

THE CONTENT AND METHODS OF USING INFORMATION
TECHNOLOGIES IN NATURAL SCIENCE LESSONS

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Annotation: *This article talks about the content of teaching natural sciences with new pedagogical technologies in order to increase the importance of nature, which protects people, in the minds of students.*

Key words: *nature, nature conservation, natural sciences, natural science lessons, technology, pedagogical technology, pedagogical technology in natural science.*

Аннотация: *В данной статье говорится о содержании преподавания естествознания с использованием новых педагогических технологий с целью повышения значения природы, оберегающей человека, в сознании учащихся.*

Ключевые слова: *природа, охрана природы, естествознание, уроки естествознания, технология, педагогическая технология, педагогическая технология в естествознании.*

Annotatsiya: *Ushbu maqolada insonlarni asrab turgan tabiatni maktab ta'lim muassasasida o'quvchilar ongida yanada ahamiyatini kuchaytirish uchun tabiiy fanlar nomli draslikni yangicha pedagogik texnologiyalar bilan o'qitishning mazmuni haqida so'z borgan.*

Kalit so'zlar: *tabiat, tabiatni asrash, tabiiy fanlar, tabiiy fanlar darslari, texnologiya, pedagogik texnologiya, tabiiy fanda pedagogik texnologiya.*

In the 21st century, the changes taking place in the educational process require a transformation in teachers' professional competencies. The integration of such qualities as creativity, cognition, intellect, communication, labor skills, and personal development plays a crucial role in a teacher's professional growth. In particular, a teacher's creativity is manifested in their thinking, communication, emotions, and various types of activities. According to P. Torrance, creativity involves identifying a problem or proposing a scientific hypothesis, testing and modifying hypotheses, and expressing the interrelation between knowledge and practical actions in problem-solving and decision-making.

In organizing modern lessons, teachers are required to possess a high level of professional mastery in applying new technologies. Professional qualities are also essential in organizing integrated lessons in schools. An integrated lesson is a special type of lesson that combines teaching in several subjects simultaneously when studying a particular topic or phenomenon. Such lessons differ from traditional ones due to the interrelation between the leading subject

(the integrator) and the supporting subjects, which contribute to deepening, expanding, and clarifying the material of the leading subject.

Integrated lessons fully combine various subjects and can lead to the emergence of integrative topics such as the basics of life safety or the world around us. For example, it is possible to integrate the content of several subjects while maintaining the teaching methods of the main subject. Conversely, one may preserve the content of a single subject while integrating the teaching methodologies of different subjects.

Teachers rarely turn to integrated lessons, and mainly do so in the following cases:

- When duplication of the same material is identified in curricula and textbooks;
- When there is a time constraint for studying a topic and a desire to use prepared content from a parallel subject;
- When studying interdisciplinary and generalized categories (such as motion, time, development, quantity, etc.) as well as laws and principles that encompass various aspects of human life and activity;
- When identifying contradictions in the description and interpretation of the same phenomena or facts across different subjects;
- When developing a problem-based or developmental teaching method for a subject.

In a lesson, a teacher can integrate any structural component of the pedagogical process: goals, principles, content, methods, and means of instruction. For example, within the content of a topic, any of its structural elements can be highlighted for integration – concepts, laws, principles, definitions, characteristics, phenomena, hypotheses, facts, ideas, issues, and so on. Through these elements, intellectual and practical skills and abilities are combined. Components from different subjects are merged within a single lesson, forming a system in which the learning material is organized around these integrated elements and incorporated into a new, unified structure.

When organizing a lesson, the teacher acts as the key system-forming factor, as the newly developed method and technology of lesson design depend on it. To integrate the structural components of the educational process—that is, to connect them correctly—certain preparatory actions must first be taken. During this preparatory stage, the teacher determines the following:

The motives and goals for conducting an integrated lesson; the composition of integration, i.e., the set of combined components;

The form of integration;

The nature of the relationships between the integrated materials;

The structure (sequence) of material arrangement;

The methods and techniques of presenting the material;

The ways students will process new material;

The distribution of roles among teachers of the integrated subjects;

The criteria for evaluating the effectiveness of the lesson;

The forms and types of assessment of students' knowledge during the lesson;

The stages of preparing an integrated lesson.

