, simulate chat interaction, and provide feedback in real time, all capabilities that were previously only imaginable a few years ago. Concurrently with this, attention to AI by policy and institutions has surged. For example, research on trends of AI in Nigerian education reveals that AI is increasingly recognized for online learning, analytics, and adaptive teaching, though its adoption in most schools lags due to infrastructure and capacity deficits (Bali *et al.*, 2024). The emergence of AI and learning research shows growing attention to not just technological development but also its pedagogical, ethical, and equity dimensions (Khan *et al.*, 2025; Rismanchian and Doroudi, 2025).

English Language Teaching (ELT) is a relevant context for examining AI integration for AI integration. Mastering any language inevitably includes repeated practice, immediate feedback, contact with varied input (written, oral, interactive), and space for communicative interaction, contexts where AI technologies can be highly productive. Recent evidence indicates that conversational AI tools are increasingly being studied in ELT; a systematic review of such tools from 2013 to 2023 showed a marked increase in research focus during 2022-2023, with several studies reporting positive outcomes in speaking fluency, reading comprehension and learner motivation (Putri et al., 2025). Additionally, studies in English as a Foreign Language (EFL) settings have found that AI-powered writing assistants, automatic evaluation systems and AI tools for pronunciation or speaking practice can meaningfully supplement classroom instruction (Alhusaiyan, 2025; Abdelhalim and Alsehibany, 2025). Teachers, too, report using AI tools for creating materials, planning lessons, giving corrective feedback, and assessing student work, though with varying confidence and mixed perceptions about risks (Nazaretsky *et al.*, 2022).

This review explores recent literature (2021–mid-2025) on the integration of AI tools into ELT, focusing on both opportunities and challenges for teachers. It examines the types of AI tools in use and their classroom applications, synthesizes evidence of pedagogical, technical, ethical, and contextual benefits, and discusses barriers such as infrastructure, training, policy, and pedagogical concerns. Excluding non-AI technologies, it emphasizes empirical and practitioner studies across global contexts, with particular attention to equity in low-resource settings.

Methodology

Review design

This was a systematic review based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method and included empirical research, case studies, and other practitioner-based evidence published between 2021 and 2025 on the use of AI tools in ELT and, more specifically, those about teachers' use, pedagogical practices, opportunities, and challenges. Thematic synthesis was employed as the included studies varied significantly in research design, educational setting, type of AI employed, and outcomes reported.

Search strategy

For this assessment, a thorough systematic search strategy was adopted to locate relevant peer-reviewed articles, case studies, and practitioner reports published between 2021 and 2025 that are indexed in Scopus, Web of Science, ERIC, and Google Scholar databases (Table 1). To ensure broad coverage of research on integrating AI and ELT, four databases were selected. The search tools were chosen with regard to the multidisciplinary scope of peer-reviewed scholarly literature available. Scopus and Web of Science were selected. ERIC was included due to its particular emphasis on education and educational research. Google Scholar was used to expand retrieval and find potentially relevant articles that may not have been included in the three main databases. Included studies were also reviewed backwards to find more relevant included publications. Some of the terminologies employed in the search process were aggregated, considering the following: “*artificial intelligence*”, “*AI tools*”, “*generative AI*”, “*language education*”, “*English Language Teaching*”, “*AI literacy*” and “*teacher training*”. Additional records were identified through backward citation tracking of included studies.

Table 1: List of strings used for the search strategy

Database	Search string
Scopus	("artificial intelligence" OR "AI tools" OR "generative AI" OR ChatGPT) AND ("English language teaching" OR ELT OR EFL OR ESL OR "language education") AND ("teacher OR educator" OR pedagogy OR "teacher training")
Web of Science	TS= ("artificial intelligence" OR "AI tools" OR "generative AI" OR ChatGPT) AND TS= ("English language teaching" OR ELT OR EFL OR ESL OR "language education") AND TS= ("teacher OR educator" OR pedagogy OR "teacher training")
ERIC	("artificial intelligence" OR "generative AI" OR ChatGPT) AND ("English language teaching" OR EFL OR ESL) AND ("teacher OR educator")
Google Scholar	"artificial intelligence" AND "English language teaching" AND teacher

Eligibility criteria

Studies were included if they met the following eligibility criteria: explicitly examined AI-based technologies with adaptive or generative features; addressed English Language Teaching (ELT) or related language learning contexts; and presented empirical findings, case analyses, or practitioner insights. The exclusion criterion was premised on publications that focus solely on non-AI technologies (e.g., drill-based CALL software) or opinion pieces without empirical grounding.

Screening and selection

All retrieved records were screened by title and abstract, followed by full-text assessment against the inclusion criteria. Duplicate records were removed. Studies not directly relevant to AI in ELT, or published outside the review window, were excluded.

Data extraction and synthesis

Essential information (study context, type of AI tool, educational level, benefits, and challenges reported) was processed into a matrix. To identify new categories from the data on the basis of opportunities and challenges, the authors employed a thematic synthesis approach. These new categories have emerged under the themes of opportunities (e.g., personalization, efficiency, inclusivity, learner engagement) and challenges (e.g., infrastructural, pedagogical, ethical, and professional concerns). The authors paid special attention to the publications about low-resource settings to locate the issues of equity in AI in education.

