



DEVELOPING GENAI LITERACY IN ENGLISH ACADEMIC WRITING: A PEDAGOGICAL FRAMEWORK FOR UNIVERSITY EFL STUDENTS

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Abstract

The rapid integration of generative artificial intelligence (GenAI) into higher education is transforming the processes through which students plan, produce, revise, and evaluate academic texts. For learners of English as a foreign language (EFL), GenAI tools offer valuable opportunities for linguistic support, feedback, idea development, and revision. At the same time, unrestricted or uncritical use may lead students to outsource essential cognitive processes and create a gap between the quality of the text they produce and the writing competence they have actually developed. These developments highlight the need to move beyond technological competence toward a broader understanding of GenAI literacy in academic writing. This paper examines the emerging concept of GenAI literacy in EFL academic writing and proposes a preliminary pedagogical framework for its development among university students. Drawing on recent research on AI literacy, GenAI-assisted EFL writing, critical AI literacy, learner autonomy, and responsible technology use, the paper conceptualizes GenAI literacy as an interconnected set of competencies involving understanding, purposeful use, critical evaluation, ethical decision-making, and reflection. The proposed framework is organized around seven interconnected stages: understanding the writing task, independent planning, purposeful GenAI use, critical evaluation of AI output, informed decision-making, independent revision, and reflection. Rather than positioning GenAI as a replacement for student writing, the framework conceptualizes it as a potential learning scaffold while preserving students' cognitive engagement, agency, and



authorship. The paper argues that explicit pedagogical guidance is necessary to help EFL students develop productive and responsible relationships with GenAI in academic writing. The framework provides a conceptual basis for future empirical research and contextual adaptation within Uzbek higher education.

Keywords: generative artificial intelligence; GenAI literacy; academic writing; EFL; higher education; critical AI literacy; learner agency; Uzbekistan

1. Introduction

Generative artificial intelligence has rapidly become part of the contemporary higher-education environment. AI-based systems can generate extended texts, provide feedback, suggest vocabulary and grammatical alternatives, summarize information, translate texts, and assist learners during different stages of academic writing. For university students studying English as a foreign language, these capabilities may provide valuable linguistic and cognitive support.

However, the educational implications of GenAI extend beyond the question of whether these technologies improve the quality of students' written products. Academic writing is not only an activity through which students produce texts; it is also a process through which they develop argumentation, critical thinking, information evaluation, language awareness, and independent decision-making. Consequently, when students rely on GenAI to generate ideas, formulate arguments, construct paragraphs, and produce complete assignments, an important distinction emerges between **improved textual performance** and **actual development of writing competence**.

Recent research provides evidence for this tension. A 2026 mixed-methods study of 351 EFL students at Fergana State University found that AI assistance



was associated with substantial improvements in grammatical accuracy and lexical sophistication, while reductions were also observed in warranted argumentative claims and originality. The researchers identified tensions between AI as a scaffold and AI as a substitute and highlighted a potential performance–competence gap.

This tension is particularly significant in the context of academic writing. If students use GenAI primarily to obtain finished texts, the technology may reduce their engagement with the very cognitive processes that writing instruction aims to develop. Conversely, when students use AI to question their ideas, receive targeted feedback, examine alternative arguments, and critically evaluate generated content, the technology may function as a learning scaffold.

The central issue, therefore, is not simply whether students use GenAI, but **how they use it and whether they possess the knowledge and judgment required to use it productively.**

This has contributed to growing scholarly interest in the concept of GenAI literacy. Recent conceptual work in EFL writing identifies GenAI literacy as an emerging construct involving understanding, intention, application, evaluation, and ethics, with these dimensions operating as an interconnected rather than strictly linear process.

The present paper addresses this emerging area by examining GenAI literacy in relation to English academic writing and proposing a preliminary pedagogical framework for its development among university EFL students.