The teacher's motivation for using this type of lesson is determined by the contradictions identified in the educational process and the perceived need to resolve them. After setting a

clear and concise goal, the teacher selects the materials to be combined in one lesson, thus determining the composition of the integration. This is done collaboratively with the teacher of the related subject involved in developing the integrated lesson. At this stage, only the educational topics and their specific parts that form the substantive basis of integration are selected.

Of course, the teacher's knowledge of pedagogical integration—the phenomenon itself, its types, forms, structures, and implementation technologies—has a significant influence on the choice of integration form. The students' developmental level also affects their ability to combine knowledge from different subjects. In such cases, prior experience with this type of lesson is essential, and subsequent integrated lessons become easier for participants to conduct and comprehend. Once the lesson goal is defined, the integrative knowledge blocks are determined.

In conclusion, when teaching through integration, the teacher must be creative, capable of interconnecting topics, forming students' practical life skills, and providing them with sufficient knowledge to perceive the world as an integrated whole.

REFERENCES:

1. Tabiiy fanlar [Matn]: 1-sinf uchun darslik / K. Suyarov [va boshq.]. - Toshkent: Respublika ta'lim markazi, 2021. - 88 b.
2. Avliyakov N.X., Musayeva N.N. Pedagogik texnologiya. Darslik. Toshkent 2022y.
3. Polyankina S.Yu. Ta'lim falsafasining kategorik apparatida integratsiya tushunchasi. Falsafa va ta'lim №2, 2013.
1. Халилова, Х. Т. (2020). Особенности использования возможностей информационных и коммуникационных технологий в учебном процессе по географии. *Science and Education*, 1(9), 380-387.
2. Mirzaxmedovich, B. K., & Teshayeva, K. K. (2021). Fergana valley distribution landscapes establishment and exploration. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(8), 286-289.
3. Xalilova, X. T., & Umarova, N. A. (2022). Geografiyani o'qitishda matematik savodxonlik. *Academic research in educational sciences*, 3(1), 786-789.
4. Охунбоев, М. И., & Халилова, Х. Т. (2020). ДИФФЕРЕНЦИАЦИЯ В ПРОЦЕССЕ ОБУЧЕНИЯ. *Интернаука*, (47-1), 70-71.
5. Хакбердиев, О. Э., Халилова, Х., & Алихўжаева, Б. (2018). Влияние эрозии на урожайность пшеницы. *Символ науки*, (5), 69-71.
6. Халилова, Х. Т. (1994). Проблемы территориальной организации пригородного сельского хозяйства г. Самарканда.
8. Nayitov, A., & Azizova, S. (2022). Abu nasr farobiyning "fozil odamlar shahri" asaribugungi kun yoshlarining ma'naviyat maktabi sifatida. *Science and innovation*, 1(B7), 432-438.



9. Hayitov, A. I., & Azizova, S. (2023). Abdulla avloniy darsliklaridagi axloqiy sifatlar tahlili. In Proceedings of International Conference on Educational Discoveries and Humanities (Vol. 2, No. 3, pp. 101-105).

10. Hakimov, F. N., & Ahmadova, G. N. (2025). THE CURRENT ROLE AND IMPORTANCE OF DISTANCE EDUCATION IN BEGINNER CLASSES. SCIENTIFIC APPROACH TO THE MODERN EDUCATION SYSTEM, 3(34), 95-98.

11. Norboy o'g'li, H. F. (2024, March). Raqamli Ta'lim Jarayonini Elektron Muhitda Qurishning Psixologik-Pedagogik Jihatlari. In International Conference on Linguistics, Literature And Translation (London) (Vol. 1, pp. 56-58).