Intellectual Thinking and Technology the Use of Artificial Intelligence in Achieving Efficiency Place

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Abstract

This article analyzes the opportunities and limitations of artificial intelligence (AI) technologies in language learning. In the context of globalization and digital transformation, learning languages is becoming a key factor in personal development and increasing competitiveness in the labor market. In recent years, AI platforms such as Duolingo, ChatGPT, and Replika have been offering alternative approaches to traditional educational methods. These technologies play an important role in accelerating the learning process, enhancing motivation, and enabling personalized learning experiences. However, their use reveals limitations in developing socio-cultural competence, real-life decision-making, and empathy. This study compares the knowledge, thinking abilities, and motivation of groups who learned independently through AI tools versus those who received traditional education. The results show that while AI platforms are effective in developing grammar and vocabulary skills, they struggle with real communication and social adaptation. This highlights the essential role of human factors, especially the teacher's involvement, in achieving educational effectiveness.

Keywords: artificial intelligence, language learning, traditional education, motivation, grammar, social competences, communication.

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As a result of the process of globalization and the rapid development of digital technologies, mastering a foreign language is becoming one of the main factors in increasing a person's intellectual potential, expanding their cultural horizons, and ensuring their competitiveness in the labor market. In particular, in recent years, educational platforms developed based on artificial intelligence (AI) technologies — Duolingo, ChatGPT, Replika and similar modern programs - offer completely new, innovative approaches to the language learning process. These platforms have a number of advantages over traditional teaching methods: they provide the student with fast, accurate and automated feedback based on an individual approach, offer learning modules and exercises that adapt to the user's needs. Also, the interactive environment, the widespread use of visual and audio tools available in these tools make the language learning process not only effective, but also interesting and motivationally stimulating. In addition, since such platforms operate completely online, it is possible to receive education at any time and place, which supports the independent learning process. The growing interest in this form of

education, especially among modern youth, also shows how relevant SI technologies are in today's digital age . However, the regular, that is, uncontrolled and without proper pedagogical guidance, use of these technologies can cause some serious problems. In particular, the necessary for in-depth study of the language There is a risk that important competencies such as independent thinking, critical analysis, social experience through real communication, and adaptation to society (social adaptation) will not be sufficiently formed. Because artificial intelligence tools are often limited to automatically delivering information and providing feedback based on tests. The human factor, that is, processes such as live communication, emotional reactions, and receiving social signals, are left out. Therefore, this article will analyze in detail the differences between students who learn a language independently through artificial intelligence-based platforms and students who learn under the guidance of a teacher in a traditional classroom. In particular, the differences in the depth of knowledge, the level of development of thinking skills, and internal motivation for learning will be studied. The results of this analysis will more clearly demonstrate the capabilities and limitations of artificial intelligence tools . At the same time, it will become possible to assess the role of the human factor in the educational process .

Literature review. Studies on the role of artificial intelligence in education mainly show the effectiveness of AI technologies in the language learning process. M. Azimova and H. Reynders in their works emphasized the usefulness of platforms such as Duolingo in strengthening grammar and vocabulary. However, R. Ustyuzhanina and Liu criticized these technologies, emphasizing the lack of human factors - empathy, cultural context, and live communication. Taking this into account, this work analyzes the success of AI tools in education and their limitations.

Research methodology. The study involved two groups: one that learned independently using SI platforms, and the other that learned in traditional classes with the participation of a teacher. Each group consisted of 15 students, who were assessed on the same topics for two months. The analysis examined the levels of grammar, communication, and motivation.

Analysis and results. The results of the study show that the SI group achieved high results in grammar and vocabulary, but had difficulties in real communication and social adaptation. The traditional group achieved high results in verbal expression and communication, but had more grammatical errors. The level of motivation was initially high in the SI group, but decreased over time, while the motivation in the traditional group remained stable.

Conclusions and recommendations. The results of the study show that artificial intelligence tools can be effective in language learning, especially in the form of independent learning. However, they are not enough to form social and communicative competencies. Therefore, the most effective approach is a hybrid model, combining traditional education with AI-based tools. Teachers should use AI tools as an auxiliary resource, but try to form the student as an active participant, while maintaining live communication. In the future, education should develop in cooperation between technology and people.