PRISMA flow summary

The initial search yielded eighty-five articles. After removing duplicates and applying inclusion criteria, sixty-five studies were included in the final synthesis as outlined in Figure 1.

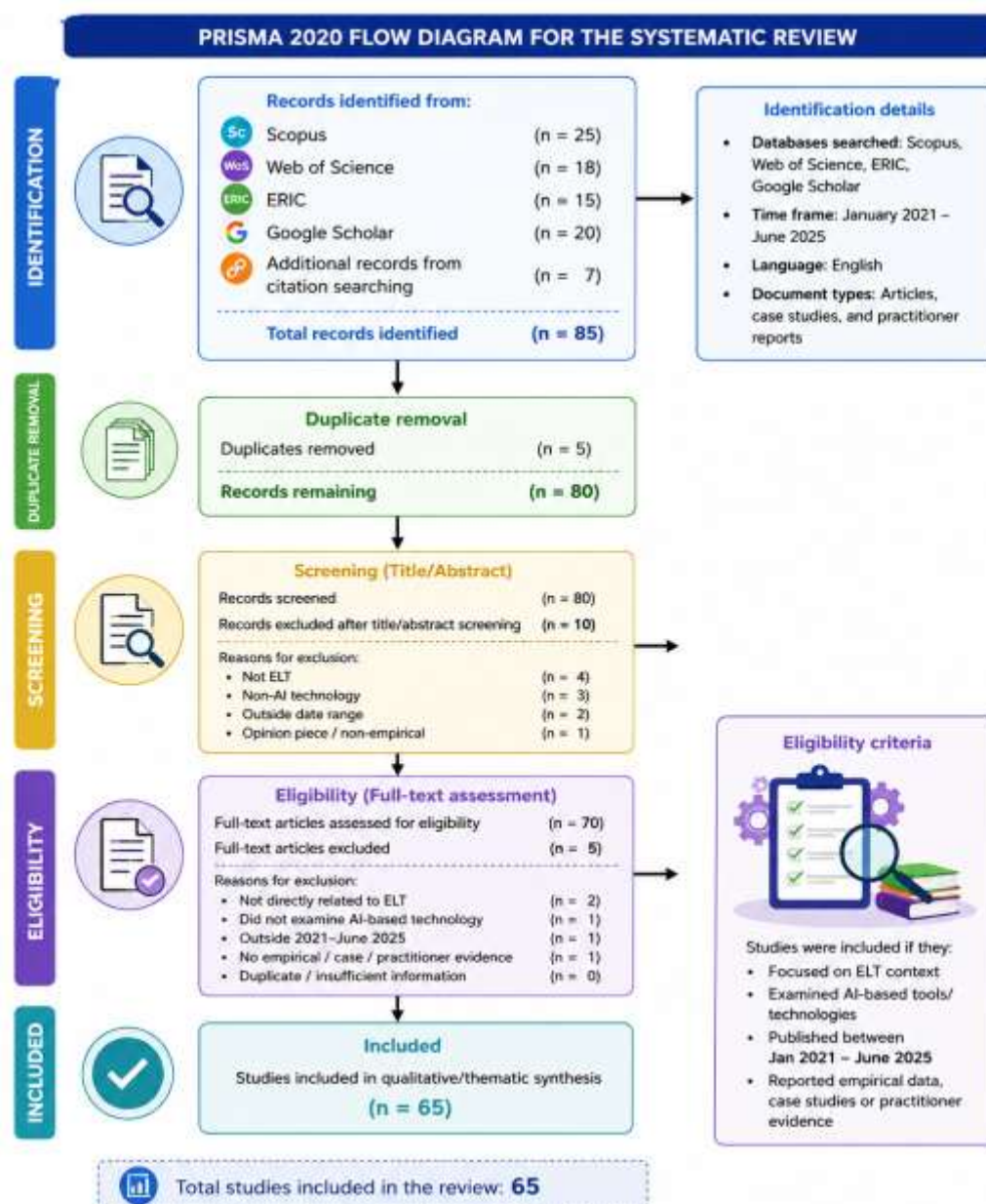


Figure 1: PRISMA flow diagram for the systematic review

Findings and Discussion

From a holistic standpoint, the current overview summarizes research on AI integration in ELT emanating from 2021 to the middle of 2025 that considers both the overarching possibilities and difficulties. Although issues with pedagogy, infrastructure, ethics, and teacher preparedness still exist, AI tools improve personalization, efficiency, learner engagement, and inclusivity in diverse classrooms. The analysis highlights the intricate and dynamic nature of AI in education by identifying thematic patterns across contexts and instruments. From the results, the need for responsible, balanced adoption is emphasized by highlighting consequences for student outcomes, teachers' professional practice, and the larger ELT scene is however emphasized.

