

DEVELOPING EFL TEACHERS' AI LITERACY FOR EFFECTIVE GENERATIVE AI INTEGRATION IN ENGLISH LANGUAGE TEACHING

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ABSTRACT

The rapid diffusion of generative artificial intelligence (GenAI) into everyday teaching practice has outpaced the professional preparation of language teachers. This article examines what AI literacy means for teachers of English as a foreign language (EFL) and how it can be developed systematically rather than incidentally. Through a comparative analysis of five influential competency frameworks and a synthesis of empirical studies published between 2023 and 2026, the article argues that generic AI literacy is insufficient for language teaching, because the object of instruction — language itself — is also the medium in which generative models operate. A four-domain model of EFL teachers' GenAI literacy is proposed, comprising technical-functional, pedagogical-methodological, critical-evaluative and ethical-professional competence, and each domain is specified through observable indicators. The article further sets out a three-stage professional development pathway aligned with the progression levels of the UNESCO AI competency framework for teachers, and maps the principal risks of unprepared adoption onto concrete pedagogical safeguards. The conclusions are analytical rather than statistical and are intended to inform teacher-education curricula and in-service training programmes.

Key words: AI literacy, generative artificial intelligence, EFL teachers, English language teaching, teacher professional development, TPACK, UNESCO competency framework, prompt engineering, critical evaluation, assessment literacy.

INTRODUCTION

Since late 2022, generative artificial intelligence has moved from a specialist research topic to an ordinary feature of the language classroom. Large language models now draft lesson plans, produce graded reading texts, generate examination items, comment on student writing and act as conversational partners. In language education this shift is more consequential than in most other subjects, because the tools operate in precisely the medium that is being taught. A chemistry teacher who uses a chatbot to prepare a worksheet employs language as a means; an English

teacher who does the same employs it as both means and object of instruction [10; 13].

The speed of diffusion has created a preparation gap. Studies of university language instructors have shown that familiarity with GenAI tools is uneven, that confidence in using them pedagogically lags well behind awareness of their existence, and that institutional guidance is frequently absent at the moment when teachers most need it [11]. Research with teacher educators points in the same direction: those responsible for preparing the next generation of language teachers report that they themselves are improvising, and that curricula have not yet been revised to accommodate the technology [12]. A recent study of pre-service EFL teachers found that two thirds acknowledged a limited understanding of AI concepts and about sixty per cent felt unable to apply AI tools confidently in teaching, attributing this to the absence of formal training in their programmes [19].

At the level of policy the direction is clearer. In 2023 UNESCO issued the first global guidance on generative AI in education, and in 2024 it published an AI competency framework for teachers defining 15 competencies across five dimensions and three progression levels [1; 2]. In Uzbekistan, the Strategy for the Development of Artificial Intelligence Technologies until 2030, approved by Presidential Resolution No. PQ-358 of 14 October 2024, sets out tasks for training personnel and expanding AI-based services, which makes the question of teachers' readiness a matter of national educational policy rather than individual initiative [22].

The problem addressed in this article is therefore not whether GenAI should enter English language teaching — it already has — but what specific competence enables a teacher to use it in a way that supports rather than substitutes for language learning. The aim of the article is to define the construct of AI literacy for EFL teachers, to distinguish it from general digital and AI literacy, and to propose a structured pathway for its development. The objectives are: to compare the existing competency frameworks; to identify the domain-specific requirements that language teaching imposes; to formulate a model of EFL teachers' GenAI literacy with observable indicators; and to outline a staged programme of professional development together with its principal risks and safeguards.

RESEARCH METHODOLOGY

The study is theoretical and analytical in character. It combines comparative document analysis with the synthesis of recent empirical research. Two groups of sources were examined. The first comprised competency frameworks: the AI literacy competencies of D. Long and B. Magerko [3], the exploratory review of AI literacy by D. Ng and colleagues [4], the teachers' AI digital competency framework derived

from DigCompEdu [5; 6], the Intelligent-TPACK model of I. Celik [9] developed from the classical TPACK framework of P. Mishra and M. Koehler [7; 8], and the UNESCO AI competency framework for teachers [1]. The second group comprised empirical and conceptual studies of GenAI in language education published between 2023 and 2026 [10–21].