The potential of artificial intelligence tools in language learning . In today's digital age, the field of education is changing rapidly, and artificial intelligence (AI) technologies are becoming a central element of this process. In particular, in the process of mastering a foreign language, AI tools offer innovative approaches and serve to create new, effective models that differ from traditional methods. Such technologies are not limited to just providing information, but also provide the ability to process this information, analyze it, adapt to the user, and personalize the learning process.

In particular, platforms powered by Natural Language Processing (NLP) automatically analyze a student's vocabulary, grammar, and language expression skills and offer personalized learning courses based on them. This creates a dynamic system that adapts to each user's knowledge, learning pace, and needs, unlike the traditional "one-size-fits-all" education model .

The Duolingo platform, for example, automatically selects a set of interactive exercises according to the user's level of knowledge. It analyzes the learner's mistakes, offers more exercises at the points that cause

the most difficulty, and constantly encourages successful steps. This process not only consolidates knowledge, but also increases interest in learning .

ChatGPT simulates a real-time conversational environment. It helps to increase the fluency, coherence, and meaningfulness of speech by conducting an artificial conversation with the user. This in itself is considered important in language learning, since the skill of live communication is one of the highest levels of language proficiency. ChatGPT answers the user's questions, explains misunderstandings, and even encourages them to think about new topics.

Replika use artificial intelligence to engage in empathetic communication with people. The platform focuses not only on grammar or vocabulary, but also on factors such as understanding the emotional aspects of communication, expressing attitudes, and providing moral support. This helps build real-life social communication skills, especially important for young students and users who are prone to social isolation.

Thus, the opportunities offered by artificial intelligence tools not only automate the learning process, but also individualize it and make it more interesting. and psychologically comfortable environment. Through them, students will not only have the opportunity to learn independently, but also to study at any time and place. In addition, gamification on artificial intelligence platforms, that is, basing learning on games, plays an important role in increasing student motivation.

At the same time, it should not be forgotten that while these tools open up new opportunities in education, they cannot completely replace the human factor.

These tools certainly seem effective and convenient for individual learning, as they adapt to the user and offer courses and exercises designed for an individual with a single learning level. Such systems serve to accelerate learning and effectively develop an individual's basic language skills such as writing, reading, and listening. However, it is felt that these technologies have a number of limitations in providing a deep educational approach and social integration.

In the educational process, it is possible to limit information to a purely automatic assessment-based approach, but this methodology may not take into account specific social relationships, cultural context, psychological state, and live communication. For example, important components such as empathy, real cooperation with the student, and the process of helping are often not processed in a specific way by artificial intelligence. In addition, if communication errors or social signals are not fully detected in the educational process mastered with the help of artificial intelligence, problems may arise in verifying and understanding the student's real knowledge.

Since the human factor does not help in the process of social adaptation and cultural integration, the possibility of organizing interactive and empathetic communication is limited. This is especially important for a person learning a language - at the same time, students face shortcomings in understanding the cultural and social signs of themselves or their environment. Without developing the skills of live communication, confidence and psychology in communication, and social relations in society, this type of technological tools is limited in its most effective use.

Artificial Intelligence and Traditional Education: A Comparative Analysis. This study involved two types of students. The first group consisted of young people who were self-directed learning through artificial intelligence platforms, and the second group consisted of students who participated in traditional learning methods, that is, in live classes with a teacher. Both groups consisted of 15 students, and each of them was tested on the same topics and assessment criteria during the learning process.

During the study, both groups were given the same topics and their language proficiency, communication skills, accuracy in grammatical rules, and fluency in speech were assessed. The students completed various exercises and exercises based on the tools and methods used in the study.

In the group that learned through artificial intelligence platforms, the results focused on exercises that were automatically given and based on rapid assessment, adapted to the individual level of each student.

This group achieved high results in grammatical and lexical exercises, but real communication and social adaptation processes caused more problems. Since the technologies did not take into account the full social context, the spiritual and emotional approaches of the users were not sufficiently developed.

The traditional group, on the other hand, focused on close interaction with the teacher, real-life situations, and social skills. The results of this group were higher in terms of being active in communication, social interactions, and the ability to express opinions on the subject. However, due to the high number of grammatical and lexical errors, their level of language accuracy was lower than those who learned through artificial intelligence.