Overview of AI in Education

Artificial Intelligence in Education (AIEd) refers to the deployment of computational systems that can perform tasks normally requiring human intelligence, such as understanding natural language, providing feedback, adapting to learners' performance, recognizing speech, or generating new content. These systems typically leverage machine learning (including deep learning), natural language processing, large language models (LLMs), speech recognition, and sometimes generative models. AIEd is not just about automation; it involves adaptation, personalization, and, in many recent usages, generative capacities (e.g., producing spoken or written responses) and interactive conversational agents. According to Rismanchian and Doroudi (2025), recent research shows that AI's role in educational contexts spans both "tool-oriented" functions (e.g., grading, feedback) and "transformative" functions (e.g., shaping learning design, adaptivity, learner agency). Another key concept is AI literacy, which refers to the knowledge, skills, and attitudes required not only to use AI tools, but to understand their limitations and implications (ethical, societal, bias). A summary of AI literacy education in elementary schools has found that factors such as computational thinking, data literacy, balancing interaction with AI, and ethical reflection are implemented and considered by many authors as the main elements of AI literacy (Biagini, 2025; Yim and Su, 2025).

The usage of digital technologies in the teaching of English as a foreign language (ELT) has substantially changed over the years. The initial stages were marked by the implementation of computer-assisted language learning (CALL) tools, drill-and-practice software, multimedia labs, and later web-based learning, which was gradually replaced by more communicative and interactive methods supported by instruments such as video conferencing, etc. The advent of broadband internet and mobile devices facilitated the development of blended learning and online platforms, expanding their user base. In the recent past, the entry of generative AI and conversational agents into the scene has challenged the previously held views on the role of technology in ELT. As a case in point, Pegrum (2020) holds the view that although all the promises of past technologies (radios, language labs, multimedia) were not fully realized, only a few of them were achieved. Current AI tools provide capabilities such as interactive text generation, responsive dialogue, and real-time feedback as the interactive generation of texts, responsive dialogue, and real-time feedback, which make possible an easy transition from one technology to another. Besides, a systematic review of the present artificial intelligence trends in foreign language learning reveals that AI-powered writing assistants, automatic evaluation systems, and translation tools are used more and more in EFL classrooms, particularly for writing and grammar tasks, which are the main focus of the traditional methods. This indicates the transition from teacher-led correction to learner-centered feedback, facilitated by technology (Zhang *et al.*, 2021; Alam, 2023).

Types of AI Tools Relevant to Language Teaching

Recent literature identifies several major categories of AI tools that are particularly relevant for ELT contexts. Below are some of the most salient:

Adaptive learning platforms and intelligent tutoring systems: These kinds of mechanisms collect data on learner performance and, based on the collected data, adapt difficulty, suggest tasks, or make the content flow more quickly. They give support and sequence learning activities depending on the personal requirements of the student (Kumar *et al.*, 2025; Tan *et al.*, 2025). For instance, in higher education, intelligent tutoring systems are going to be used for the purpose of spotting learner gaps and changing the content in a way that it fits the learner.

Automated assessment and writing assistance tools: These are tools that automatically check written work for correct grammar, syntax, and coherence, and produce content if needed. Writing assistants and automatic evaluation systems are featured in recent ELT studies, such as those that discuss the use of writing technology in foreign language learning, where writing is checked and corrected in real time and serves as a source of feedback (Nunes *et al.*, 2022; Alhusaiyan, 2025).

Conversational agents and chatbots: These are conversation systems, usually LLM-based, that aim to reproduce a dialogue with learners. They can be talking companions, interlocutors of pretend play, or responsive support. Reviews of chatbots in ELT show both potential for learner engagement and challenges in maintaining authenticity and complexity appropriate to learner level (Safitri *et al.*, 2025).

Translation, captioning, and multimodal tools: Tools that assist comprehension via translation of text or speech, captions for video, and multimodal input (images, audio, video) are increasingly used to support learners in understanding input and for comprehension tasks. Although specific recent ELT studies often focus more on writing, speaking, and grammar, translation tools are often mentioned as helpful supplements in inclusive and supportive learning environments (Shaojie *et al.*, 2022; Alhusaiyan, 2025).

Tools for AI literacy and ethical reasoning: While perhaps less directly about language skills (reading, writing, speaking), tools and curricula designed to build students' understanding of AI, its functions, biases, and limitations are becoming more common, especially in primary and secondary education contexts. As seen in the review of AI literacy education in primary schools, these tools integrate computational thinking, data science, and ethical reflection (Biagini, 2025; Ng *et al.*, 2022; Yim and Su, 2025).

Opportunities for Teachers in English Language Teaching

a) Personalized Learning

One of the clearest opportunities afforded by AI in ELT is the ability to tailor instruction to the individual learner. AI-driven adaptive systems now make it possible to deliver content that adjusts dynamically to a student's learning pace, linguistic strengths and weaknesses, and preferred modalities. For example, an "AI-Powered System to Facilitate Personalized Adaptive Learning" framework (2025) uses retrieval-augmented generation pipelines and customized knowledge agents to refine content, adjust difficulty, and align learning paths with student needs in real time (Yao and González-Vélez, 2025). Similarly, in Saudi EFL classrooms, it was observed that tools, such as intelligent teaching systems and AI-powered writing assistants, improve writing fluency and support performance by enabling students to work at their own speed, receiving instantaneous feedback on meaning and grammar rather than waiting for teacher grading cycles (Alhusaiyan, 2025). Along with adaptive instruction, data-driven insights on student progress are helping teachers monitor learners more precisely. AI systems now generate learning analytics that make visible patterns of errors (in pronunciation, grammar, usage), track improvement over time, and forecast likely problem areas. One such tool is used in an AI assessment study at Van Lang University, where lecturers noted that AI-based assessment allowed for more consistent measurement of student performance, identification of difficult items in test banks, and more targeted remedial instruction based on error patterns discovered via AI analyses (Luc and Nguyen, 2025).