The analysis proceeded in three steps. First, the frameworks were compared along three parameters: the population addressed, the constitutive components and the progression logic. Second, the components were tested against the specific conditions of English language teaching in order to establish which of them require domain-specific reformulation. Third, the resulting domains were operationalised through indicators that can be observed in a lesson plan, a classroom or a set of teaching materials, and were arranged into a developmental sequence. The limitation of the approach is that the proposed model has not yet been validated on a teacher sample; the conclusions should accordingly be read as an analytical framework offered for empirical testing rather than as verified measurement.

RESULTS AND THEIR ANALYSIS

1. What existing frameworks offer and where they stop. The concept of AI literacy was given its first systematic definition by D. Long and B. Magerko, who described it as a set of competencies enabling a person to evaluate AI technologies critically, communicate and collaborate with them effectively, and use them as tools in everyday settings [3]. Subsequent work in education added a progression logic — from knowing and understanding, through using and applying, to evaluating and creating, with ethics running through all levels [4]. The decisive step for the teaching profession was taken when these ideas were mapped onto an existing model of educators' digital competence: D. Ng and colleagues adapted DigCompEdu into six areas of teachers' AI digital competency and added a component absent from learner-facing models — the teacher's responsibility for facilitating learners' own AI competency [5; 6]. In parallel, I. Celik reformulated TPACK as Intelligent-TPACK, adding an explicit ethical layer to technological, pedagogical and content knowledge [9], while P. Mishra and co-authors argued that generative technologies destabilise the boundaries of the original TPACK model because they intervene in content itself [8]. The principal frameworks are summarised in Table 1.

Table 1

Key competency frameworks informing EFL teachers' AI literacy

Framework (source)	Population addressed	Core components	Contribution to the present model
AI literacy competencies [3]	general public, learners	what AI is; what it can do; how it works; how it should be used ethically	establishes the conceptual baseline of what a model can and cannot do
AI literacy in education [4]	school and university learners	know and understand — use and apply — evaluate and create; ethics across all levels	supplies a progression logic transferable to teacher training
Teachers' AI digital competencies [5; 6]	educators	professional engagement; digital resources; teaching and learning; assessment; empowering learners; facilitating learners' AI competency	introduces the teacher's duty to build learners' AI competency
Intelligent-TPACK [7; 8; 9]	subject teachers	technological, pedagogical and content knowledge extended by an ethical component	links AI tools to subject-specific pedagogy
UNESCO framework for teachers [1]	national teacher-training systems	human-centred mindset; ethics of AI; AI foundations and applications; AI pedagogy; AI for professional learning (15 competencies, 3 levels)	provides the normative reference and the acquire—deepen—create progression

Source: compiled by the author on the basis of [1]; [3]–[9].

What these frameworks share is a subject-neutral formulation. They describe the teacher as a professional user of an intelligent tool, but they do not address the situation in which the tool's output is itself the learning content. This is exactly the situation of the language classroom, and it is the reason why a domain-specific reformulation is required.

2. Why language teaching requires a domain-specific reformulation. In most subjects a factual error in an AI-generated text is visible to the teacher and can be corrected without disturbing the lesson. In language teaching the errors that matter are frequently not factual but distributional: an unusual collocation, a register that is too formal for the communicative situation, a syntactic pattern that is grammatical but statistically improbable in the target variety. Such output is fluent and therefore persuasive, and a teacher who lacks the relevant analytical awareness will pass it to learners as a model. Research on AI-generated text for second-language writers has shown that these tools simultaneously expand access to fluent English and flatten the

individual voice of the writer, producing texts that are correct but interchangeable [14]. R. Godwin-Jones frames the same tension in terms of distributed agency: when part of the composing process is delegated to a model, the pedagogical question becomes which part of the process must remain with the learner [15].

A second reason is assessment. Generative tools can produce a plausible essay, a translation or a spoken-language script within seconds, which undermines any assessment design whose evidence is a finished product. An analysis of the guidelines issued by the world's top-ranking universities showed that institutions responded to this by shifting emphasis towards process, transparency of use and academic integrity rather than by prohibition [18]. For the language teacher this translates into a practical requirement: the ability to redesign tasks so that the observable evidence of learning is the learner's processing of the material, not the material itself. The affordances of GenAI across the main areas of language teaching, together with the competence each requires, are set out in Table 2.

