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CONCEPTUAL FOUNDATIONS OF THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN FOREIGN LANGUAGE TRAINING FOR APPLICANTS TO HIGHER EDUCATION INSTITUTIONS

Iryna Malynovska,
Senior Lecturer at the Department of Foreign Philology and Translation,
State University of Trade and Economics (Kyiv, Ukraine)
ORCID ID: 0000-0002-0867-3715
iryna.malynovska10@gmail.com

Vladyslava Zinevych,
PhD in Philology, Associate Professor at the Department of English Philology,
Kyiv National Linguistic University (Kyiv, Ukraine)
ORCID ID:0009-0001-6775-4857
zinevych71@gmail.com

Abstract. The article presents a theoretical justification of the conceptual foundations for the application of artificial intelligence technologies in foreign language training for higher education applicants. Based on an analysis of current research, the key capabilities of artificial intelligence in the field of foreign language communication skills development have been identified, including adaptive learning, automated speech skills assessment, modelling of authentic communication situations, and support for individualised learning paths. The advantages of using intelligent tools for teachers and students have been highlighted, namely the optimisation of the pedagogical process, access to high-quality digital resources, prompt feedback, and the expansion of opportunities for independent language learning. At the same time, a number of limitations and risks associated with the use of AI are outlined, in particular, issues of academic integrity, the lack of an emotional component, threats to data confidentiality, and the possibility of technological dependence. The article emphasizes the importance of ethical and pedagogically sound application of intelligent technologies. The results obtained are summarized in the form of structured conceptual principles that can serve as a basis for further scientific research and the development of innovative models of foreign language training in the context of the digital transformation of education.

Key words: higher education institutions, foreign language training, artificial intelligence, methodology, educational process.

Introduction. The rapid development of digital technologies and the spread of intelligent systems are significantly transforming the educational space, in particular foreign language training for higher education applicants. Artificial intelligence (AI) is no longer just a technical tool and is increasingly seen as an important resource for modernising language education. Its implementation creates the conditions for rethinking traditional pedagogical approaches, forming an adaptive educational environment and individualising learning trajectories, which meets the requirements of today's globalised information society. The relevance of this issue is due to the fact that foreign language training in higher education institutions (HEIs) is designed to provide students not only with language skills, but also with the ability to communicate effectively across cultures, work with authentic sources, and communicate professionally in a digital environment (Romanyshyn, Chukhno, Fyisa, 2023). At the same time, traditional teaching methods do not always fully meet the needs of the 'digital-native' generation of students, who are focused on interactivity, dynamism and personalisation of the educational process. Therefore, artificial intelligence emerges as an innovative tool that provides a flexible combination of individualised, blended, adaptive and project-oriented learning.

An analysis of scientific sources shows that the use of AI in the process of learning a foreign language opens up opportunities for automatic speech analysis, text recognition and generation, model-

ling real communication situations, and creating intelligent simulators that support the development of competencies at various levels – from lexical and grammatical skills to discursive and sociocultural competence. Artificial intelligence tools enable continuous feedback, identify individual student difficulties, and create personalised recommendations and learning paths, making the process of foreign language competence development more effective and scientifically sound. However, as scientific research shows, the introduction of AI into foreign language education requires a clear methodological basis. It is important to define the conceptual principles that regulate the use of intelligent systems: pedagogical expediency, ethical aspects, didactic principles, the role of the teacher, the degree of autonomy of learning, and the balance between technological support and live pedagogical communication (Kostrytska, Zuienok, 2013). The existence of such a conceptual framework makes it possible to ensure the quality of education, avoid the risks of mechanical copying of information, and guarantee the formation of conscious foreign language activity. It should be emphasised that artificial intelligence does not replace the teacher, but rather expands their capabilities. It serves as a means of optimising the learning process, a tool for diagnosing and correcting errors, and a platform for creating an innovative educational environment in which students acquire competencies in interacting with intelligent systems. Thus, the role of the teacher is transformed: they become a moderator, mentor, and designer of a digital learning space, capable of integrating AI into methodological technologies in accordance with the goals of foreign language training.

Summarising the above, we conclude that researching the conceptual foundations of applying artificial intelligence in foreign language training for higher education students is an important step in identifying new opportunities for the development of language education, outlining innovative pedagogical strategies, and forming competent, mobile, and competitive specialists in the context of the digital transformation of society.