b) Enhancing Teaching Efficiency

AI also offers considerable gains in automated grading, feedback, and assessment, particularly for writing tasks which traditionally consume much teacher time. For instance, a recent mixed-methods study from Saudi Arabia explored EFL teachers' perceptions of CoGrader, an AI essay-grading tool. Participants reported that CoGrader helped reduce time spent on marking, while providing feedback that students could use to revise, though teachers emphasized the necessity of reviewing AI outputs to ensure alignment with human standards and fairness (Alsalem, 2024). More broadly, the "Human-AI Collaborative Essay Scoring" framework (2024) shows that current LLM-based automated essay scoring systems can complement human graders, enhance consistency, and speed up feedback without sacrificing explanatory power, especially when used in tandem with human oversight (Xiao *et al.*, 2025). In terms of lesson planning support, AI-powered platforms are increasingly being used to generate quizzes, flashcards, adaptive exercises, and draft teaching materials. Binhammad *et*

al. (2024) have introduced a system that is capable of producing assessments automatically, tailoring learning paths individually, and gathering content so as to cut down on teacher preparation time while at the same time keeping the pedagogical relevance. It means that with such functions, teachers will not need to create content for the routine part for long; they can then concentrate on facilitation, error correction, or creative task design instead.

c) Improving Student Engagement

AI tools also have promise in interactive chatbots, virtual tutors, and gamified learning, which can engage learners outside of class, reduce anxiety, and encourage risk-taking in speaking and writing (Zhang, 2024; Ding and Yusof, 2025). A recent study conducted by Dai *et al.* (2025) demonstrated that conversational bots offering adaptive feedback and real-time interaction increase learner motivation and voluntary usage. Students report feeling more comfortable practicing speaking with bot interlocutors, which in turn rubs off on their overall communicative competence. In another instance, a chatbot-assisted learning experiment with secondary school pupils resulted in a strong positive relationship (r approximately 0.61) between the time of interaction and speaking skills improvement. Indeed, students' attitude was reflective of that they increased the conversation time and tried more difficult topics as they proceeded, which may indicate that they were actively engaged (Alenezi and Alenezi, 2025). In addition, AI-powered multimedia tools such as speech recognition, video-adaptive content with subtitles, and multimodal feedback can provide new ways to change the learning environment (AlShaikh *et al.*, 2024; Li *et al.*, 2025). These resources, for example, are potentially useful in the case of listening comprehension, pronunciation, and exposure to different accents. However, fewer studies in the field of English Language Teaching (ELT) have been solely devoted to multimedia or speech processing tools (as opposed to writing and speaking), but the newly found adaptive systems are often interdisciplinary in content (text, audio, visuals) and they are designed to match the learners' preferences and invigorate engagement through a variety of approaches (e.g. adapted content delivery in personalized systems) (Chen *et al.*, 2025; Yao and González-Vélez, 2025).

d) Expanding Access and Inclusivity

Artificial Intelligence tools also have significant potential to help learners with diverse needs. Those learning English as a second or foreign language, learners with limited access to qualified instructors, and students with special education needs. For example, AI-powered writing assistants and automatic evaluation systems in EFL settings in Saudi Arabia were reported to support students who otherwise get little individual feedback in large classes, helping them identify grammatical patterns, improve fluency, and receive corrections outside of normal classroom hours (Alhusaiyan, 2025). Also, the conversational AI bot study (College students ESL) shows that learners with lower confidence levels or speaking anxiety benefit particularly from lower-stakes practice with AI interlocutors before participating in face-to-face or synchronous speaking tasks (Dai *et al.*, 2025). Furthermore, tools such as real-time translation and speech recognition are instrumental in dealing with language barriers and easing the input processing of non-native or multilingual learners. A good example is chatbot systems, which generally use speech recognition (that enables oral input and feedback) to facilitate speaking skills practice, whereby learners can get pronunciation adjustment or organized talk without the presence of a human partner at all times (Dai *et al.*, 2025). Although translation tools are more and more accurate and increasingly usable, limitations remain even in real time; they are still imperfect and, hence, they are mainly employed as a support for comprehension in classrooms where pupils have different mother tongues or where English is a foreign language (Alhusaiyan, 2025).

Challenges and Concerns for Teachers

a) Pedagogical Concerns

The use of AI in the classroom is a big change, and it comes with some significant pedagogical tensions that teachers will have to deal with. One of the main concerns is the danger of putting too much trust in technology: if students (and teachers) rely on AI to give them the answers, to write, or to solve the problems, then the moments in which the students struggle with the task, reflect on their thinking, and thus deepen their understanding will be limited; hence, skill development and critical thinking may be weakened (Zhai, 2024; Klimova, 2025). Related to that is the issue of how one can balance the use of AI and, at the same time, maintain the communicative and human-centered approaches which are the basis of modern ELT: although AI can provide quick corrective feedback or can simulate the role of an interlocutor, it still cannot fully take over the delicate, context-sensitive, scaffolding, affective support, and sociocultural mediation that human teachers give. Therefore, the commentators recommend that AI be used to *augment* the communicative, task-based, and learner-centered pedagogy, which is the closest to the new pedagogical methods, and that teachers make activities that require the original processing, reflection, and interpersonal interaction of the students because these are beyond the capabilities of AI (Zhai *et al.*, 2024).