Table 2

**GenAI affordances in English language teaching and the teacher
competence they presuppose**

Area of teaching	Typical use of GenAI	Risk if used without AI literacy	Competence presupposed
Materials design	graded texts, dialogues, exam-type items	uncontrolled difficulty level; invented content; cultural bias	ability to specify level and genre in the prompt and to check output against syllabus descriptors
Reading and vocabulary	simplification, glossaries, example sentences	loss of authenticity; improbable collocations	corpus and level awareness; verification against reference sources
Writing	feedback on drafts, model texts, rubric-based comments	outsourcing of composing; homogenised learner voice [14]	process-oriented task design; feedback literacy
Speaking	conversation practice, role-play partners, pronunciation prompts	absence of genuine interactional pressure; over-standardised input	ability to combine AI practice with authentic interaction
Assessment	item generation, rubric drafting, preliminary marking	threats to validity and fairness; data-protection issues [18]	assessment literacy; knowledge of institutional policy
The teacher's own work	lesson planning, summarising research, translation	uncritical acceptance of output; gradual deskilling [12]	critical evaluation and systematic source verification

Source: compiled by the author on the basis of [10]; [12]–[15]; [18].

3. A four-domain model of EFL teachers' GenAI literacy. On the basis of the comparison above, four interdependent domains can be distinguished. The technical-functional domain concerns understanding what a generative model is: that it predicts probable continuations rather than retrieving verified facts, that its output depends on the prompt and the context window, and that fluent formulation is not evidence of accuracy [3; 16]. The pedagogical-methodological domain concerns integration: selecting a tool because a specific learning outcome requires it, and designing tasks in which the learner must process rather than merely receive the output [8; 9]. The critical-evaluative domain is the specifically linguistic one: judging generated language for accuracy, level, register, cultural appropriateness and bias. The ethical-professional domain concerns transparency, the protection of learner data and the teacher's responsibility to develop the learners' own AI competency [1; 5]. The model is presented in Table 3.

Table 3

Proposed four-domain model of EFL teachers' generative AI literacy

Domain	Descriptor	Observable indicators
Technical-functional	understanding how a generative model works and how prompt, context and output relate	writes structured prompts specifying role, level, genre and length; recognises hallucination; knows the limits of the context window
Pedagogical-methodological	integrating GenAI into language teaching methodology rather than adding it on top	matches the tool to a stated learning outcome; designs tasks requiring learner processing of AI output; identifies stages that must remain human
Critical-evaluative	evaluating generated language for accuracy, level, register and cultural fit	checks collocations against a corpus or dictionary; detects register mismatch and cultural bias; adapts rather than adopts the output
Ethical-professional	using GenAI transparently and responsibly and developing learners' AI competency	declares AI use in materials; anonymises learner texts; establishes classroom rules; teaches attribution and verification

Source: developed by the author on the basis of [1]; [3]–[5]; [8]; [9]; [14].

The four domains are not of equal difficulty to develop. Evidence from intervention studies suggests that the technical dimension improves quickly and almost automatically through exposure, whereas critical and pedagogical judgement requires deliberate instruction. In a quasi-experimental study with 64 Chinese college EFL teachers, an eight-week programme that embedded AI literacy in genre-based pedagogy produced large effects on critical appraisal and practical application but only a modest effect on technical understanding, and the qualitative data recorded a

movement from tool-oriented use towards pedagogically reasoned use [21]. A twelve-week intervention with 90 pre-service English teachers reported significant gains across technical proficiency, critical evaluation, creative application and ethical competence in the experimental group, and its authors concluded that explicit GenAI literacy instruction must be built into teacher education rather than left to self-directed discovery [20]. Taken together, these findings support a staged rather than a single-workshop approach.

4. A staged professional development pathway. The progression logic of the UNESCO framework — acquire, deepen, create — provides a convenient scaffold, since it is already used as a normative reference for national teacher-training programmes [1]. Table 4 translates it into concrete activities and attainment evidence for the EFL context. The essential principle is that each stage ends with a product that can be inspected: professional development in this area fails when it stops at demonstration and never requires the teacher to produce something that can be evaluated.

