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THE ROLE OF AI IN VARIOUS ASPECTS OF LANGUAGE LEARNING

Abstract: *in our modern era artificial intelligence is developing rapidly. It has affected many areas of our lives and opened up new perspectives that we cannot imagine our lives without using this technology. Its applications in the field of language learning are particularly noteworthy. Our main goals and objectives in the article were to investigate the history and development of artificial intelligence, its role in various aspects of language learning, and the importance of artificial intelligence tools.*

Keywords: *artificial intelligence, language learning methods, AI tools, language learning experiences.*

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РОЛЬ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В РАЗЛИЧНЫХ АСПЕКТАХ ИЗУЧЕНИЯ ЯЗЫКА

Аннотация: *автор статьи отмечает, что в современную эпоху искусственный интеллект стремительно развивается. Он повлиял на многие сферы нашей жизни и открыл новые перспективы, без которых мы не можем представить свою жизнь. Особого внимания заслуживает его применение в области изучения языков. Основными целями и задачами статьи были исследование истории и развития искусственного интеллекта, его роли в различных аспектах изучения языков и важности инструментов искусственного интеллекта.*

Ключевые слова: *искусственный интеллект, методы изучения языков, инструменты ИИ, опыт изучения языков.*

In recent years, living and working with artificial intelligence has changed the way we live. Language teaching and learning involves the use of artificial intelligence technologies such as, natural language processing (NLP) and machine learning (ML) to support language acquisition. Language learning platforms powered by artificial intelligence can provide learners with personalized and adaptive learning experiences that meet their individual needs and learning styles, and it has many benefits in this area. Some of the most important benefits can be listed as examples:

For many years, people have been working on the idea of creating an artificial brain – robots. In 1921, the Czech playwright K. Čapek presented the idea of «artificial people» whom he called robots in his science fiction play «Rossum's Universal Robots». In 1929, Japanese professor M. Nishimura created the first Japanese robot called «Gakutensoku», and in 1949, computer scientist Edmund Callis Berkeley published his book «Giant Brains or Thinking Machines», comparing new models of computers with the human brain. The 1950s and 1960s were a period of increased interest in artificial intelligence. Alan Turing published «Computing Machines and Intelligence», which resulted in the Turing Test, which experts use to measure computer intelligence. The period of AI's maturity spanned the years 1957–1979, and is considered a period of struggle for AI research. John McCarthy (1958) created the first programming language for artificial intelligence research, LISP-1 (short for List Processing), which is still used and popular today. In 1968, Soviet mathematician Alexei Ivakhnenko published his new research paper, «Methods of Data Management», which later became known as «Deep Learning». 10 years later, in 1979, the American Association for Artificial Intelligence, now known as the Association for the Advancement of Artificial Intelligence (AAAI), was founded.

Interest in artificial intelligence began to grow starting in the 1980s. Deep Learning techniques and the use of Expert Systems became more popular. Since 2006, companies such as Twitter, Facebook and Netflix have started using AI as part of their advertising and user experience algorithms. Apple released the first popular virtual assistant, Siri, in 2011. In 2019, Google AlphaStar achieved Grandmaster in the video game StarCraft 2, beating all but 2% of human players. OpenAI began beta testing

GPT-3, a model that uses Deep Learning to generate code, poetry, and other language and writing tasks, in 2020. In 2021, OpenAI developed DALL-E. It can process and understand enough images to create accurate captions, bringing AI one step closer to understanding the visual world. Language learning through AI manifests itself at different levels of language. Some of the most important areas are:

Pronunciation: AI-powered language learning tools have the ability to analyze the learner's pronunciation and provide feedback on how to improve it. *Vocabulary:* AI can also help learners acquire new vocabulary by providing personalized word lists and exercises, analyze texts, and provide translations for unfamiliar words. *Grammar:* AI can analyze the learner's writing and provide feedback on grammar and syntax. This is especially useful for learners trying to improve their writing skills. *Conversation:* AI-powered language learning platforms provide learners with partners who speak the target language, and these partners can often communicate using pronunciation, grammar, and vocabulary.

