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# METHODOLOGICAL FOUNDATIONS FOR PREPARING PRE-SERVICE ENGLISH TEACHERS TO USE ARTIFICIAL INTELLIGENCE FOR PEDAGOGICAL PURPOSES

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**Abstract.** This article examines the methodological foundations for preparing pre-service English teachers to use artificial intelligence (AI) for pedagogical purposes. The study focuses on the transition from merely operating digital generative tools to making pedagogically justified decisions about when, why, and how AI should be used in English language teaching. A theoretical-methodological research design was employed. Recent scholarship on generative AI in language teacher education, teacher AI competency frameworks, and studies of pre-service EFL teachers was analyzed through comparative analysis, synthesis, systematization, and pedagogical modelling. The analysis indicates that effective preparation should integrate technological understanding with pedagogical goal-setting, pedagogically informed prompting, critical evaluation of generated content, adaptation to learners' age and proficiency, ethical responsibility, classroom implementation, and reflective improvement. On this basis, a seven-stage methodological sequence is proposed: defining the pedagogical objective; formulating a pedagogically informed AI task; generating instructional content; conducting pedagogical evaluation; adapting the output; implementing it in instruction; and reflecting on outcomes for subsequent improvement. The proposed sequence treats AI as a support for teacher judgement rather than as an autonomous decision-maker. The article argues that AI-related preparation should be embedded in English teacher education as a pedagogical competence rather than taught only as a technical skill. The model provides a conceptual basis for subsequent empirical validation and for developing criteria and indicators to assess pre-service English teachers' readiness for pedagogical AI use.

**Keywords:** artificial intelligence, English language teaching, pre-service English teachers, teacher education, methodological preparation, generative AI, AI pedagogy, pedagogical evaluation.

## INTRODUCTION

Artificial intelligence has rapidly become part of the contemporary educational environment. Generative generative systems can produce and transform text, images, audio, and other forms of content, which makes them particularly relevant to language education. English teachers routinely design explanations, dialogues, vocabulary activities, grammar tasks, speaking prompts, reading materials, lesson plans, assessment items, and differentiated learning resources. AI can accelerate many of these processes; however, speed of production does not by itself guarantee pedagogical quality.

The central challenge is therefore not whether future teachers can access AI, but whether they can use it in ways that are methodologically sound, ethically responsible, and aligned with learning objectives. AI-generated material may be linguistically fluent while still being inappropriate for a particular proficiency level, age group, learning objective, cultural context, or instructional approach. It may also contain factual errors, biased assumptions, excessive complexity, or activities that appear attractive but have limited pedagogical value. Consequently, the teacher must remain responsible for evaluating and adapting generated output before it enters the classroom.

This issue is reflected in international policy and research. UNESCO's AI Competency Framework for Teachers conceptualizes teacher preparation for AI through five interrelated dimensions: a human-

centred mindset, ethics of AI, AI foundations and applications, AI pedagogy, and AI for professional learning. The framework emphasizes that teachers need not only operational knowledge but also the capacity to make responsible pedagogical decisions in AI-mediated environments (Miao & Cukurova, 2024).

Recent empirical research in language teacher education supports this position. Huang, Wu, and Wu (2025) investigated a 12-week intervention designed to develop pre-service language teachers' generative AI literacy. Their framework included technical proficiency, critical evaluation, communication proficiency, creative application, and ethical competence. The intervention produced significant improvements across these dimensions, indicating that AI literacy can be systematically developed through teacher education rather than left to informal individual experimentation.

Kerr and Kim (2025) examined pre-service EFL teachers' use of generative AI for lesson planning. Participants used AI for topic selection, material creation, lesson organization, and language checking, but challenges remained in output quality and the incorporation of effective pedagogical strategies. Their findings point to a need for targeted preparation in prompting, ethics, pedagogy, and collaborative practices. Likewise, Kılıçkaya and Kic-Drgas (2025) investigated the integration of generative AI into practicum-based lesson study, further demonstrating that meaningful AI use should be connected to authentic planning, teaching, observation, and reflection processes.

Despite the increasing number of studies on AI literacy and generative AI in teacher education, a practical methodological question remains important for English teacher preparation: what sequence of pedagogical actions should a pre-service teacher follow when using such tools to design or support instruction? A framework that simply lists AI skills may not sufficiently guide the actual movement from instructional objective to AI interaction, evaluation, adaptation, classroom use, and reflection.