b) Technical and Infrastructural Limitations

Technical and infrastructural limitations remain important barriers to AI implementation with a fair share of benefits. A lot of schools and universities, particularly those located in low- and middle-income areas, are suffering from a lack of devices, unstable or costly internet connections, and tight budgets for licensing advanced platforms. Most of UNESCO's Global Education Monitoring Analyses and reviews from the same and related sources point out that there are still some digital divides that may lead to the deepening of educational inequities that already exist if AI is deployed without targeted investment and planning (Hara, 2024; Khan *et al.*, 2024). Even when there is basic infrastructure, the need for training to effectively use AI tools is very high. Teachers' surveys and national studies indicate that many teachers have received very little or no professional development specifically for AI, and as a result, they have been left to their own devices to figure out how to evaluate the quality of the tools, understand the analytics, and implement the pedagogical use of AI rather than the technical one (Gangone, 2024).

c) Ethical, Privacy, and Assessment Concerns in ELT

Educational AI (Artificial Intelligence) systems collect extensive details of the learners (such as drafts, audio recordings, logs of answers, interaction metadata, etc.) and have sparked an issue about the privacy of students and the security of data. Worldwide rules highlight the truthful use of data, properly organized consent procedures, and leadership mechanisms to avoid misuse. Global regulations emphasize honesty in data use, well-structured consent routines, and leadership arrangements to prevent abuse. Usually, teachers and schools have insufficient knowledge of data practices by vendors and legal obligations, which leads to rising institutional risks (Li *et al.*, 2023). Another problem that is tightly connected to the former is bias in AI algorithms and fairness in language assessment. Automated essay scoring and other types of automated systems for assessment may reflect the biases that are in the training data used for automation; hence, ESL learners may be affected, in case they are speakers of non-standard varieties or learners who are from under-represented backgrounds (Alvero *et al.*, 2025).

One of the recent studies on fairness in AES and bias towards ELLs exposes the gaps and suggests auditing, calibration, and human-in-the-loop scoring as measures of protection against inequity (Huang *et al.*, 2025). Therefore, teachers must be very careful with data governance issues and algorithmic fairness when they decide on AI tools for assessment.

d) Professional Identity and Role of Teachers

AI integration is also prompting reconsideration of teachers' professional identities and roles and, at times, even fear of it. The media reports and research questioning whether

generative AI will "substitute educators" have led to worries; however, real-life investigations indicate that the AI impact on teaching is different from that in which staff is eliminated, but rather that human thinking, interpersonal abilities, and educational experience are still required. Many educators report optimism about workflow gains alongside unease about deskilling and workload shifts (Chan and Tsi, 2024; Stacey *et al.*, 2024; Minotakis, 2025). Practically, teachers are being asked to adopt new competencies, prompt design, critical evaluation of AI outputs, interpretation of learning analytics, and stewardship of ethical practice, which requires redefinition of teacher training programs and career-long professional development. Institutional support, collaborative professional communities, and role reconceptualization are therefore essential so that teachers can lead AI integration rather than simply react to it (Kim, 2024; Chan and Tsi, 2024; Ghiasvand and Seyri, 2025; Mouta *et al.*, 2025).

Case Studies and Examples

Recent empirical work provides detailed examples of how AI tools are being integrated into ELT, what teachers and learners actually experience, and what outcomes emerge. A few such concrete examples are actual case studies of how AI was successfully used in the classroom, what teachers' experiences were with specific tools like ChatGPT, Duolingo, and Grammarly, and what empirical studies' insights emerged.

a) Successful AI applications in English Language Teaching

In a recently conducted study by Ma and Chen (2024) in China, researchers explored the effects of "AI-empowered applications" (inclusive of ChatGPT, Duolingo, etc.) on foreign English learners' engagement and academic procrastination. According to the findings, the experimental group that had access to these resources showed notably higher levels of cognitive, affective, and behavioral engagement when compared with a control group (Table 2). Alongside this, reduced procrastination was also observed in this group (Table 3). To put it briefly, the researchers noted that the use of AI could be a viable way to activate students' motivation and engagement in school settings.

Table 2: Descriptive statistics of the groups' scores on engagement

Variable	Group	Mean	SD	N
Pretest				
Affective Engagement	Control	3.40	0.70	175
	Experimental	3.42	0.72	175
Cognitive Engagement	Control	3.45	0.68	175
	Experimental	3.46	0.70	175
Behavioural Engagement	Control	3.48	0.66	175
	Experimental	3.50	0.68	175
Post-test				
Affective Engagement	Control	3.45	0.65	175
	Experimental	4.23	1.00	175
Cognitive Engagement	Control	3.46	0.56	175
	Experimental	4.33	0.42	175
Behavioural Engagement	Control	3.50	0.49	175
	Experimental	4.40	0.80	175
Engagement (Total)	Control	10.40	1.80	175
	Experimental	12.93	2.23	175

Source: Ma and Chen (2024)

Table 3: Descriptive statistics of the groups' scores on aspects of procrastination.

