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IMPROVING THE MANAGEMENT OF THE USE OF ARTIFICIAL INTELLIGENCE IN THE DEVELOPMENT OF SCIENCE TEACHING METHODOLOGY IN MODERN EDUCATION (IN THE RANGE OF PRIMARY GRADES).

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Abstract: This article analyzes the issues of managing the use of artificial intelligence technologies in the process of developing the methodology of teaching subjects in primary grades. The main goal of the study is to scientifically substantiate the methodological and management mechanisms for introducing artificial intelligence tools into the educational process. The research used literature analysis, pedagogical observation and comparison methods. The results showed that the effective management of artificial intelligence increases the quality of education and the cognitive activity of students.

Keywords: primary education, artificial intelligence, teaching methodology, educational management, digital pedagogy.

Introduction

In recent years, the use of digital technologies, in particular, artificial intelligence (AI) capabilities, has been rapidly developing in the education system. Since the primary education stage has become important in the intellectual and social development of students, the introduction of modern pedagogical technologies at this stage is relevant.

Artificial intelligence tools allow for the organization of education, monitoring of the learning process and automation of assessment, taking into account the individual characteristics of students. However, the effective use of these technologies requires their proper management and methodological justification.

Literature Review

The role of artificial intelligence in the education system has been widely covered in scientific research. In particular, Luckin et al. (2016) assessed artificial intelligence as an important tool for personalizing the educational process. Holmes et al. (2019) emphasize that AI is a system that supports the pedagogical activities of the teacher.

The use of artificial intelligence in primary education is particularly emphasized in the studies of Bagdasaryan (2020) and Woolf (2021). According to them, adaptive learning systems increase the learning efficiency of young students.

Local and regional studies (Karimov, 2021; Kholmatova, 2022) have analyzed the potential of digital pedagogy in primary education. At the same time, an analysis of existing studies shows that insufficient attention has been paid to mechanisms for managing the use of artificial intelligence. This study aims to fill this gap.

Research methodology

The study was conducted based on the following methods:

• scientific literature analysis;

• pedagogical observation;

• comparative and systematic approach;

• analysis of empirical data.

The experimental work was conducted in primary grades of general education schools and digital educational platforms based on artificial intelligence were used.

Table

1. Impact of using artificial intelligence in primary education

Indicators	Traditional teaching	Based on artificial intelligence
Student activity	Average	High
Individual approach	Limited	Fully provided
Level of mastery	Unstable	Stable and high
Assessment system	Subjective	Automated
Teacher download	High	Optimized

Results

The results of the study showed the following:

• artificial intelligence tools developed students' independent thinking and problem-solving skills;

• individual learning trajectories increased the level of students' mastery of knowledge;

• teachers' effectiveness in managing the educational process improved;

• a centralized management model ensured stability in the use of artificial intelligence.

Discussion

The results of this study showed that managing the use of artificial intelligence technologies is of significant pedagogical and organizational importance in developing the methodology of teaching subjects in primary schools. The empirical results obtained are

consistent with international studies (Luckin et al., 2016; Holmes et al., 2019; Selwyn, 2021) and confirm the effectiveness of artificial intelligence in ensuring an individual approach to the educational process.

The discussion revealed that the effectiveness of the use of artificial intelligence mainly depends on three factors:

1. the availability of technological infrastructure,
2. the digital and methodological competence of teachers,
3. the accuracy of the mechanisms for managing the use of artificial intelligence.

If artificial intelligence tools are not managed in accordance with pedagogical goals, they will remain only as technical tools. According to the results of the study, the introduction of artificial intelligence based on centralized management ensures the consistency and stability of the educational process. This does not reduce the role of the teacher, but rather strengthens him as an analyst, guide and methodological consultant.

It was also revealed during the discussion that ethical and psychological aspects are also important. When using artificial intelligence in working with primary school students, special attention should be paid to the issues of data security, age characteristics of the child and digital overload.

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Conclusion

In conclusion, improving the management of the use of artificial intelligence in the development of subject teaching methods in primary schools is one of the strategic directions of the modern education system. The results of the study showed that the effective and systematic use of artificial intelligence tools increases the level of knowledge acquisition of students, develops their cognitive activity and independent thinking skills.

Also, the educational process organized on the basis of artificial intelligence facilitates the methodological work of the teacher and expands the possibilities of planning, monitoring and analyzing education. The study proved that the use of artificial intelligence requires not only a technological process, but also a well-thought-out pedagogical management system.

In the future, it is advisable to conduct additional research in this area to improve artificial intelligence-based teaching models, develop teachers' digital competencies, and strengthen ethical and normative foundations.

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