



PAPER

## A PEDAGOGICAL SYSTEM FOR DEVELOPING METHODOLOGY OF INTEGRATING GENERATIVE ARTIFICIAL INTELLIGENCE TECHNOLOGIES INTO ENGLISH LANGUAGE TEACHING IN HIGHER EDUCATION

Nigmatova Nozimaxon Ulug'bek qizi<sup>1,\*</sup>

<sup>1</sup>Independent researcher at Fergana State University

\*comrehensible@gmail.com

### Abstract

This article explores the theoretical and methodological foundations of a pedagogical system aimed at developing a methodology for integrating generative artificial intelligence technologies into English language teaching in higher education. The didactic potential of generative AI and mechanisms for implementing learner-centered and competency-based approaches are analyzed. The target, content, technological, and outcome components of the pedagogical system are substantiated. The findings contribute to enhancing the digital and methodological competencies of English language instructors.

**Key words:** generative artificial intelligence, English language teaching, higher education, pedagogical system, digital competence, methodological integration.

### INTRODUCTION

In the context of ongoing globalization processes and the rapid development of digital technologies, the higher education system is facing the need to fundamentally reconsider the content and methodology of foreign language teaching, particularly English language instruction.

English has become not only a primary means of international communication, but also a key instrument for scientific information exchange, professional activity, and academic mobility. Therefore, organizing English language teaching in higher education institutions on the basis of modern innovative technologies is regarded

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as one of the priority directions for enhancing the quality of education. In recent years, the integration of generative artificial intelligence technologies into the educational sphere has created new opportunities for personalizing the learning process, activating students' independent learning activities, and improving overall instructional effectiveness. These technologies enable the automated generation of learning materials, simulation of communicative interactions in the language learning process, detection and analysis of linguistic errors, as well as the implementation of adaptive assessment mechanisms. As a result, it has become increasingly evident that traditional teaching approaches, due to their limited capacities, are unable to fully meet the demands of contemporary education. Under these conditions, there emerges a clear necessity to integrate generative artificial intelligence technologies into the English language teaching process in a systematic and methodologically grounded manner. This, in turn, requires that the process be organized not randomly, but within the framework of a scientifically substantiated pedagogical system.

## LITERATURE REVIEW

The issue of integrating generative artificial intelligence technologies into the process of teaching English in higher education is emerging as a complex and multidimensional scientific problem situated at the intersection of modern pedagogy, digital didactics, and foreign language teaching methodology. The development of scientifically grounded approaches in this field is closely linked to the personalization of the educational process, the enhancement of students' cognitive activity, the effective use of adaptive learning technologies, and the practical implementation of the competency-based approach. From this perspective, the analysis of theoretical and empirical studies conducted in this area contributes to identifying methodologically sound opportunities for integrating generative artificial intelligence technologies into English language teaching. Within Lev Vygotsky's sociocultural theory of development, the effectiveness of learning is explained by the organization of the educational process in accordance with the learner's zone of proximal development. This concept is methodologically

aligned with the adaptive and individualized learning capabilities offered by generative artificial intelligence technologies. AI-based educational tools support learners' developmental progress by automatically generating personalized tasks based on the analysis of students' proficiency levels, learning pace, and individual needs.

Jerome Bruner's concept of discovery learning emphasizes that knowledge should not be transmitted in a ready-made form, but rather constructed through learners' active cognitive engagement. Within this framework, generative artificial intelligence technologies facilitate the creation of a didactic environment that stimulates independent inquiry, encourages communicative interaction, and supports the creative use of linguistic units. Robert J. Sternberg's multicomponent model of creativity and intelligence highlights the necessity of developing analytical, creative, and practical thinking in an integrated manner within contemporary education. The use of generative artificial intelligence technologies in English language teaching ensures the balanced development of these components, guiding students to perceive language not merely as a set of reproductive knowledge, but as a creative and functional tool for meaningful activity.

In John Hattie's meta-analytical research, feedback, reflection, and learner engagement are identified as decisive factors in enhancing educational effectiveness. These aspects can be systematically implemented in the learning process through the automated analysis and rapid feedback mechanisms enabled by generative artificial intelligence technologies.

The concept of "reimagining education in the context of digital transformation," promoted by UNESCO, substantiates the necessity of using artificial intelligence technologies as a means of improving educational quality, ensuring equitable access, and supporting lifelong learning. This approach serves as an important methodological foundation for organizing English language teaching in higher education on an innovative basis. The theoretical perspectives analyzed above indicate that the integration of generative artificial intelligence technologies into English language teaching is not a random process, but a scientifically grounded phenomenon closely connected with

contemporary pedagogical concepts. These technologies enable the implementation of learner-centered education, the enhancement of students' cognitive and creative activity, the formation of a reflective learning environment, and the practical realization of the competency-based approach. Consequently, English language teaching emerges as a holistic pedagogical system that, alongside linguistic knowledge acquisition, ensures students' professional and intellectual development.