Table 4

Three-stage professional development pathway for EFL teachers' GenAI literacy

Stage (UNESCO level)	Focus	Sample activities	Evidence of attainment
Stage 1 — Acquire	familiarisation and safe use	guided exploration of one tool; basics of prompting; rules on personal data	an AI-generated text corrected and annotated by the teacher
Stage 2 — Deepen	pedagogical integration	redesign of an existing lesson with a justified GenAI component; peer observation; task reformulation for assessment integrity	a lesson plan distinguishing AI-supported from human-required stages
Stage 3 — Create	innovation and dissemination	drafting an institutional protocol on GenAI use; mentoring colleagues; small-scale classroom research	an in-house guideline and a report on a classroom trial

Source: developed by the author on the basis of [1]; [2]; [20]; [21].

5. Risks and safeguards. Four risks recur across the literature. The first is uncritical acceptance of fluent but inaccurate output, which is countered by making verification an explicit routine rather than an occasional precaution [16]. The second is the erosion of learner productive effort, countered by process-oriented assessment in which drafts, decisions and revisions form part of the evidence [18]. The third is the privacy of learner data, countered by anonymisation and by clear institutional

rules on what may be entered into a commercial system [2]. The fourth is inequality of access, which in many regions determines whether GenAI widens or narrows existing gaps and which requires offline alternatives to be planned rather than improvised [17]. None of these safeguards is technological; each of them is an instance of professional judgement, which is precisely why AI literacy cannot be reduced to tool training.

DISCUSSION

Three implications follow from the analysis. First, AI literacy for language teachers is not a subset of digital literacy but a distinct professional competence, because in this subject the tool produces the content that is being taught. A teacher may be entirely competent with learning platforms, presentation software and testing systems and still be unable to judge whether a generated dialogue is appropriate for B1 learners. This is why frameworks that describe the teacher as a generic user of intelligent tools, however carefully constructed, need a subject-specific extension [5; 9].

Second, the sequence in which competence develops matters. The evidence reviewed indicates that technical facility grows fastest and critical judgement slowest [20; 21]. A training programme that begins and ends with tool demonstrations therefore produces teachers who can operate the technology confidently while remaining unable to evaluate its output — arguably a more dangerous position than not using it at all, since confidence without evaluation transfers unchecked material directly to learners.

Third, institutional conditions determine whether individual competence becomes classroom practice. Where no policy exists on permitted use, data protection or acknowledgement, teachers act on private judgement and practice becomes inconsistent across a single institution [11; 12]. The third stage of the pathway proposed above therefore treats the drafting of local guidelines not as an administrative task but as the final learning outcome of professional development.

The limitations of the study should be stated plainly. The model presented here is derived from documentary and literature analysis and has not been validated with a teacher sample; its indicators have not been tested for reliability; and the empirical studies synthesised were conducted predominantly in East Asian higher education, which limits direct generalisation to school-level teaching in Central Asia. Validation through survey instruments and classroom observation, particularly in the Uzbek context, is the necessary next step.

CONCLUSIONS

1. AI literacy for EFL teachers is a domain-specific professional competence rather than an application of general digital literacy, because generative models operate in the same medium — language — that constitutes the content of instruction.

2. Existing frameworks provide the necessary conceptual base but stop at subject-neutral formulations; the four-domain model proposed here — technical-functional, pedagogical-methodological, critical-evaluative and ethical-professional — supplies the missing linguistic and pedagogical specification together with observable indicators.

3. The domains develop at different speeds: technical facility is acquired rapidly through exposure, whereas critical and pedagogical judgement requires explicit, sustained instruction, as intervention studies with in-service and pre-service language teachers indicate.

4. Professional development should therefore follow the acquire–deepen–create progression, and each stage should conclude with an inspectable product: an annotated AI-generated text, a redesigned lesson plan and an institutional protocol accompanied by a classroom trial report.

5. The principal risks of unprepared adoption — uncritical acceptance of output, erosion of learner effort, breaches of data privacy and inequality of access — are addressed not by technical means but by professional judgement, which confirms that teacher preparation, rather than tool availability, is the decisive factor in the effective integration of generative AI into English language teaching.

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