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Variable	Group	Mean	SD	N
Pretest				
Writing term assignments	Control	24.30	4.5	175
	Experimental	24.25	4.6	175
Keeping up with weekly assignments	Control	25.50	5.3	175
	Experimental	25.60	5.2	175
Doing administrative tasks	Control	27.30	5.35	175
	Experimental	27.20	5.4	175
Attending meetings and classes	Control	23.50	2.91	175
	Experimental	23.60	2.8	175
Performing academic tasks	Control	19.30	4.11	175
	Experimental	19.20	4.0	175
Studying for examinations	Control	17.14	3.96	175
	Experimental	17.20	4.0	175
Procrastination Total	Control	22.23	4.20	175
	Experimental	22.30	4.1	175
Post-test				
Writing term assignments	Control	24.30	4.5	175
	Experimental	19.25	4.6	175
Keeping up with weekly assignments	Control	25.50	5.3	175
	Experimental	16.50	4.32	175
Doing administrative tasks	Control	27.30	5.35	175
	Experimental	17.60	4.42	175
Attending meetings and classes	Control	23.50	2.91	175
	Experimental	14.26	3.35	175
Performing academic tasks	Control	19.30	4.11	175
	Experimental	15.30	5.23	175
Studying for examinations	Control	17.14	3.96	175
	Experimental	12.52	4.58	175
Procrastination Total	Control	22.23	4.20	175
	Experimental	14.60	4.89	175

Source: Ma and Chen (2024)

In another study conducted in a different context, researchers examined the use of generative AI tools by students in a study of English majors in Indonesia. It was found out that students most frequently use tools such as ChatGPT, Grammarly, Google Translate, Duolingo and QuillBot. For example, a language learning app like Duolingo with a generative AI-based feature was identified as a source of learners' confidence in the actual use of the language (e.g., speaking, grammar understanding, and error recognition). This indicates that AI-assisted apps can play a role in both skill development and confidence building among learners (Zaim *et al.*, 2025). Another case study of Indonesian pre-service EFL teachers during their teaching practicum over six weeks found that tools, such as ChatGPT, Copilot, Twee, and Quizizz AI, helped substantially with lesson planning, content creation, and assessment tasks.

b) Teachers' Experiences with AI Tools Like ChatGPT, Duolingo, Grammarly, etc.

A systematic review of different research studies in ESL/EFL contexts disclosed that the perception of the teachers towards ChatGPT and similar LLM-based tools was positive in the sense that the latter could be efficient in coming up with the writing prompts, assessing the

drafts, delivering the feedback, and being the speaking tasks' facilitator. These tools were generally introduced by educators as a supplement (not a replacement) to their instruction. In the areas where the teachers could be most concerned, there were issues related to the accuracy of the feedback, the relevance of the feedback in the higher-order writing or speaking skills, and the issue of student dependence on AI (Lo *et al.*, 2024).

The results of the multi-methods study reveal that learners consider the versatility of ChatGPT as extremely valuable and use it for reading, writing, vocabulary, and grammar practice. The teachers and other stakeholders point out that factors such as perceived usefulness, enjoyment, human-likeness, and trust play a role in uptake. As far as teachers are concerned, incorporating ChatGPT into their practice equates to reformulating the prompts, checking the output for correctness, and going through the students' work to ensure that the tasks help achieve the curricular goals (Tram *et al.*, 2024). Regarding Duolingo, a study published in *Frontiers in Education* (2025) examined the effect of Duolingo's generative AI features over one month on learners' self-efficacy. Learners granted access to features designed for real-world conversation preparation and on-demand explanations experienced significant increases in their confidence in speaking, understanding grammar, and applying what they learned outside the app. Teachers observing such interventions noted the potential for these tools to reinforce classroom instruction (Kittredge *et al.*, 2025).

c) Insights from Empirical Studies

The mixed-methods investigation gives insight into how AI-generated feedback (from tools like ChatGPT) actually functions in higher education translation classes. Students engaged with AI feedback during revision showed high cognitive involvement, albeit with varied affective responses (some pleased, some skeptical). Behaviorally, students used the feedback in different ways: some making major changes, others more superficial ones, highlighting that quality of feedback, clarity, and students' ability to reflect are key moderators of impact (Xu *et al.*, 2024). Another important empirical finding comes from the study of Indonesian English majors conducted by Zaim *et al.* (2025). Among 277 students surveyed, ~86% reported using ChatGPT, ~69% used Grammarly, ~80% used Google Translate, and ~46% used Duolingo for language practice (Figure 2).

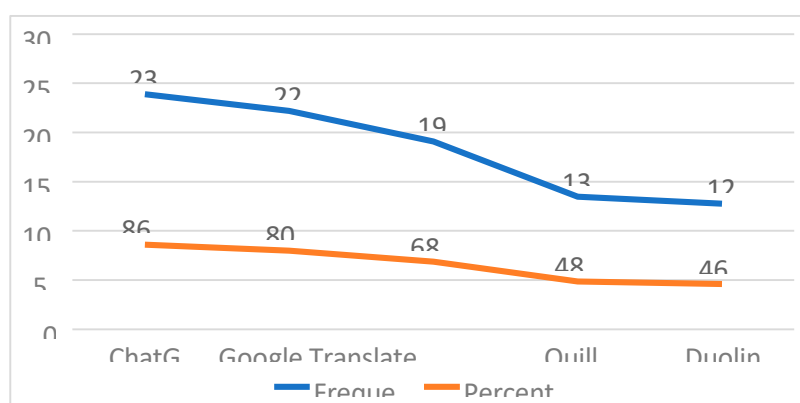


Figure 2: Top five AI applications used (Zaim *et al.*, 2025).