Accordingly, the purpose of this article is to identify methodological foundations for preparing pre-service English teachers to use these tools for pedagogical purposes and to propose a structured sequence that connects AI use with pedagogical decision-making. The study addresses the following question: which methodological stages should organize the preparation of pre-service English teachers so that AI-generated resources are used critically, purposefully, and responsibly in English language teaching?

## MATERIALS AND METHODS

This study employed a theoretical-methodological design. No experimental participants or fabricated quantitative outcomes were used. The analytical corpus consisted of recent international research on generative AI in pre-service language teacher education and an international teacher AI competency framework. Priority was given to sources that directly addressed teacher preparation, English or language education, lesson planning, AI literacy, pedagogical integration, critical evaluation, and ethical competence.

The research procedure consisted of four interrelated methods. First, scientific and pedagogical literature analysis was used to identify recurring requirements for responsible AI use in teacher education. Second, comparative analysis was applied to determine areas of convergence between competency-oriented frameworks and practice-oriented studies of pre-service language teachers. Third, synthesis and systematization were used to group these requirements into pedagogically meaningful actions. Fourth, pedagogical modelling was employed to organize the actions into a sequential and cyclical structure suitable for English teacher preparation.

The unit of analysis was not a particular AI platform. This decision was intentional because specific systems and interfaces change rapidly. Instead, the study focused on the teacher's pedagogical decision-making process: defining an objective, communicating the task to AI, evaluating the generated resource,

adapting it to learners and context, implementing it, and reflecting on its educational value. Such a platform-independent approach is intended to make the proposed methodology more durable and transferable.

The methodological validity of the proposed sequence rests on triangulation across three types of evidence: an international competency framework, intervention research on GenAI literacy, and studies of authentic lesson-planning and practicum practices among pre-service language teachers. The model should nevertheless be regarded as a theoretically derived framework requiring subsequent empirical validation.

**RESULTS**

The analysis resulted in a seven-stage methodological sequence for preparing pre-service English teachers to use these tools for pedagogical purposes. The stages are interconnected and cyclical: the outcome of reflection informs the next instructional objective and the next interaction with these technologies.

Table 1. Seven-stage methodological sequence for pedagogical AI use in pre-service English teacher education.

The first stage is the definition of a pedagogical objective. AI use should not begin with the question "What can this tool generate?" but with "What should learners achieve?" A pre-service teacher should specify the target skill, expected learning outcome, learner characteristics, and the precise function AI will perform. For example, "create an exercise" is technologically oriented and underspecified. By contrast, "create five pair-work speaking tasks for A2 learners to practise the past simple in everyday contexts" contains a pedagogical purpose, proficiency level, activity structure, and language focus.

The second stage is the formulation of a pedagogically informed AI task. Prompting is treated here not merely as a technical skill but as a form of instructional specification. A practical formula can be expressed as: pedagogical objective + learner characteristics + proficiency level + topic/content + activity type + constraints + expected outcome. The quality of an AI prompt should therefore be judged by the clarity of its pedagogical parameters, not by complexity of wording.

The third stage is instructional content generation. Depending on the objective, AI may be used to draft dialogues, reading passages, vocabulary activities, grammar practice, speaking prompts, role-play situations, feedback examples, lesson-plan components, or assessment items. At this stage, the generated output remains a draft resource. The teacher does not delegate authorship of the instructional decision to the system.

The fourth stage, pedagogical evaluation, is central to the model. Pre-service teachers should systematically examine whether AI-generated material is factually and linguistically accurate, aligned with the learning objective, appropriate to learners' proficiency and age, sufficiently clear, communicatively meaningful, culturally and ethically acceptable, and free from unnecessary complexity or harmful bias. This stage operationalizes the critical-evaluation and ethical dimensions identified in current AI literacy research.

The fifth stage is adaptation. If the output does not fully meet the criteria, the teacher revises it directly or reformulates the AI task. Adaptation may include simplifying vocabulary, changing task length, replacing culturally unsuitable examples, adding scaffolding, increasing communicative interaction, modifying instructions, or differentiating the same resource for different proficiency levels. In this sense, generated output is treated as editable pedagogical material rather than a finished product.

The sixth stage is pedagogical implementation. The adapted resource is placed within an appropriate part of the lesson and used for a defined instructional function. The relevant question is not whether AI

was used, but whether its use contributed to the intended learning outcome. Classroom observation, learner performance, and teacher judgement therefore remain essential.

