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NEGATIVE EFFECTS OF LEARNING A FOREIGN LANGUAGE USING ARTIFICIAL INTELLIGENCE ON THE MINDS OF STUDENTS

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Abstract: This article examines the negative cognitive impacts of using artificial intelligence (AI) tools, such as chat bots and language apps, in foreign language learning on students' minds. It highlights issues like memory weakening, attention deficits, reduced critical thinking, over-reliance, and lack of human interaction. Recommendations for balanced use are provided to mitigate these risks.

Keywords: AI language learning, cognitive offloading, memory retention, attention span, critical thinking decline, over-reliance on technology.

Introduction

Artificial intelligence technologies, including Duo lingo, Chat GPT, and other language-learning applications, provide students with opportunities to learn foreign languages in a personalized and convenient way. However, excessive reliance on these tools may have a negative impact on students' cognitive development, as they can weaken natural cognitive processes. For example, research conducted at MIT shows that students remember essays written with the help of AI less well than those they write themselves, which indicates weaker memory encoding. This article examines the impact of AI on students' attention, memory, creativity, and critical thinking, and proposes balanced solutions.

Impact on memory and retention

AI language applications provide students with ready-made answers, leading to the "offloading" of memory, as a result of which new information is not stored in long-term memory. For instance, students who write essays using Chat GPT remember the content 25% less, because instead of actively engaging the brain, they rely on AI. This phenomenon is similar to the "Google effect," where students remember not the information itself, but where to find it. Consequently, foreign-language vocabulary and grammar are poorly acquired by learners, since repetitive practice is automated by AI.

In the student context, although online applications are widespread, this process weakens independent learning and causes memory problems during examinations. Research confirms that when AI is used only as a supplementary tool, memory improves, but when it becomes the primary source, its effects are negative.

Impact on attention and focus

AI chat bots provide instant responses, which shortens students' attention spans, as they tend to skim superficially instead of thinking deeply. EEG measurements show that students' brain activity (alpha and theta waves) is weaker when using AI, indicating lower levels of

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attention. In language learning, this limits speaking practice, since AI does not perceive emotional nuances. Among younger students, the habit of saying "Hey AI, do it" develops, increasing multitasking and distraction. Among learners, addiction to mobile applications can reduce attention span to 10–15 minutes.

Type of Impact	Example	Result
Short-term attention	Instant translation	Lack of deep understanding
Long-term attention	Daily automated exercises	Decreased engagement

Decline in Critical Thinking

By providing ready-made texts, AI makes students passive, resulting in a weakened ability to think critically. In language learning, this leads to a failure to understand contextual meaning, as AI delivers standardized answers. Studies show that students in AI-assisted groups often copy essays without reviewing them. Creativity is also affected: since AI corrects grammar, students lose their individual writing styles.

Overdependence on AI

Excessive reliance on AI reduces learners' independence, and students become unable to study without a human teacher. This leads to "metacognitive laziness." In language learning, difficulties arise during real-life conversations. Psychologically, AI does not provide emotional support, which can increase feelings of isolation.

In lack of human interaction the absence of human interaction means AI cannot perceive cultural and emotional nuances, leaving students unprepared for real communication. This weakens social skills and makes global integration more difficult for language learners.

In cultural and emotional effects AI normalizes language use, reducing cultural diversity. Emotionally, difficult tasks may increase stress, and students may experience fear and decreased motivation.

Maintaining a balance between the benefits and drawbacks of AI in language learning. The benefits of artificial intelligence in language learning (such as personalization and continuous practice) can be balanced with its drawbacks (memory weakening and lack of human interaction). To maximize the benefits, use AI for personalized practice: Duo lingo or Chat GPT can provide tasks tailored to your level, quickly improving speaking skills and vocabulary. Spend 10–15 minutes a day in a "monolingual mode," communicating only in the target language to ensure immersion. As a result, motivation and learning outcomes increase.

Reducing the Drawbacks. Avoid overdependence: use AI only 3–4 days a week for no more than 20 minutes per session; after each session, write or speak independently. To strengthen critical thinking, review, evaluate, and modify AI-generated responses instead of accepting them as they are.

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Integrating human interaction

Use AI together with teachers or learning partners: engage in real conversations twice a week (for example, via Hello Talk). Teachers can explain cultural nuances, while AI supports repetitive practice.

Strategy	Benefit	Addressed Drawback
Session modes (prep, practice, review)	Efficient practice	Prevents loss of attention
Weekly plan (AI + human)	Holistic development	Reduces dependency on AI

Practical recommendations

- **Beginner level:** Use AI for vocabulary building and grammar practice.
- **Intermediate level:** Engage in conversation simulations.
- **Advanced level:** Participate in debates with AI.

In the future, a blended model combining AI and traditional classroom instruction may become widespread in schools across Uzbekistan.

Recommendations

- Use AI as a supplementary tool.
- Integrate AI use with a human teacher.
- Make memory-training exercises mandatory.

Conclusion

The rapid integration of artificial intelligence into foreign language education has fundamentally transformed the learning process, offering unprecedented opportunities for personalization, accessibility, and efficiency. Tools such as Chat GPT, Duo lingo, and other AI-powered language applications enable learners to practice anytime and anywhere, adapt materials to their proficiency levels, and receive instant feedback. These advantages make AI an attractive and powerful supplement in modern language learning environments, particularly in contexts where educational resources or qualified instructors may be limited.

However, as this study has demonstrated, the uncritical and excessive use of AI technologies also poses significant cognitive, psychological, and pedagogical risks. Overreliance on AI can weaken essential cognitive processes such as memory encoding, sustained attention, critical thinking, and creative language production. When learners depend on ready-made answers, automated translations, or instant corrections, their brains engage less actively in deep processing, which leads to shallow learning and reduced long-term retention. Furthermore, the lack of emotional awareness and cultural sensitivity in AI systems limits learners' ability to develop authentic communicative competence, particularly in real-life social and intercultural interactions.

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From a psychological and social perspective, the absence of meaningful human interaction in AI-based learning environments may contribute to learner isolation, reduced motivation, and increased stress. Language learning is not only a cognitive activity but also a social and cultural process that requires empathy, emotional exchange, and contextual understanding—elements that AI cannot fully replicate. As a result, students who rely solely on AI may struggle with spontaneous conversation, pragmatic language use, and social integration in global contexts.

Therefore, this paper emphasizes the necessity of a balanced and pedagogically informed approach to AI integration in language education. Artificial intelligence should function as a supportive and supplementary tool rather than a replacement for human teachers and peer interaction. Combining AI-assisted practice with traditional classroom instruction, real-life communication, memory-based exercises, and teacher guidance can help preserve cognitive development while maximizing the benefits of technology. Structured usage models—such as limited session durations, reflective review tasks, and critical evaluation of AI-generated content—can further reduce the risks of dependency and metacognitive laziness.

In conclusion, while artificial intelligence has the potential to enhance foreign language learning, its effectiveness ultimately depends on how it is used. A human-centered, cognitively balanced, and culturally sensitive model of AI integration is essential for sustainable learning outcomes. Future research should focus on developing learner-specific AI models, particularly for different age groups and educational contexts, including the Uzbek education system. Such research will be crucial in ensuring that technological innovation supports not undermines the intellectual, emotional, and social development of language learners.

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