The purpose of the study is to provide a theoretical justification and form conceptual foundations for the application of artificial intelligence in foreign language training for higher education students, as well as to identify the potential opportunities and limitations of using artificial intelligence in the process of developing foreign language communication skills.

Research material and methods. The methodological basis of the study consists of modern concepts of digital pedagogy, theories of foreign language communicative competence, and approaches to the implementation of artificial intelligence in education. The following methods were used in the work: analysis and synthesis of scientific sources to determine the theoretical basis of the study; systematisation and generalisation to form structured conceptual foundations.

Main part of the study. The current stage of development of digital civilisation is characterised by the active introduction of artificial intelligence technologies into all spheres of public life, including education. AI is rapidly becoming one of the most innovative tools capable of significantly changing approaches to learning, particularly in the field of foreign language training for higher education students. At the same time, given the novelty and dynamic development of such technologies, a number of conceptual, methodological and practical questions arise regarding their pedagogically sound use.

It is important to note that the Concept for the Development of Artificial Intelligence in Ukraine defines the directions for the implementation of intelligent technologies in key areas of the state's activities, in particular the economy, public administration, medicine, science and education. This document presents a vision of the potential of AI and outlines priority guidelines for its further integration into national innovation processes. The scientific basis for the formation of state policy in the field of artificial intelligence is described in detail in the monograph ‘Strategy for the Development of Artificial Intelligence in Ukraine’ edited by A. Shevchenko**.** (Shevchenko, 2023). The authors of the monograph analyse the conditions for the development of AI, methodological approaches to its deployment, and mechanisms for the effective implementation of technologies at various levels of socio-economic systems.

The requirements for modern foreign language education are clearly defined in the Action Plan for the creation of a single European indicator of leading competences (The European Indicator of Language Competence). In addition to linguistic competence (knowledge of grammatical rules, command of vocabulary and phonetics of a foreign language, as manifested in their use in speech), the importance of social competence (covering sociocultural, sociolinguistic and professional aspects that contribute to personal development and integration into the international community) and communicative competence (the ability to use language effectively in different situations, selecting appropriate linguistic means and communication strategies) is also emphasised. This component ensures the ability to interact with native speakers and effectively participate in interpersonal and intercultural communication.

The problems of defining the concept of 'artificial intelligence' and its conceptual content are revealed in the works of O. Baranov, who emphasises the multidimensionality of this term and the need for its interdisciplinary analysis (Baranov, 2023). The work of V. Redko, who studies the prospects of using AI in the educational process and issues of digital pedagogy, as well as S. Litvinova, who analyses the potential of intelligent technologies in creating adaptive educational environments and modelling personalised learning trajectories, is also significant for the study. The peculiarities of using artificial intelligence tools in the study of foreign languages by higher education students are considered by M. Burlak and Yu. Hrynova (Burlak, Hrynova, 2024). Their work highlights the potential of artificial intelligence to modernise teaching practices, improve the effectiveness of educational monitoring and support the development of key competencies in learners.

Artificial intelligence and the educational tools created on its basis require in-depth theoretical understanding, as their implementation in the field of foreign language education poses new tasks and challenges. Issues such as the interaction of AI with traditional teaching methods, the role of the teacher and the level of student autonomy, and the specifics of creating a safe, ethical and effective digital language environment require further research. Particular attention should be paid to the potential of intelligent technologies to improve the effectiveness of foreign language training, individualise learning trajectories, improve communication practices and develop key competencies of learners.

In addition, a thorough analysis of the methodological potential of AI tools is relevant: automatic assessment of oral and written speech, adaptive trainers, intelligent tutors, language situation generation systems, etc. These tools can not only increase the effectiveness of foreign language training, but also contribute to the transformation of the entire industry, creating conditions for flexible, personalised, and scientifically based learning.

It should be noted that the theoretical foundations for the formation of foreign language communication competences (FLC) in higher education institutions are based on a combination of modern pedagogical concepts and innovative technologies that ensure the effective implementation of information and communication technologies and artificial intelligence in the educational process. In the context of globalisation and rapid social change, foreign language proficiency is transforming from an additional skill into a necessary professional and life competence for specialists in various fields (Dereka, Kviatkovska, 2021). This poses new challenges for higher education, as it is at this stage that the key foundations for the future professional training of students are laid.

