

LANGUAGE, CULTURE, COMMUNICATION

LINGUISTIC AND DIDACTIC POTENTIAL OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN TEACHING FOREIGN LANGUAGES

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Summary

The article deals with the issue of artificial intelligence that should be integrated with traditional foreign language teaching methods to create a balanced and effective approach. When artificial intelligence is fully integrated into the educational process, learning tasks will reach a new level. Feedback, personalizing learning, adapting to everyone's needs will have a significant impact on learners. Special attention is paid to the benefits of implementing artificial intelligence in learning and also the methodological and didactic potential of chatbots. Currently, higher education institutions use artificial intelligence technologies in the process of teaching foreign languages. The author emphasizes that different artificial intelligence tools allow to personalise learning and provide an individual approach taking into account the developmental characteristics and needs of each participant of the learning process in higher education; to provide instant feedback, which motivates students and educators for further learning in cooperation, helps to see both development prospects and limitations, to adjust the learning trajectory in a very short time; to motivate students to learn a foreign language through a high degree of interactivity and accessibility.

Key words: educational system, artificial intelligence, chatbot, Chat GPT, foreign language learning, personalisation of education, virtual environments.

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1. Introduction

The relevance of the study is due to the growing interest in the use of artificial intelligence (AI) in the educational system, in particular in the process of teaching foreign languages. The development of artificial intelligence technologies opens up new opportunities for individualising learning and improving its quality.

The aim of the research is to study and analyse the application of artificial intelligence technologies in the process of teaching foreign languages; to determine their linguodidactic

potential; to determine the optimal levels of foreign language proficiency for the use of chatbots in order to develop speech communication skills.

Theoretical significance of the study consists in the description of artificial intelligence technologies used in the process of teaching foreign languages. Practical significance is that the results of the study can be used to create new approaches and strategies that include artificial intelligence technologies in the process of teaching foreign languages.

Research methods used in the study: theoretical (generalisation, analysis of information); comparative (comparison of different approaches and technologies to determine their effectiveness and accessibility).

2. The benefits of implementing artificial intelligence in learning

The main goal of foreign language teaching is the formation of all components of communicative competence: linguistic (rich vocabulary, ability to formulate and understand grammatically correct phrases, have correct pronunciation, spelling); discursive (ability to apply adequate strategies for understanding and creating texts); sociocultural (understanding of the sociocultural context in which the social community using a given language is created, ability to be an effective participant and mediator of the dialogue of cultures); sociocultural competence (understanding of the social and cultural context in which the language is used, ability to be an effective participant and mediator of the dialogue of cultures). Students master linguistic competences in the process of interaction with the teacher, educational literature, Internet sources, etc. The formation of discursive competences is carried out by the students. Formation of discourse competence is carried out in the process of dialogic and monologic utterances both in the classroom and outside it.

Artificial intelligence is actively penetrating into various spheres of society, and education is no exception. According to M. McLuhan, communication media modifying the environment surrounding people change their way of perceiving the world, thinking and activity. Consequently, it is impossible today to imagine any learning model that does not rely on artificial intelligence technologies (*McLuhan, 1964*).

Due to the emergence of modern learning technologies, especially the need to incorporate digital technologies into the learning process in higher education, NLP models are becoming important for the vocational education system as they enable personalised learning, on-demand support and other innovative approaches (*Odden and others, 2021*).

The benefits of implementing artificial intelligence in learning can be astounding. It can be illustrated with the following examples.

1. Individualisation and personalisation of education. It is assumed that in a group with 15-25 students it is quite difficult for a foreign language teacher to find the right approach to each of them. But thanks to the use of artificial intelligence when learning a new language, it is possible to take into account the needs of each individual student. With AI integrated into the learning process, teachers will be able to collect gigabytes of data about their students, their interests, abilities, etc. When analysed, this data can pave the way for personalised education.

Today, there are many AI-powered language learning platforms that allow learners to work at their own pace, exploring language material and identifying what they are having trouble with, engaging them in tasks they are best at, appealing to their interests and taking into account their cultural background. Data will also be able to allow teachers to understand what is going on in their students' minds, to predict their future performance (*Keshav, 2023*).