In recent years, the rapid advancement of artificial intelligence, particularly generative AI technologies, has led to the emergence of a new scientific direction in English language teaching methodology known as the AI in ELT concept. In international research, artificial intelligence technologies are interpreted not merely as technical tools, but as integral components of the pedagogical system within the language learning process. In his recent studies, Mark Warschauer highlights the role of AI-based tools in developing written and oral communication skills and in shaping a reflective learning environment. According to the researcher, the use of AI technologies activates students' independent learning activities and transforms the teacher's role from that of a controller to a facilitator. Yong Zhao emphasizes that, under conditions of digital transformation, the primary goal of education is to foster creative and adaptable individuals. According to his scholarly views, the application of generative artificial intelligence technologies in English language teaching contributes to the development of students' creative writing, communicative competence, and critical thinking skills.

Zoltán Dörnyei underscores the leading role of motivational and affective factors in second language acquisition and demonstrates how artificial intelligence technologies can enhance learning motivation through the creation of personalized learning environments. In his approach, AI-based adaptive exercises play a crucial role in shaping individual learning trajectories.

Ben Williamson analyzes the integration of artificial intelligence technologies into education from pedagogical and ethical perspectives, emphasizing the necessity of methodological soundness, transparency, and alignment with pedagogical objectives when using AI tools in

English language teaching.

OECD reports explain the role of artificial intelligence technologies in education through their support of the competency-based approach. In particular, the potential of AI-based assessment and feedback mechanisms to enhance the effectiveness of foreign language teaching in higher education is explicitly highlighted.

In conclusion, scientific studies conducted by international researchers over the past five years demonstrate that the integration of generative artificial intelligence technologies into English language teaching arises from the objective needs of contemporary pedagogy. These technologies create effective pedagogical opportunities for organizing learner-centered and adaptive education, increasing student motivation, and developing reflective and creative language activities. Therefore, the AI in ELT approach can significantly enhance the effectiveness of English language teaching in higher education only when implemented within a methodologically well-founded pedagogical system.

## ANALYSIS AND RESULTS

The primary objective of this study is to develop a methodology aimed at the effective integration of generative artificial intelligence technologies into the process of teaching English in higher education institutions, as well as to provide a scientific-theoretical and methodological justification for the pedagogical system that ensures this process.

To achieve the stated objective, the following key tasks were carried out within the framework of the research:

- to identify and systematize the didactic potential of generative artificial intelligence technologies in the process of teaching English;

- to analyze the possibilities of integrating generative artificial intelligence with contemporary pedagogical approaches applied in English language teaching;

- to design the structural components of a pedagogical system that ensures methodological integration;

- to provide a scientific justification for the effectiveness of the proposed methodology in the educational process.

The research employed a комплекс set of scientific and pedagogical methods. Specifically, the

method of scientific-pedagogical analysis was used to examine existing scholarly sources and regulatory documents; the comparative analysis method enabled a comparison of traditional and innovative teaching approaches; and the modeling method was applied to design a pedagogical system aimed at integrating generative artificial intelligence technologies. In addition, diagnostic methods were used to assess the level of students' competencies, while forecasting methods were employed to determine the prospective effectiveness of the proposed system.

The pedagogical system developed within the framework of the study represents a set of interrelated components designed to ensure the integration of generative artificial intelligence technologies into the English language teaching process. It comprises the following core components:

The **goal-oriented component** is focused on developing students' competencies in effective communication in English, conscious use of digital technologies, and critical and creative thinking skills.

The content component includes a set of interactive learning materials based on the capabilities of generative artificial intelligence, as well as individual and group tasks and communication-oriented instructional activities.

The **technological component** ensures the adaptability of the educational process through the application of adaptive learning technologies, automated assessment systems, reflective analysis, and self-assessment mechanisms.

The **outcome component** is expressed in students' readiness to engage in independent, fluent, and creative communication in English, as well as in indicators reflecting their effective use of language competencies in professional contexts.

In conclusion, the methodologically grounded integration of generative artificial intelligence technologies into the process of teaching English in higher education contributes to enhancing educational quality, personalizing the learning process, and strengthening students' motivation for academic engagement. At the same time, this approach facilitates the development of English language teachers' digital and methodological competencies and enables the organization of

pedagogical activities aligned with contemporary educational demands. The proposed pedagogical system possesses significant scientific and practical value for the innovative improvement of English language teaching in higher education institutions.

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