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## **PEDAGOGICAL CONDITIONS FOR THE USE OF ARTIFICIAL INTELLIGENCE IN THE EDUCATIONAL PROCESS**

The digital transformation of education highlights the issue of preparing teachers to use modern technologies, including artificial intelligence. In pedagogy, AI is considered not only as a technical tool but also as a means of optimizing the learning process, increasing its individualization and effectiveness.

According to research by international organizations, the implementation of AI in education contributes to the development of adaptive learning and improves the quality of educational outcomes; however, it requires consideration of pedagogical principles and values such as the humanization of education and learner agency [4]. Modern scholarly works emphasize that AI should be viewed not as a replacement for the teacher, but as a tool for enhancing the educational process [3]. Thus, studies in higher education show that most participants in the educational process consider AI as a supplement to the teacher's activity rather than a replacement [2]. The study was conducted in eight universities in Hong Kong. All of them are public institutions with English as the language of instruction. The number of students ranges from 3,000 to 22,000 people. Most students are local residents.

The results of the study showed that both students and teachers provided meaningful information. The assessment was carried out using a Likert scale. Overall, the data indicate that participants assess differently the possibility of

replacing the teacher with AI. The analysis of open-ended responses made it possible to identify three main categories:

- AI replaces the teacher;
- AI works together with the teacher;
- AI opposes the teacher.

This reflects different views on the role of AI in the educational process. The results show a complex and ambiguous picture of the future of education. Generative AI is capable of:

- improving lesson planning;
- increasing teaching effectiveness;
- developing students' research skills;
- providing personalization and rapid feedback.

Differences in the perception of AI were identified:

- students are more open to its use;
- teachers express concerns (dependence, decline in the quality of education).

Limitations include: a small sample size, limited representativeness, and the need for further cross-cultural research.

The study by Cecilia Ka Yuk Chan and Louisa H.Y. Tsi showed that students perceive generative AI more positively than teachers. However, both groups agree that AI is not capable of replacing the human qualities of a teacher that are necessary for the development of learners' personalities. Thus, there is a need to determine pedagogical conditions that ensure the effective and methodologically grounded use of AI in the professional activity of teachers and instructors.

Let us highlight the following 10 pedagogical conditions for the use of AI in the educational process, which we consider relevant at the current stage of e-learning development [1; 5]:

1. **Didactic appropriateness in the teacher's activity.** The use of AI should correspond to the goals of teaching and education. In the professional activity of a teacher, it is important to:

- correlate AI with educational outcomes;
- take into account the age and psychological characteristics of students;
- choose methods that enhance understanding rather than simplify learning.

2. **Methodological integration of AI into the educational process.** AI does not replace the teacher but serves as a tool for automating processes, preparing materials, creating virtual simulators, and analyzing learning outcomes, which requires the development of new teaching methodologies. For the teacher, it is important not simply to use AI but to integrate it competently into teaching methodology:

- development of assignments using AI;
- use of AI to explain complex topics;
- organization of students' independent work.

AI should become part of pedagogical technology rather than an episodic tool.

3. **Formation of professional ICT and AI competence of the teacher.**

A modern teacher must possess:

- skills in working with digital educational resources;
- the ability to use AI to prepare teaching materials;
- the ability to critically evaluate AI outputs.

This becomes part of the professional standard of a teacher.

4. **Development of learners' independence.** The educational process should be aimed at developing skills that AI cannot fully replace, namely critical thinking, creativity, interaction, and socio-emotional development. The teacher should structure the process so that AI:

- supports rather than replaces thinking;
- stimulates analysis, comparison, and argumentation;
- contributes to the formation of learning autonomy.

5. **Organization of pedagogically appropriate feedback.** AI can be used for:

- knowledge diagnostics;
- identification of typical errors;
- prompt feedback.

However, the teacher plays a key role in interpreting the results and adjusting instruction.

6. **Personalization and differentiation of learning.** AI should be used to adapt learning materials to the individual needs of each student, creating differentiated tasks. In pedagogical practice, AI allows:

- adapting tasks to the students' level;
- taking into account the pace of material assimilation;
- building individual educational trajectories.

7. **Accessibility and inclusivity.** AI should be used to ensure equal access to education for all, including students with disabilities, special needs, visual, hearing, or mobility impairments:

- text-to-speech allows people with visual impairments to “read” content;
- speech-to-text helps people with hearing impairments or those who cannot type;
- image captioning: AI describes what is in an image, which is critical for visually impaired users.

8. **Compliance with pedagogical ethics and values.** The implementation of AI involves declaring cases of its use, protecting personal data, avoiding bias, and fostering a responsible attitude toward AI-generated information. The use of AI should comply with:

- principles of humanistic pedagogy;
- norms of academic integrity;
- requirements for personal data protection.

The teacher acts as a carrier and transmitter of these values.

9. **Rethinking the assessment system.** Teachers must have skills in working with AI tools, understand the capabilities and limitations of technologies, and teach students to critically evaluate information. In the context of AI use, the teacher should:

- shift the focus from the result to the process of activity;
- use open-ended tasks;

- assess the ability to analyze and apply knowledge.

10. **Pedagogical design of the educational environment.** AI becomes part of the educational environment, which the teacher:

- designs;
- organizes;
- adapts to learning objectives.

Based on research, publications, and personal pedagogical experience, it can be concluded that the effective use of artificial intelligence in the educational process is possible when a set of pedagogical conditions is observed.

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