Foreign languages now serve not only as a means of everyday and professional communication, but also as an important factor in academic and social mobility, facilitating the integration of individuals into the modern multicultural space. The ability to use a foreign language opens up access to global information resources, broadens the horizons of international cooperation, and provides opportunities for personal and professional growth.

Results and discussion. The modern digital environment offers a wide range of tools and services based on artificial intelligence technologies that can significantly improve the effectiveness of the educational process and optimise approaches to teaching various disciplines, including foreign

languages. These solutions are actively integrated into learning platforms, mobile applications, adaptive learning systems, and intelligent simulators, creating new opportunities for both teachers and students. One of the key advantages of artificial intelligence tools is their ability to perform comprehensive diagnostics of foreign language skills and abilities. Modern systems can analyse pronunciation, grammar, vocabulary, sentence structure, speech rate, and even students' discourse skills. For example, automatic speech recognition (ASR) technologies can identify typical phonetic errors and suggest exercises to correct them. Natural language processing (NLP) tools can analyse students' written texts, identify stylistic errors, incorrect word usage, or violations of logical and grammatical connections. Intelligent educational systems such as Duolingo, ELSA Speak, Grammarly, and Write&Improve use machine learning algorithms to create adaptive learning paths that are tailored to the individual characteristics of each learner. For example, Duolingo analyses the success of previous tasks and, based on this, automatically selects the next exercises aimed at improving weak areas. ELSA Speak uses deep sound analysis technology to provide a detailed assessment of a student's pronunciation and offers individual training modules. Grammarly and Write&Improve correct grammatical, lexical, and stylistic errors, expanding students' written language skills. Chatbots and virtual personal assistants (e.g., Replika, ChatGPT, Microsoft Copilot) also have significant potential, as they are capable of simulating real-life communication situations. They help students practise speaking and writing in conditions close to authentic ones. Such tools can reproduce dialogues of various genres – from everyday communication to professional and intercultural situations – which significantly expands the possibilities for developing discursive and sociocultural competence.

Another area is automated monitoring of learning outcomes. Artificial intelligence systems are capable of tracking the dynamics of foreign language competence development, making predictions about success, determining the level of risk of academic difficulties, and offering pedagogical recommendations for preventing them. For example, the Coursera and Canvas LMS platforms use learning analytics to determine the effectiveness of individual learning modules, the pace of material coverage, and the individual progress of learners.

Thus, artificial intelligence tools not only automate individual didactic functions, but also create a new pedagogical logic in which learning becomes flexible, personalised, and oriented towards the actual level of competence development. They help to increase student motivation, facilitate access to high-quality learning materials, provide individualised support, and significantly expand opportunities for independent foreign language learning.

Table 1

AI tools for foreign language training of higher education institution applicants

AI tool	Main functions	Educational effect
Duolingo	Adaptive lesson planning; automatic task selection; progress tracking	Personalised learning; increased motivation; development of lexical and grammatical skills at your own pace
ELSA Speak	Pronunciation analysis; identification of phonetic errors; recommendations for improving articulation	Improvement of oral speech; formation of adequate pronunciation; increased confidence in communication
Grammarly/ Write & Improve	Checking grammar, vocabulary and style; analysing the structure of written expression	Improving writing skills; developing academic writing; building editing skills
ChatGPT/ Copilot	Text generation; dialogue modelling; explanation of grammatical and lexical structures	Formation of communicative competence; development of discourse creation skills; training in intercultural interaction
Coursera/ Canvas AI Analytics	Monitoring of learning progress; learning analytics; predictive models of success	Improving the quality of assessment; early detection of difficulties; optimisation of teaching strategies

However, there are a number of drawbacks to using AI in the process of learning a foreign language. In particular, researcher T. Kosova emphasises the importance of introducing artificial intelligence, specifically the GPT chatbot, into English language teaching using interactive methods and the need to individualise teaching approaches for each student. However, she also acknowledges a number of disadvantages associated with this (Kosova, 2023).