2. GenAI Literacy in EFL Academic Writing



GenAI literacy should not be equated with the ability to operate a particular AI tool. Knowing how to formulate a prompt or obtain a grammatically accurate response represents only one aspect of effective AI use.

Recent scholarship conceptualizes GenAI literacy as a multidimensional competence involving knowledge, skills, critical judgment, ethical awareness, and purposeful engagement with AI. Jiang (2026), specifically examining GenAI literacy in EFL writing, synthesizes five dimensions: **understanding, intention, application, evaluation, and ethics**. The study emphasizes that these dimensions are interconnected and iterative rather than separate stages.

Empirical research with EFL students similarly suggests that AI literacy involves more than familiarity with AI technologies. Hossain, Çelik, and Hınız (2025), in a study of 427 EFL students at two Turkish universities, found moderate levels of AI familiarity and use but also identified limitations in students' technical knowledge and understanding. Students reported substantial use of AI for translation and grammar proofreading, suggesting that familiarity with AI does not necessarily correspond to comprehensive AI literacy.

In the context of academic writing, therefore, a GenAI-literate student should be able to:

- understand the capabilities and limitations of GenAI;
- identify appropriate purposes for AI use during different stages of writing;
- formulate purposeful rather than indiscriminate prompts;
- critically evaluate AI-generated information and language;
- recognize inaccurate, unsupported, biased, or inappropriate AI output;
- verify information and references;



- decide when AI assistance should be accepted, modified, rejected, or independently verified;
- maintain ownership of ideas and arguments;
- understand ethical issues related to authorship, academic integrity, privacy, and responsible use;
- reflect on the role of AI in their own writing and learning.

Such a conceptualization shifts attention from **AI use** to **quality of AI-mediated learning**.

3. The Problem of AI Substitution in Academic Writing

One of the central pedagogical concerns surrounding GenAI is the possibility that students may substitute AI-generated performance for their own learning.

For example, a student may enter a prompt such as:

“Write a 700-word academic essay about the effects of climate change.”

The resulting text may demonstrate appropriate vocabulary, organization, grammar, and academic style. Nevertheless, the student's ability to formulate an argument, evaluate evidence, structure ideas, and construct an academic text independently remains uncertain.

This creates a potential **performance–competence gap**: students may demonstrate a stronger final product while developing the underlying competencies at a slower rate. Evidence from the Uzbek higher-education context makes this issue particularly relevant. The recent Fergana State





University study reported both improvements in linguistic dimensions and decreases in some indicators of argumentation and originality.

The alternative is to conceptualize AI as a scaffold.

For example, a student may first develop an argument independently and then ask GenAI to:

- identify possible weaknesses in the argument;
- propose counterarguments;
- identify unclear reasoning;
- suggest questions that a reader might raise;
- provide feedback on paragraph organization;
- identify language that may be ambiguous.

The student then evaluates the suggestions, verifies relevant information, decides which recommendations are appropriate, and revises the text.

The distinction can therefore be summarized as:

AI as substitution

Task → AI generates ideas → AI generates text → student submits

versus

AI as scaffold

Task → student thinks and plans → purposeful AI interaction → critical evaluation → student decision-making → independent revision → reflection

The pedagogical objective should therefore not necessarily be to eliminate AI from academic writing. Instead, it should be to help students move from





passive consumption of AI-generated text toward active, critical and responsible engagement with AI.

4. Emerging Pedagogical Approaches

The recent literature increasingly supports explicit pedagogical intervention rather than assuming that students will automatically develop appropriate AI-use practices.

Zhang, Wen, and Wu (2025), for example, investigated the use of structured and semi-structured reflection journals with 39 postgraduate students completing GenAI-assisted L2 writing tasks. Their framework included operational competence, ethics and security, critical evaluation and autonomy, and reflection. The study reported improvements across several dimensions of GenAI literacy and suggested that structured reflection encouraged deeper engagement with AI-related rules and evaluation of AI-generated content.