This shows not only tool popularity but also differential usage patterns depending on features (writing, translation, grammar, vocabulary). It suggests that while many students adopt AI tools, the depth of use, reliability, and pedagogical alignment matter for outcomes. Also, the Duolingo self-efficacy study shows that exposure to generative AI features in a structured

learning app can improve learners' belief in their language abilities, and that many learners report transferring what they learn in the app to real-world contexts. For teachers, this offers a promising example of how integrating AI with classroom work and external practice can produce observable affective and behavioral change (Kittredge *et al.*, 2025).

Implications of AI for Teacher Training and Professional Development

The successful integration of AI tools into ELT hinges not simply on having access to technology, but on cultivating teacher readiness, competence, and critical perspective. The following subsections highlight three essential domains of implication: integrating AI literacy into teacher education programs; continuous professional development for an AI-driven pedagogy; and the development of critical digital literacy to evaluate and integrate AI tools effectively.

Integrating AI Literacy into Teacher Education Programs: Teacher preparation programs (pre-service) must embed AI literacy as a foundational component, not as an optional module. A recent critical perspective argues that AI literacy should go beyond basic use to include understanding of underlying AI mechanisms, ethical implications, potential biases, and limitations, so that teachers entering the classroom are equipped to guide students responsibly and recognize when AI might mislead or oversimplify content (Knoth, 2026). In a developing country like Ghana, for instance, the use of Generative AI technology in the field of education has been identified as having the capacity to accomplish content knowledge acquisition by pre-service teachers (PSTs) in a more efficient way. As a result, the time of teacher training programs will be freed up for pedagogical modelling, authentic assessments, and fostering critical thinking. Nevertheless, the mentioned research also points out that the presence of AI literacy may be shallow if there is no support such as clear guidance on prompt design, ethical use, and judging the correctness of the AI-generated content (Nyaaba, 2024).

Continuous Professional Development for Adapting to AI-Driven Pedagogy: The rapidly changing nature of AI tools dictates that teacher training should not be just up to the level of pre-service education but must be continually followed by professional development (PD). A study reported that teachers benefit when PD is embedded into their practice, when they use generative AI tools to address immediate classroom challenges, reflect on outcomes, share with peers, and iterate. But for such PD to be effective, it must be structured, supportive, and attentive to equity, ensuring teachers are not left behind due to an initial lack of skill or resource access (Popova *et al.*, 2022; Li *et al.*, 2025). Another study emphasizes that professional learning experiences must include ethical discussion, case studies, and design research so that teachers feel agency, not simply as consumers of AI tools but as being able to shape how those tools are used in their classrooms (Mouta *et al.*, 2025).

Developing Critical Digital Literacy to Evaluate and Integrate AI Tools: Even with literacy and PD, teachers need critical digital literacy, that is, the capacity to evaluate AI tools' outputs, to discern when AI suggestions are appropriate or not, to detect bias or inaccuracy, to align tool use with learning objectives, and to ensure ethical and equitable use. One recent instrument, *the Artificial Intelligence Literacy (AIL) Scale for Teachers*, provides a way to assess teachers' competence in areas such as understanding AI, detecting AI-driven output, ethics, trust, and application. It reveals gaps: while many teachers are confident with basic tasks (using AI-assisted tools), fewer are comfortable critically evaluating generated content or recognizing algorithmic limitations (Chiu *et al.*, 2025). Additionally, the qualitative multiple-case study revealed that teachers who engage in critical reflection (through journals, focus group discussions) identify limitations of AI tools, such as oversimplification, content inaccuracy, and lack of contextual sensitivity; such reflection helps them adapt prompts and outputs to local classroom realities rather than adopting AI outputs wholesale (Hathcock, 2020).

Research Gaps and Future Research Directions

While the advent of AI in ELT has captured a growing body of scholarly interest, there are significant gaps in the research on teachers' experience, ELT practice, and the sustainability and equity of AI-based instruction. The gaps need to be filled to move from short-term evidence of AI efficacy to context-specific approaches for implementation supported by evidence.

Limited longitudinal dimension: Many of the studies currently available report findings of AI interventions in the short term, making it challenging to know if the positive gains in teaching effectiveness, engagement, and language outcomes will persist. To investigate the sustainability of the benefits of AI-supported ELT, as well as changes in teachers' practices, confidence, and dependence on AI, it is important to carry out longitudinal studies. Repeated measures over semesters or academic years and consideration of possible novelty effects and changes in teacher behaviour (Kasneci et al., 2023; Tlili et al., 2023).

Teacher-focused evidence: The literature has focused more on evidence of students' achievement, engagement and perceptions, and comparatively less on that of teachers as the primary actors of the pedagogical implementation. There is a need for further studies regarding the use of AI tools in teachers' lesson planning process, interaction, feedback, assessment, and professional development. It is especially important to focus on teachers' perceived benefits and constraints, professional autonomy, workload, pedagogical beliefs, and AI acceptance by teachers. This teacher-centred evidence is significant because even if technology is available, this does not necessarily mean that it is pedagogically integrated in a meaningful way (UNESCO, 2023).