The results of the study showed that the group that learned the language through SI platforms showed high results in completing grammatical tasks. However, this group had difficulties in real communication and social situations. Although the students mostly completed the proposed exercises automatically, they had problems communicating in a social context. Although they were mostly able to give grammatically correct answers, they found it difficult to understand each other and express their thoughts vividly in real-life conversations. This is primarily due to the fact that artificial intelligence tools do not provide sufficient communicative components based on human factors.

the traditional education group, on the contrary, communication experience, expression of thoughts through language, and Social engagement was high. Students engaged in physical interaction with each other, exchanging ideas and discussing, and deepening their language acquisition. They also showed significant progress in social interaction and understanding the cultural context of language use. However, this group may have made relatively more grammatical errors, as some grammatical rules and structural aspects may not have been identified or fully understood and demonstrated during real-time interaction with the teacher.

In terms of motivation, the motivation in the SI platform group was initially very high, as students saw results automatically in a short period of time and the system was constantly changing and interesting with new exercises. However, over time, motivation decreased, and the goals and results presented to students looked the same, and there were no effective mechanisms to arouse new interests.

In the traditional group, however, motivation remained stable because the teacher's constant encouragement, assistance in overcoming difficulties, and real-time discussion of successes and mistakes encouraged students to continue.

This situation undoubtedly affects the technical efficiency of SI tools. Despite this, human factors — especially the role of the teacher — are crucial in education. The teacher's emotional support, encouragement, and analytical approach ensure students' motivation, their interest in learning, and their success in achieving high results. Artificial intelligence tools are only technical assistants and cannot replace real education in a social and pedagogical context.

Human Factor and Educational Efficiency. Language learning is a complex process that involves not only the acquisition of grammar and vocabulary, but also cultural, social and emotional factors. Artificial intelligence platforms, such as Duolingo, ChatGPT or Replika, certainly offer effective approaches to language learning. However, these technologies are focused only on the development of cognitive abilities and are limited in fully taking into account the socio-emotional and cultural aspects of a person. These tools allow the user to consolidate knowledge through interactive exercises, grammar analysis and automatic responses, but they cannot take into account the personal needs, emotions and cultural specificities of a person in the learning process.

The teacher plays an important role in the learning process, not only as a transmitter of knowledge, but also as a psychological assistant, social guide, and an important person who helps develop critical thinking. The role of the teacher is especially important in helping the student to understand himself, understand his needs, and express his thoughts. Taking into account the individual characteristics of each student, the teacher can stimulate them, increase their internal motivation, and also provide the

psychological support necessary to achieve the best results . This, in turn, develops not only information, but also communicative and social skills in the process of language acquisition.

According to sociocultural theory, education is realized through social interaction. According to this theory, the learning process is strengthened in social interaction, that is, students deepen their knowledge by exchanging experiences, expressing their opinions and understanding each other. This theory also explains the zone of proximal development of the individual, emphasizing that students should move with the help of a teacher to a level slightly above their current level of knowledge, but not yet reached. This process involves social and emotional interactions that are difficult to fully provide for artificial intelligence.

Since SI tools cannot fully provide this communication, the human factor cannot be left out of the educational process. Technologies can certainly help make education effective, but they have limitations in taking into account the social environment, cultural differences and emotional characteristics of humans. Although artificial intelligence is a valuable tool in language teaching, it should only be used with full consideration of the individual needs of students and the social learning process.

Conclusions and recommendations. Artificial intelligence tools can be a very convenient and effective tool for language learning. In particular, they automate the guidance for independent learning, adapting to the needs of each user. The individualized and fast learning process offered by these platforms meets modern requirements. At the same time, their advantage is that the user can learn at his own pace and at a convenient time, which serves to increase motivation. However, these tools also have certain limitations. Many of them, unfortunately, are not enough to provide a deep educational approach, in particular, the development of social, communicative and cultural competencies. Language learning is not only about the formation of speech, grammatical knowledge and vocabulary, but also includes the transmission of social information, understanding the cultural environment, developing empathy and communication. These aspects are not provided by artificial intelligence tools alone.

The most effective approach, according to the research, is a hybrid model . That is, the combined use of traditional teaching methods and artificial intelligence-based tools. This allows teachers to use artificial intelligence platforms as an auxiliary resource, but should not allow their role to be downplayed. Teachers should maintain a lively dialogue, work directly with the student and ensure his active participation.

Thus, the education of the future will be based on a fruitful collaboration between technology and man. In this process, human dignity, cultural awareness and lively dialogue will always be a priority. Education should not only be aimed at teaching scientific knowledge, but also at developing the social, cultural and psychological aspects of man.

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