Researchers (Burlak, Hrynova, 2024) believe that one of the key and most controversial issues accompanying the introduction of artificial intelligence technologies into the educational sphere is the question of academic integrity and the ethical use of intelligent systems. We cannot disagree with this, because as AI becomes an accessible tool for a wide range of students and teachers, there is a growing need to develop a responsible attitude towards its capabilities and limits of use. The educational process involves the development of independent thinking, creative abilities and the ability to solve communicative or professional tasks on one's own. However, excessive or incorrect dependence on intellectual services can lead to a violation of the principles of honesty, transparency and objectivity in assessment.

In our opinion, the issue of personal data security is no less important. Artificial intelligence functions by analysing large amounts of information, including students' personal data: test results, speech samples, behavioural characteristics, learning trajectories, performance statistics, etc. The processing of such data may give rise to potential risks related to confidentiality, unauthorised access or use of information by third parties. This requires not only technical protection measures, but also clear regulatory and legal regulation and increased digital literacy among teachers and students.

It is also important to consider the ethical aspect of creating and applying AI algorithms. In the case of foreign language training, the system analyses the applicant's speech, their individual characteristics, strengths and weaknesses. If such algorithms are created without taking into account ethical principles or without sufficient transparency of their work, there is a risk of bias, incorrect recommendations or unequal treatment of users. Therefore, it is particularly important to develop ethical standards for the use of AI in education, ensure the transparency of algorithms and foster a culture of responsible use of technology.

Summarising all of the above, we conclude that, along with its potential advantages, artificial intelligence also raises a number of sensitive issues that require systematic consideration and scientifically sound solutions to ensure that its implementation promotes academic integrity rather than undermining its foundations.

Despite the significant advantages of artificial intelligence technologies, researchers and practitioners highlight a number of limitations and shortcomings associated with the use of such tools in educational activities. One of the most common comments is the lack of a full-fledged emotional component in artificial intelligence. Since intelligent systems are not capable of empathy, interpreting the tone of communication or the emotional context of statements, their interaction with the user sometimes takes on a technocratic, limited or even cold character. This can lead to misinterpretation of the student's intentions, distortion of the meaning of the request, or creation of a response that does not correspond to the psychological state or communicative situation.

The lack of emotional intelligence in artificial intelligence limits its capabilities in situations where support, tact, ethics, or the ability to read non-verbal cues are important. For example, when learning a foreign language, learners often experience feelings of insecurity or fear of making mistakes. In such cases, the teacher can provide emotional support, motivation, hints, and individual recommendations tailored to the specific student. Chatbots, even the most advanced ones, remain tools that work primarily on the basis of algorithms, statistical models, and pre-formed data, and therefore are unable to reproduce human sensitivity and psychological delicacy. Another significant challenge is the risk of users becoming dependent on digital support. Students who regularly use chatbots and generative systems for translation, text analysis, grammar exercises, or language construction may gradually

weaken their own cognitive and language skills. There is a possibility that students will become accustomed to ready-made answers and cease to make sufficient effort to independently search for information, analyse speech structures, or develop critical thinking. This creates a certain danger: technology that is supposed to support the educational process may, in the long term, slow down the development of the learner's autonomy.

This situation is particularly relevant in the context of foreign language education. Language learning requires active practice, repetition, creativity, and personal communicative initiative. Over-reliance on automated systems can reduce a student's ability to construct their own statements, use a variety of language strategies, understand context, and work with authentic sources. Therefore, it is important that chatbots function as an auxiliary tool rather than a complete replacement for natural communication and language practice.

In addition to emotional and cognitive aspects, scientific discourse highlights other shortcomings associated with the use of intellectual resources. These include possible errors in algorithms, partial or inaccurate understanding of linguistic constructions, generation of false or unverified information, and varying levels of quality of results depending on language, accent or task specificity. For example, speech recognition systems may incorrectly analyse a user's pronunciation due to individual phonetic characteristics. Text analysis services sometimes misinterpret ambiguous constructions or cultural allusions. All this requires constant improvement of algorithms and a critical attitude towards the responses of tools. Together, these factors create a broad field for scientific research and pedagogical exploration, highlighting the need for further study of the capabilities and limitations of artificial intelligence. Research in this area should include issues of ethical use of technology, prevention of technological dependence, data protection, analysis of the quality of learning outcomes, and the search for a balance between automation and traditional teaching methods.