Similarly, Cao and Mao (2026) examined critical AI literacy among 16 Chinese EFL undergraduates in an academic writing course. Their analysis identified four interconnected areas: critical awareness of AI affordances and limitations, strategies for orchestrating AI-mediated writing, critical evaluation of AI output, and ethical negotiation to protect authorial integrity. Importantly, the researchers used students' drafts, AI interaction logs, reflective journals, and interviews rather than relying solely on self-reported perceptions.

Research has also begun to examine relationships between AI literacy and students' broader learning behavior. A 2025 study of university L2 learners found that awareness of AI and ethical considerations positively predicted self-directed learning, while AI usage itself showed a negative relationship with self-directed learning.





Taken together, these findings suggest that effective GenAI pedagogy should incorporate:

1. explicit instruction about AI capabilities and limitations;
2. purposeful rather than indiscriminate AI use;
3. critical evaluation of AI output;
4. ethical and authorship-related decision-making;
5. reflection and metacognitive awareness;
6. process-oriented writing activities.

However, existing studies differ considerably in their conceptualizations, populations, instructional designs, and assessment approaches. GenAI literacy in EFL writing remains an emerging field, and further context-sensitive pedagogical research is needed.

5. A Preliminary Pedagogical Framework

Based on the literature reviewed above, this paper proposes a preliminary framework for developing GenAI literacy in English academic writing.

Stage 1. Understanding the Writing Task

Students begin by identifying:

- the purpose of the assignment;
- the genre;
- the intended audience;
- assessment requirements;
- required evidence;
- expected academic conventions.





The purpose is to ensure that students understand the task before introducing AI assistance.

Stage 2. Independent Thinking and Planning

Students generate initial ideas, identify possible arguments, activate prior knowledge, and create a preliminary plan.

This stage is essential for maintaining student ownership and ensuring that AI does not become the starting point for every academic task.

Stage 3. Purposeful GenAI Use

Students identify a specific problem for which GenAI can provide useful assistance.

Possible applications include:

- receiving feedback on organization;
- generating possible counterarguments;
- identifying unclear expressions;
- comparing alternative structures;
- obtaining explanations of linguistic problems;
- questioning the strength of an argument.

The student should be able to explain **why** AI is being used.

Stage 4. Critical Evaluation

Students evaluate AI output according to criteria such as:

- accuracy;
- relevance;
- logical consistency;





- evidence;
- bias;
- linguistic appropriateness;
- academic conventions;
- reliability of references.

This stage is central to GenAI literacy because AI-generated content should not be treated as automatically correct.

Stage 5. Informed Decision-Making

Students decide whether a particular AI suggestion should be:

accepted → modified → rejected → verified

The decision remains the student's responsibility.

This stage reinforces the principle that AI may provide suggestions, but it should not replace academic judgment.

Stage 6. Independent Writing and Revision

Students integrate appropriate assistance into their own writing while retaining responsibility for the argument, evidence, organization, language, and final text.

The purpose is to use AI interaction to support writing development rather than to reproduce AI-generated prose.

Stage 7. Reflection

Students reflect on:

- what they used AI for;
- why they used it;





- which suggestions they accepted;
- which suggestions they rejected;
- how they verified information;
- how AI influenced their writing;
- what they learned independently;
- whether AI supported or replaced their thinking.

Reflection creates an opportunity for students to develop awareness of their own AI-use decisions.

Framework in Summary

**Understand → Think → Use purposefully → Evaluate → Decide →
Write/Revise → Reflect → Re-engage**

The cycle is intentionally iterative. Students may return to earlier stages when evaluation reveals weaknesses in their argument or when additional evidence is required.

6. Relevance to Uzbekistan

The development of GenAI literacy is particularly timely for Uzbek higher education.