2. Providing instant feedback. When learning foreign languages with artificial intelligence, feedback will come quickly. When students work hard on an important test, waiting for

results can be stressful. When they see their mistakes a week later, they won't be able to remember how or why they made them. A language learning platform using artificial intelligence will be able to automatically assess test results and even analyse essays as soon as students have completed them, pointing out mistakes and suggesting ways to avoid them in the future. This will allow students to take immediate action to correct their mistakes and likely do better on future tests. As for teachers, AI-assisted language learning solutions can identify weaknesses in their curriculum and help them see what could be improved in lectures or practical assignments, which aspects of the language are most challenging for students, which learners need additional guidance.

3. Addressing the fear of failure. It is normal to make mistakes, as people learn from mistakes. But when students make mistakes, they get low grades, or when they don't answer questions, they often feel embarrassed or even afraid of what the pre-tutor will say. AI in language learning will not criticise or humiliate students, it will be able to assess students without judging them.

4. Changing the role of the teacher. AI will not force teachers to leave the university, but it will redefine their role. The teacher is more likely to become a conduit of knowledge, a consultant and a facilitator, which means that technology will perform daily, routine duties for teachers, while freeing up time for them to communicate and support learners. As AI-assisted language learning begins, instructors will have more time to coordinate instruction and mentor students. The most tech-savvy teachers will be able to try their hand at being data scientists, analysing and using the data generated during the learning process.

5. An informed approach to learning. With AI used to learn a foreign language, learners will be able to learn from anywhere in the world at their own pace, set their own goals and follow a personalised learning plan. Teachers won't have to cover the same material every year, thanks to a personalised approach that varies from student to student. In addition, AI can help develop fun games, quizzes and other learning and research activities that match curricula with student interests.

3. The methodological and didactic potential of chatbots

Currently, there is a growing interest in these technologies (machine learning, computer vision, intelligent tutoring system, data analysis), based on which programmes and information and communication technologies are created that can significantly change the role and functions of the subjects of the learning process. For example, chatbots are capable of solving methodological and didactic tasks. The methodological potential of chatbots is that they enable students to master foreign-language oral and written speech in the process of teaching a foreign language. The didactic potential of chatbots provides real-time feedback to students in the form of answers to the questions asked, as well as in the control of students' performance of individual tasks. Thus, the content of foreign language teaching should include knowledge, skills and abilities in the sphere of contacts with chatbots and voice assistants. The organisation of teaching students a foreign language using chatbots depends on their level of foreign language proficiency.

In the process of learning a foreign language using chatbots, productive types of foreign language speech activities (writing and/or speaking) are developed. Thanks to chatbots it is possible to develop the skills of oral and written interaction of students in classroom and extracurricular time. Oral interaction with chatbots develops speaking and listening, while written interaction develops writing and reading. The productive type of

foreign language speech activity is a speech-thought stimulus (in the process of conversation) and reaction (in the process of answering the chatbot's statement) to the perception and analysis of the information received from the chatbot. It should be noted that in the process of interaction with chatbots, students develop receptive and productive foreign language speech skills.

The level of a learner's foreign language proficiency is important when organising the teaching of foreign language speech communication using chatbots. The most optimal levels of learners' foreign language proficiency are A2-B1. A learner with A1 level has a deficit of language and speech means, can understand only the simplest and shortest questions of a chatbot. At this level, the student is unable to conduct a dialogue with the chatbot. Learners with level B2-C2 do not have a need for speech practice with chatbots, as they have a high level of foreign language proficiency, which enables them to communicate freely with native speakers, listen to foreign radio stations, watch foreign TV channels, read foreign press on the Internet, etc. Thus, the use of chatbots for the development of speech communication skills is useful for learners of A2-B1 levels.

The scheme of work with the use of chatbots is a necessary component of the process of learning a foreign language. It includes conducting a dialogue with a chatbot; performing individual tasks and evaluating the work done.

4. Form of work

In the process of learning a foreign language with the use of chatbots, mainly classroom and extracurricular work is used. The first lessons with the use of chatbots should begin in the classroom with the explanation of the material, and practical work is carried out by students individually out of the classroom. It should be noted that classroom work is desirable for students with A1-A2 level, for students with B1-B2 level, extracurricular work with the use of chatbots is desirable for practising speech communication skills.

AI technologies have great linguistic and didactic potential in foreign language teaching. AI can provide a whole range of tools and resources for effective foreign language learning.

Here are some examples of successful application of AI technologies in foreign language teaching:

1. *Duolingo* is a mobile application that uses AI for language learning. This app offers interactive exercises, feedback and personalised learning.