The seventh stage is reflection and improvement. After implementation, the teacher considers which elements worked, where learners experienced difficulty, whether the AI-generated resource improved or hindered interaction, and how the prompt or material should be revised in the future. Reflection turns AI use into an iterative professional-learning process rather than a one-time act of content generation.

These stages form a cycle: Pedagogical objective → pedagogically informed AI task → content generation → pedagogical evaluation → adaptation → classroom implementation → reflection → improved subsequent task. The cycle preserves teacher agency at every point and prevents AI from becoming the source of unexamined instructional decisions.

## DISCUSSION

The proposed sequence is consistent with current international research but contributes a more explicit action pathway for English teacher education. UNESCO's framework establishes the importance of human-centred values, ethics, AI knowledge, pedagogy, and professional learning. The present model translates these broad competency domains into a workflow that a pre-service English teacher can follow when planning and using an technology-supported resource.

The model also addresses the gap identified by Kerr and Kim (2025). Their participants used generative AI productively in lesson planning, yet output quality and limited integration of effective pedagogical strategies remained concerns. In the proposed sequence, these risks are addressed by separating generation from pedagogical evaluation and adaptation. The teacher is therefore required to justify the instructional value of the output before implementation.

Huang et al. (2025) demonstrate that GenAI literacy can be improved through a structured teacher-education intervention and that critical evaluation and ethical competence are measurable components of that literacy. This study supports these dimensions but argues that they should be embedded in a pedagogical cycle. Critical evaluation becomes most meaningful when it is attached to a concrete objective, a generated teaching resource, a specific learner group, and a subsequent decision to adapt, reject, or implement the resource.

The practicum-oriented findings of Kılıçkaya and Kic-Drgas (2025) further support the importance of iterative professional practice. A teacher's AI competence develops not only through learning about AI but through planning, trying, observing, revising, and discussing pedagogical decisions. This suggests that the proposed seven-stage sequence could be incorporated into methodology courses, microteaching, practicum assignments, and lesson-study activities.

On this basis, the methodological preparation of pre-service English teachers can be understood through three integrated levels. The technological level involves understanding the capabilities and limitations of generative systems. The pedagogical level involves connecting AI use to objectives, methods, learner characteristics, language level, and assessment. The reflective-ethical level involves critical evaluation, responsibility, privacy and fairness considerations, and preservation of teacher agency. Weakness in any one level can reduce the educational value of AI use.

The proposed approach deliberately avoids defining competence as mastery of one named AI application. Such an approach would quickly become outdated. Instead, it emphasizes transferable pedagogical reasoning that can be applied across changing digital generative tools. This is particularly relevant to teacher education, where graduates need durable professional judgement rather than short-term familiarity with a particular interface.

The study has limitations. The seven-stage sequence is derived from theoretical analysis and pedagogical modelling and has not yet been empirically tested within a specific pre-service English teacher cohort. Future research should operationalize the model through observable criteria and indicators, develop assessment instruments for readiness to use these tools pedagogically, and conduct a pedagogical experiment comparing pre- and post-intervention performance. Such research should also examine how the sequence functions across different learner ages, proficiency levels, and English-teaching contexts.

## CONCLUSION

The expansion of artificial intelligence in education requires a corresponding change in the preparation of future English teachers. Technical familiarity with these technologies is insufficient because educational quality depends on the teacher's ability to connect technology with pedagogical objectives, learner needs, language-learning principles, ethical responsibility, and reflective professional judgement.

This study proposes a seven-stage methodological sequence: defining the pedagogical objective; formulating a pedagogically informed AI task; generating instructional content; conducting pedagogical evaluation; adapting the output; implementing it in instruction; and reflecting on outcomes for further improvement. The sequence positions AI as a support for professional decision-making rather than a substitute for the teacher.

For English teacher education, the practical implication is that AI preparation should be integrated into methodology courses and teaching practice through authentic tasks. Pre-service teachers should be required not only to generate materials but also to explain why a resource is pedagogically appropriate, identify weaknesses in generated output, revise it for a specific learner group, implement it, and reflect on its effectiveness.

The framework proposed here provides a theoretical and methodological basis for subsequent empirical research within specialty 13.00.02. The next stage should involve the development of criteria, indicators, and levels for assessing pre-service English teachers' readiness for pedagogical AI use, followed by experimental validation of the methodology in teacher-education settings.

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