Recent studies have already begun to examine GenAI and EFL academic writing in Uzbekistan. Umaralieva (2026), for example, conducted a quasi-experimental study at Fergana State University examining the impact of GenAI on EFL academic writing skills. More recently, Qosimov, Ne'matov, and Shokirova Sharifovna (2026) investigated AI-assisted academic writing among 351 EFL students at the same institution and identified both linguistic benefits





and concerns relating to originality, argumentation, autonomy, and the distinction between scaffolding and substitution.

These studies indicate that the question of AI use in Uzbek EFL education is no longer hypothetical. Students are already interacting with AI tools in academic contexts.

However, a further pedagogical question remains:

How can university EFL students in Uzbekistan be systematically taught to use GenAI in ways that support academic writing development without outsourcing their thinking and authorship?

This question represents a shift from an **impact-oriented research agenda** toward a **pedagogically developmental agenda**.

Rather than asking only whether GenAI improves students' writing, future research should investigate how students can develop the knowledge, critical judgment, strategic skills, and ethical awareness necessary to use GenAI productively.

The proposed framework may therefore serve as a starting point for contextual investigation among university EFL students in Uzbekistan.

7. Implications for Future Research

The proposed framework is conceptual and requires empirical validation.

Future research could proceed through several stages.

First, a needs analysis could investigate university EFL students' current GenAI knowledge, practices, attitudes, and difficulties in academic writing.





Second, existing GenAI literacy frameworks and research on EFL academic writing could be synthesized with findings from the Uzbek context to refine the framework.

Third, experts in EFL, academic writing, educational technology, and assessment could evaluate the framework's content validity and pedagogical relevance.

Finally, the framework could be implemented through a classroom-based intervention. Its effectiveness could be examined through multiple forms of evidence, including performance-based GenAI literacy tasks, writing samples, AI interaction records, reflective journals, and interviews.

Importantly, assessment should not rely exclusively on students' self-reported confidence. A student may report feeling highly AI-literate while still accepting inaccurate or inappropriate AI-generated information. Performance-based assessment could therefore provide stronger evidence of students' ability to evaluate and make decisions about AI output.

For example, students could be presented with an AI-generated academic paragraph containing a combination of factual inaccuracies, weak argumentation, inappropriate evidence, linguistic problems, and potentially fabricated references. Students could then be asked to identify problems, explain their reasoning, verify information, decide what to retain or reject, and revise the text.

Such tasks could provide observable evidence of GenAI literacy rather than measuring only students' perceptions.

8. Conclusion

Generative artificial intelligence is transforming academic writing practices in higher education. For EFL students, GenAI offers significant opportunities for





linguistic and cognitive support, but its unrestricted use also creates risks related to dependency, reduced cognitive engagement, authorship, academic integrity, and the development of writing competence.

The emerging literature suggests that the appropriate educational response is neither unrestricted adoption nor complete rejection of GenAI. Instead, students require explicit pedagogical support that enables them to use AI critically, strategically and ethically.

This paper has conceptualized GenAI literacy as a multidimensional and iterative competence involving understanding, purposeful use, critical evaluation, ethical decision-making, and reflection. On this basis, a preliminary seven-stage pedagogical framework has been proposed: understanding the task, independent planning, purposeful GenAI use, critical evaluation, informed decision-making, independent writing and revision, and reflection.

The central principle of the framework is that **GenAI should function as a scaffold for learning rather than a substitute for student thinking and authorship.**

The framework is particularly relevant to Uzbekistan, where research on AI-supported EFL academic writing is emerging but the pedagogical development of students' GenAI literacy remains an important area for further investigation. Future empirical research should examine how the framework can be adapted to the linguistic, educational, and institutional characteristics of Uzbek higher education and whether systematic instruction can strengthen students' ability to use GenAI while maintaining academic agency and writing competence.

Ultimately, the goal of GenAI literacy education should not be to teach students simply to produce better texts with AI. It should be to help them become





more informed, critical, independent, and responsible academic writers in an AI-mediated educational environment.

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