Despite these shortcomings, chatbots and other generative artificial intelligence tools already demonstrate significant potential as an auxiliary component of foreign language training. They can act as personal trainers for students, provide access to instant feedback, simulate individual language situations, improve writing and speaking skills, and help increase the pace and effectiveness of learning.

For teachers, such systems can become a tool for preparing teaching materials, developing tasks, creating didactic scenarios, analysing student errors, or even forming simulated dialogues for practical classes. The use of AI significantly saves teachers' time and allows them to focus on activities where the human factor is crucial: mentoring, motivating students, interpersonal communication, evaluating creative work, etc.

The constant updating of the technological landscape makes artificial intelligence research extremely promising for the education sector. In the future, we can expect the emergence of systems capable of more accurately taking into account the personal characteristics of students, interacting on the basis of emotional analysis, creating more complex communicative situations, and ensuring full integration into the learning environment. Therefore, studying the potential, ethical challenges, and didactic possibilities of AI is an important step in the development of modern foreign language education.

Based on the analysis of scientific sources and pedagogical observations, we have identified the basic principles for the application of artificial intelligence in foreign language training for higher education institution applicants

1. *The principle of pedagogical expediency and scientific validity*. Artificial intelligence should be integrated into foreign language education not as an end in itself, but as a tool that enhances pedagogical methods. The use of AI should be based on clear didactic goals, taking into account the patterns of foreign language competence formation, cognitive mechanisms of language acquisition, and the scientifically proven effectiveness of digital solutions.

2. *The principle of individualisation and adaptability of learning*. Artificial intelligence provides the ability to create personalised learning trajectories that take into account the level of preparation, pace of learning, learning styles and communication needs of each student. Adaptive algorithms allow you to adjust the complexity of tasks, form author recommendations and perform accurate diagnostics of language skills.

3. *The principle of interactivity and modelling of authentic communication situations.* AI tools should provide a realistic language environment in which students can practise speaking and writing. Chatbots, virtual tutors, speech recognition and dialogue generation systems contribute to the development of discursive, sociocultural and pragmatic competences by modelling live communication.

4. *The principle of ethics, security and academic integrity*. The use of intelligent technologies must comply with the standards of academic integrity, personal data protection and ethical approach to educational activities. It is important to ensure that students are aware of the limits of AI use, to avoid replacing their cognitive activity with automated responses and to stimulate the development of critical thinking.

5. *The principle of transforming the role of the teacher and developing digital pedagogical competence*. In an AI environment, the teacher moves from the role of a knowledge carrier to that of a facilitator, consultant and designer of digital learning spaces. Therefore, it is important to develop their digital, methodological and analytical competences, which allow them to effectively integrate intellectual tools, analyse educational data and support students in the formation of foreign language skills.

Conclusions. The study found that the use of artificial intelligence technologies in foreign language training for higher education students has significant didactic, methodological and organisational potential that can transform traditional approaches to foreign language teaching. The basic conceptual principles of AI integration into the educational process have been identified, among which the key ones are the pedagogical expediency of using intelligent tools, ensuring the individualisation of learning, modelling authentic communicative situations, adhering to the principles of ethics and academic integrity, as well as rethinking the role of the teacher in the context of the digital transformation of education. It has been found that artificial intelligence tools contribute to the expansion of foreign language education opportunities by providing flexible access to educational resources, personalised recommendations, automated analysis of language skills, and the formation of adaptive learning trajectories. At the same time, issues of personal data security, responsible use of intelligent systems, and prevention of excessive dependence of learners on technology remain important. The results obtained confirm that AI cannot completely replace teachers, but it can significantly expand their pedagogical potential and increase the effectiveness of the educational process. Intelligent systems should serve as a support tool, not an alternative to live communication or creative cognitive activity. Thus, the conceptual foundations of artificial intelligence determine the directions of foreign language training in the modern digital educational ecosystem. Their implementation will contribute to improving the quality of language education, training competitive specialists, and creating an innovative learning environment that meets the challenges of a globalised information society. This study considers only the basic and potential possibilities for the application of artificial intelligence tools in foreign language education. At the same time, it is obvious that these technologies are in the stage of active development, constant improvement and expansion of functional capabilities. Given the pace of digitalisation of society and the expansion of the use of AI in education, this area requires further scientific research, methodological improvement and a thorough description of the practical possibilities of such tools in the study of foreign languages.

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