2. *Rosetta Stone* is an online language learning platform that uses AI to create interactive lessons and adaptive learning. The AI analyses learners' performance based on their responses and suggests customised tasks to develop their language skills.

3. *Babbel* is an app for learning foreign languages. AI analyses the learner's pronunciation and grammar and suggests additional materials to develop speech skills.

The main advantage of AI technologies is the ability to create interactive and adaptive learning systems; to provide learners with personalised lessons and assignments tailored to their needs and language proficiency level. This enables each learner to work at their own pace and focus on their weaknesses. The chatbot also offers a variety of exercises and games that promote reading, writing, speaking and listening comprehension skills. For example, voice assistants can be used to practice pronunciation and listening, while machine translation systems allow students to enrich their vocabulary.

In addition, AI technologies can be used to create virtual environments in which learners can communicate in a foreign language. Such environments include virtual interlocutors,

role-playing situations and simulations of real-life situations. Finally, a chatbot can be used for automatic assessment and feedback on the results of learning tasks. The feedback system is an important component of the educational process. AI allows creating chatbots that are able to interact with learners through dialogue, analyze their answers and give qualitative feedback. In general, the linguodidactic potential of AI technologies can significantly improve the process of foreign language acquisition, making it more accessible, interactive and personalised. Despite the successful use of AI in foreign language teaching, there are problems and limitations:

1. AI may have limitations in recognising accents, dialects and pronunciation, which can lead to inaccurate assessments and feedback.
2. AI may have limited context and understanding of natural language, which may lead to misinterpretation or incorrect assessment of learners' responses.
3. AI is orientated towards independent learning, therefore learners may experience a lack of real interpersonal contact.

It is important to use AI in combination with other methods that enable learners to apply their language skills in real-life situations.

5. Principles and methods of teaching

Teaching foreign language speech communication based on AI technologies is realised through the following teaching principles:

- individualisation: taking into account the needs and knowledge level of each learner to provide personalised material and tasks;
- active participation: interaction-based learning, including dialogues and tasks, requires the active participation of each learner;
- contextuality: building foreign language skills and competences in real or simulated situations that help learners to apply their knowledge in practice;
- feedback: providing immediate feedback on pronunciation, grammar and other aspects of the language so that learners can realise their mistakes and correct them;
- progression: increasing the difficulty of the tasks;
- motivation and engagement: using interactive and engaging methods such as games, achievement levels, etc;
- adaptability: taking into account the learner's needs and providing personalised materials and assignments;
- interactivity: providing opportunities for learners to interact with the AI, ask it questions, have dialogues.

Methods of teaching foreign language speech communication using AI technologies include:

- interactive learning applications for foreign language learning. They can offer personalised tasks according to the learner's level and needs;
- voice assistants such as Siri, Alexa can help in learning a foreign language by answering questions, doing translations and practising pronunciation;
- automatic translation can be useful for understanding and translating texts in a foreign language;
- virtual classes and online courses provide personalised materials and feedback;
- pronunciation analysis: voice assistants can analyse a learner's pronunciation, offer feedback and provide tips for improvement;
- adaptive learning: chatbots can adapt to the learner's level and needs, offering a variety of personalised tasks and materials.

The main components of a linguodidactic environment using AI technologies:

1. Learner: personal gadgets (smartphone, tablet, computer) that he/she uses to access educational materials and interact with the system.
2. Educational platform: web application that provides access to educational resources, tasks and tools for language learning.
2. Educational platform: a web application that provides access to educational resources, assignments and language learning tools.
3. Intelligent Assistant: an artificial intelligence system that answers learners' questions, provides explanations and feedback. It uses natural language processing and machine learning technologies to understand and analyse learners' responses.
4. Adaptive Assignments: a system that offers assignments and exercises tailored to individual needs and language proficiency levels. It can use artificial intelligence analytics to assess progress and provide the most appropriate assignments.
5. Online resources: database with educational materials (texts, audio and video materials, etc.).
6. Multimedia tools: interactive tools (voice and video chats) that help to improve speaking and writing skills.
7. Analytics: a system that collects and analyses data on students' progress, errors, successes and preferences. This information can be used to further personalise learning.