Limited evidence from low-resource contexts: Evidence for AI-supported ELT is not evenly distributed across the globe, and is subject to considerable uncertainty about its implementation in contexts where there is limited internet access, poor digital infrastructure, unreliable electricity, limited institutional funding and professional development opportunities. The student's context of use, which includes the resources and settings in which AI tools have been developed and assessed, is especially important when considering low-resource contexts, where these conditions can vary significantly from those found in high-resource contexts. Contextual barriers, context-specific AI applications, cost implications, offline or low-bandwidth options, and teachers' adaptive strategies need to be explored in future research and development. Studies conducted in Africa or other underrepresented areas would provide insights into whether the results of studies in technologically advanced environments could be extrapolated to other educational environments (UNESCO, 2023).

Limited evidence across language skills: The research on these skills seems to be more focused on writing, grammar, and speaking, which are relatively easy for generative AI to access. AI-assisted reading comprehension, listening, pronunciation, word learning, pragmatic skills, translation, and integrated language-skills training should be explored in the future. Future research needs to explore the potential of AI tools to facilitate balanced development in receptive and productive skills as well as the possibility of creating an imbalance. Comparative studies on the pedagogical value of the various AI applications in each language skill would help to get a more complete picture of their value in education (Crompton & Burke, 2023).

Assessment validity and fairness. AI can support automated feedback, question creation, formative assessment, and personalised assessment, but there are concerns about validity, reliability, bias, transparency, and handling of different English varieties. Empirical research is needed to determine if evaluations created by AI yield similar and defensible judgments for the learners who use different forms of English, such as World Englishes and English as a second or other language. The impact of AI systems on language or cultural biases that may be present in the data they have been trained on should also be explored. Human oversight and suitable validation processes will have to be put in place before adopting AI-assisted assessment for high-stakes decision-making (Baker & Hawn, 2022; UNESCO, 2023).

Teacher AI literacy: How effectively teachers can learn to use AI tools is largely dependent on their ability to be aware of their own limitations and critically assess their own products. While the importance of AI literacy is rising, evidence of how the PD impacts

teachers' capacity to question AI-generated content is still scant. Future research should assess various models of AI PD and determine teachers' knowledge acquisition, prompt skills, output verification, bias identification, ethical considerations, and pedagogical decision-making. AI literacy should not be treated as mere technical skills but as a mixture of technological, pedagogical, critical, and ethical skills (Long & Magerko, 2020; Ng et al., 2021).

Institutional implementation: There is also a need for more evidence on the institutional level. While individual teachers might be open to using AI, adopting it on a wider scale requires institutional policies, scheduling, procurement policies, data management, technical assistance, and budget considerations. Future research should explore the real-world implications of using AI for education, such as the cost of AI subscriptions, infrastructure needs, training expenses, the time needed to prepare and quality-check AI-generated educational content, and administrative burden. Special attention should be given to data privacy, data ownership, data security, and data usage issues related to student and teacher data. Implementation research and institutional case studies might serve as practical evidence to create responsible AI policies in the context of schools, colleges, and universities (UNESCO, 2023).

Comparative research: Lastly, to identify the conditions and contexts under which the meaningful gains or other results of AI-assisted ELT are different from those of traditional teaching, more rigorous comparative research needs to be conducted. To compare the outcomes of AI-supported pedagogies and conventional pedagogies, as well as different types of AI tools, and the outcomes of students with various levels of proficiency, future studies could be conducted. Comparisons would also help to provide clarity on the contextual factors that affect effectiveness across various educational settings (face-to-face, blended, and online). The studies should adopt suitable control/comparison groups, adequate sample sizes, reliable outcome measures, and, if possible, there should be a mixed-methods approach that incorporates learning outcomes and teacher/learner experiences. This would allow for the identification of the pedagogical effect from novelty, self-selection, or tool-specific effects (Crompton & Burke, 2023; Tlili et al., 2023).

Conclusion

The field of English Language Teaching (ELT) is witnessing the rapid emergence of AI applications in various domains such as writing assistance, conversational practice, automated assessment, adaptive learning, instructional planning, and teacher preparation. The articles reviewed suggest that AI has the potential to improve the quality and timeliness of feedback, facilitate personalised learning, boost learner engagement, and increase teacher effectiveness. These advantages, however, are not given automatically and are not necessarily equal, but are very sensitive to pedagogical context, learner characteristics, pedagogical competence, and institutional context. The effective implementation of these tools depends on teacher AI literacy, a reliable technological infrastructure, valid and transparent assessment practices, safeguarding of learner data, and understanding of algorithmic bias and ethical issues. The research findings indicate that the pedagogical usefulness of AI is not necessarily tied to the tools, but rather to their intentional use within ELT. There is a need, therefore, to keep teachers at the heart of the decision-making process in language teaching, and to set up proper policies, training, assessment systems, and governing bodies within institutions so that AI can support, but not supplant, successful language education.

Conflict of interest

The authors declare no conflict of interest.

Authors' Declaration

The authors hereby declare that the work presented in this article is original and that any liability for claims relating to the content of this article will be borne by them.

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