IMPROVING SCIENTIFIC AND METHODOLOGICAL SUPPORT BASED ON THE INTEGRATION OF INNOVATIVE PEDAGOGICAL TECHNOLOGIES

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Annotation

The article will cover theoretical and practical aspects of improving scientific and methodological support based on the integration of innovative pedagogical technologies. The role of the harmonization of digital educational tools, interactive methods, a competency approach, STEAM and distance learning technologies in increasing educational quality is analyzed. Also, the advantages of the integrative approach, the impact on the qualifications of the teacher and the factors that ensure the effectiveness of the educational process are indicated.

Keywords: innovative technologies, integration, scientific and methodological support, digital education, competency approach, pedagogical methods, STEAM, distance education.

СОВЕРШЕНСТВОВАНИЕ НАУЧНО-МЕТОДИЧЕСКОГО ОБЕСПЕЧЕНИЯ НА ОСНОВЕ ИНТЕГРАЦИИ ИННОВАЦИОННЫХ ПЕДАГОГИЧЕСКИХ ТЕХНОЛОГИЙ

Аннотация

В статье освещаются теоретические и практические аспекты совершенствования научно-методического обеспечения на основе интеграции инновационных педагогических технологий. Анализируется роль цифровых образовательных инструментов, интерактивных методов, компетентностного подхода, сочетания технологий Steam и дистанционного обучения в повышении качества образования. Также будут указаны преимущества интеграционного подхода, влияние на квалификацию учителя, а также факторы, обеспечивающие эффективность образовательного процесса.

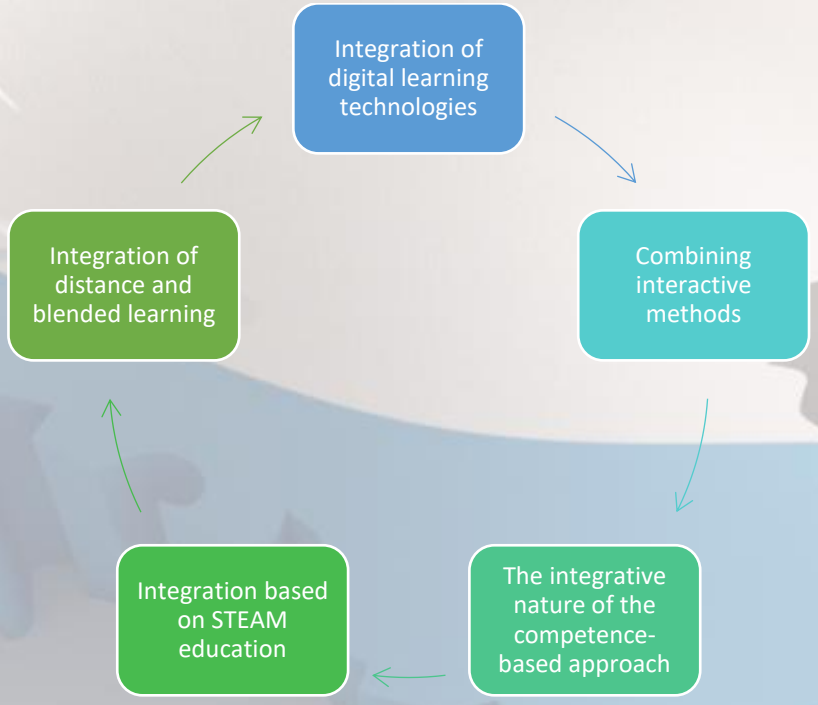
Ключевые слова: инновационные технологии, интеграция, научно-методическое обеспечение, цифровое образование, компетентностный подход, педагогические методы, STEAM, дистанционное обучение.

The introduction of innovative pedagogical technologies in the modern educational process and their integrated application take the educational system to a new level. International standards for the quality of education, digital transformation and individual needs of students require the improvement of scientific and methodological support. Today, organizing the educational process only with traditional methods does not provide efficiency. Therefore, the implementation of innovative technologies on the basis of an integrated approach is one of the pressing issues.

What is the integration of innovative pedagogical technologies?

The integration of innovative pedagogical technologies is the process of using various modern pedagogical technologies used in the educational process in a coordinated manner, as a single system.

The introduction of innovative technologies into the teaching process enhances the activities of students, increases motivation and contributes to the practical application of knowledge. Their integration is manifested in thfollowing directions:



Today, the integration of innovative pedagogical technologies into the process of teaching Natural Sciences in primary education is important in the formation of the skills of developing, observing, analyzing and experimenting with the scientific worldview of students. An integrated approach helps students perceive real-life realities in one whole case.

The teaching of primary natural sciences (environment, natural phenomena, ecology, human health) in combination with other subjects — Mathematics, native language, Fine Arts, Technology, Information Technology-increases the quality of the educational process.

The following technologies are widely used in the effective organization of natural science lessons:

The STEAM approach - science, Technology, Engineering, Art, Mathematics-harmonizes.Students create practical models of natural phenomena: water cycle, wind turbine model, etc.

Problematic educational technology - problems are laid in the lesson on the basis of questions from real life. The reader himself conducts research, conducts experiments, comes to conclusions.

Science and language integration - Nature topics are taught in English with elementary terms. This develops both directions together.

Information and communication technologies - Virtual laboratories, assignments via QR code, interactive tests, video lessons, observation with a digital microscope

Modular teaching technology-each module: goal → practical activity → reflection, in which students are more involved in independent activities.

For example, for grades 1-4, we can integrate the topic "necessary conditions for plant growth" as follows:

Integration: natural science + mathematics + IT

Activities:

- Groups experience seed germination in different conditions (light, water, heat).

- Writes a daily measurement of the growth rate in a digital table.

- Describes the results in graph terms (integration of mathematics).

- Sees animation through QR-code (IT integration).Activities:

- Groups experience seed germination in different conditionslight, water,h".

The following results are expected from the students:

- Scientific thinking, experimental skills are formed in students.
- The skills of explaining, observing and solving problems of natural processes develop.
- The skill of conscious and effective use of information technology appears.
- Through the STEAM approach, creativity and critical thinking are enhanced.

In conclusion, the integrated application of innovative pedagogical technologies will significantly enrich the classes of elementary Natural Sciences, encourage the student to actively seek and make the educational process in accordance with modern requirements. This approach directs students to science, technology and environmental literacy in the future.

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