6. The most popular artificial intelligence tools

Artificial intelligence is a huge range of algorithms and machine learning tools that can quickly acquire data, identify certain patterns, optimise or predict trends. Many platforms (Trello, Canva, Miro, Notion, etc.) allow foreign language teachers to use artificial intelligence assistants in the teaching process, which can generate the necessary texts and tasks, images, diagrams, cards and other didactic materials in one click.

Online applications *quillionz*, *testportal.net*, *questionwell.org*, *quizwhiz.ai*, *quetab.com* and others are suitable for working with texts. For example, the *quillionz* online application automatically generates a list of keywords based on which assignments are generated. Based on the content of the text added from the Internet, the programme automatically generates interactive tasks including multiple choice, short answer, general questions, fill-in-the-blanks, interactive quizzes and more.

GPT Chat is an effective tool for assessing and analysing students' written work, capable of identifying errors and offering practical recommendations on how to correct them and improve the quality of texts. This innovative solution will help students to develop their writing skills and improve the professionalism of their writing. Using GPT chat, students have the opportunity to get an independent assessment of their texts, as well as to learn recommendations and tips aimed at improving their writing skills. Using GPT chat will be a really useful step in the learning process and contributes to the improvement of students' writing skills.

Chat GPT is a generative language model capable of generating human responses to open-ended prompts (questions, statements or prompts related to the learning material) (Fuchs, 2023).

There are several ways in which Chat GPT can be used in education. ChatGPT has great potential to improve foreign language teaching in higher education. Here are some ways to use Chat GPT to improve the educational process:

1. Personalised learning. Chat GPT can be used to provide a personalised learning experience for each student. By analysing the learning style and adapting the curriculum to his individual needs, Chat GPT contributes to more effective and efficient learning (*Danesi, 2024*).
2. Instant feedback. Chat GPT provides instant feedback to learners, allowing them to assess their progress and adjust their approach accordingly. This feedback can be in the form of quizzes, assessments, or conversational interaction.
3. Interactive Lessons. Chat GPT can be used to create interactive lessons that engage students and make learning more fun. Using dialogue prompts, quizzes, and interactive activities, Chat GPT can help learners stay engaged and interested in the content.
4. Language Learning. Chat GPT can be used to facilitate language learning by providing conversational practice and feedback; by using Chat GPT to practice communication, students can improve their language skills in a fun way (*Duggan, 2020*).
5. Accessible learning. Chat GPT can make education more accessible by providing resources and support to learners who cannot access traditional learning materials (*Terwiesch, 2023*). Chat GPT uses a dialogue interface to bridge the gap between learners and educational resources, regardless of their location or background.

For example, at present the most popular artificial intelligence tools used by students when learning foreign languages are text recognition and analysis services (e.g. voice assistants, chatbots, online translators, services for checking spelling, punctuation, grammar and text stylistics). A great number of chatbots help students to develop productive foreign language speech activities: writing and/or speaking. The use of chatbots contributes to the development of students' oral and written interaction of students both in and out of class time. Oral interaction with a chatbot promotes the development of skills of expressing one's thoughts and understanding the interlocutor, and written interaction promotes the development of writing and reading skills. It should be noted that when interacting with chatbots, students develop receptive and productive foreign language speech skills.

Thus, artificial intelligence tools help to facilitate the professional activity of a foreign language teacher, reducing the time for preparing for classes, developing and checking assignments. They allow to organise the learning process, make it more personalised and motivate students in learning a foreign language.

7. Conclusions

Thus, we can say that when AI is fully integrated into the educational process, the challenges of learning will reach a new level. Feedback, personalisation of learning, adaptation to everyone's needs will have a significant impact on learners. By turning to the algorithms used by artificial intelligence, teachers have the opportunity to do their work even better. The options for using AI for class preparation, course creation, and planning are only limited by the imagination of the instructor and their willingness to experiment with different requests. By using AI technologies in language learning, the process of receiving feedback is accelerated, allowing learners to define their own goals and follow a personalised learning programme.

Currently, higher education institutions are utilising AI technologies in the foreign language teaching process. Higher education institutions need to realise the range of opportunities and challenges that will become relevant with the introduction of AI. It is important to carry out research to identify new roles of the teacher in the teaching process. AI cannot completely replace the lecturer and interpersonal contacts in a real situation. The teacher is also a mentor, helping to choose an adequate response to different situations in the process of communication

in a foreign language. The teacher is a guide to the world of culture of the nation whose language he teaches.

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