So what does the future of AI in language teaching and learning promise?

1. Virtual reality (VR) is advancing the language learning environment. It can provide immersive language learning experiences that simulate real-world scenarios.
2. The development of chatbots that can assist language learners. These chatbots have the ability to provide instant feedback to learners on their writing, grammar, and vocabulary usage, as well as answer questions and provide language practice. They allow learners to practice speaking, listening, and comprehension skills in a natural and interactive way. AI enables learners to accelerate their language learning through dynamic, engaging, and efficient tools. AI is a field of artificial intelligence that enables computers to understand, interpret, and create human language. It involves the development of algorithms and models that enable machines to process and understand natural language data such as, text and speech. These techniques allow computers to extract meaning, sentiment, context, and relationships from text data, facilitating tasks such as, language translation, analysis, text generalization, chatbots, and language creation. It plays a key role in a variety of applications, driving advances in language-

related technologies, and enabling more effective communication between humans and machines.

While AI is an incredibly valuable tool for language acquisition, it also has some drawbacks. For example, over-reliance on AI-based language learning platforms can diminish the importance of human social interaction, affect communication skills, and cultural understanding. On the other hand, over-reliance on these platforms can lead to the displacement of traditional teaching methods or teachers, potentially limiting diverse teaching approaches and personalized learning experiences. There is also the issue of reliance on technology and technical issues. Technical, system failures, or lack of access to technology can disrupt learning experiences, especially for students in underserved areas or with limited resources. While AI-based language learning tools offer great potential, inequalities in access to technology and high-quality resources can exacerbate educational inequalities and create a digital divide among learners. The power of AI for language learning, when used wisely and with common sense, is undeniable. Just as the rise of online education revolutionized the language learning process, advances in AI technology can be seen as a new turning point. Learning languages with AI is becoming increasingly commonplace as it provides a variety of useful functions. Admittedly, the wide range of AI language models can be confusing. GPT-3 – Claimed to be the largest AI language model developed by OpenAI as of 2020, it is powered by approximately 175 billion parameters. The tool allows language learners to practice dialogues and responses, and such practice helps improve verbal communication skills, increasing the ability to understand and respond to real-life scenarios.

BLOOM – (BigScience Large Open-science Open-access Multilingual Language Model) is the largest open-source AI model and one of the newest models. GPT-3 is designed to bridge the gaps with BLOOM, which is an industry leader and opens a new path for AI developers. The tool is multilingual, working with 46 natural languages and 13 programming languages. By interacting with BLOOM, language learners can also improve their language structures. The tool can provide information about cultural nuances, idioms, and expressions in the target language. Understanding these aspects is crucial for effective communication and integration into a language community.

LaMDA, which stands for Language Model for Dialogue Applications, was introduced by Google. It is designed to hold free-flowing, open conversations on a wide range of topics and designed to make conversations more natural and dynamic with artificial intelligence models. Google claims that LaMDA is different from other AI models because it has been trained on dialogue. While LaMDA's main focus is on improving speaking skills, its applications in language learning can include creating interactive and engaging dialogue scenarios for learners. It can help users practice speaking skills, understand contextual nuances, and receive feedback on their language use. Machine Translation Natural Language Generation (MT-NLG) – is associated with machine translation and natural language generation tasks. In the language learning process, machine translation models such as MT-NLG can help learners understand and translate text between different languages. This integration of AI in language teaching can be useful for students who want to learn materials in a language they do not fully understand. AI is already changing the way we learn languages. With the ability to deliver personalized, efficient, and engaging language learning experiences, AI-powered language learning tools are revolutionizing the way people learn new languages. It enables computers to extract meaning, mood, context, and relationships from text data, facilitating tasks such as language translation, analysis, text generalization, chatbots, and language creation. It plays a key role in a variety of applications, powering advances in language-related technologies, and enabling more effective communication between humans and machines. AI is integrating game elements into language learning, making it engaging and fun. For example, apps use game-like features such as quizzes, challenges, and rewards to motivate learners and keep them interested in practicing the language.

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