



ORGANIZING PRIMARY SCHOOL “NATURAL SCIENCES” LESSONS BASED ON MODERN TEACHING METHODS

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ABSTRACT	KEY WORDS
This article discusses the role and effectiveness of modern teaching methods in delivering the “Natural Sciences” subject to primary school students. It highlights the importance of interdisciplinary integration, the STEAM approach, digital technologies, experiments, and practical activities. The paper also explores methods for developing students’ thinking skills, engaging them in active learning processes, and fostering a conscious attitude toward nature.	Natural sciences, primary education, modern methods, interactive approach, STEAM, digital technologies, project-based learning, observation skills.

INTRODUCTION

Today, the education system is considered one of the most vital areas in society. In the era of globalization and digital transformation, one of the key priorities of modern education is developing students’ worldview, thinking, and practical skills. From this perspective, the subjects taught at the primary education level—especially the “Natural Sciences” course—play a crucial role in the intellectual and emotional development of students.

Nature is the Greatest Teacher. It teaches children to think, reason, and observe through its laws, diverse phenomena, and living beings. A primary school student naturally feels emotionally close to nature. Therefore, these lessons are not only a means of imparting knowledge but also serve as tools for moral, aesthetic, and environmental education.

To organize meaningful “Natural Sciences” lessons in general secondary schools, the following aspects should be taken into account:

1. The Purpose of Teaching Natural Sciences in Primary Grades

The main goal of the “Natural Sciences” subject is to form students’ initial understanding of the surrounding environment, develop their skills in observing and analyzing phenomena and processes, and instill a culture of conscious and proper interaction with nature.

Lessons should be effectively organized in the following directions:

- Formation of scientific inquiry skills;
- Teaching the basics of research;
- Developing observation skills, logical thinking, and reasoning;
- Encouraging environmental awareness and fostering ecological education.

2. Modern Teaching Methods and Their Effectiveness

Modern pedagogical approaches—especially learner-centered methods—enrich “Natural Sciences” lessons both in content and in form. The following methods are considered the most effective:

a) Interactive Methods

Methods such as “Brainstorming,” “Fishbone,” and “Insert” help students develop skills in problem analysis, understanding cause-effect relationships, and expressing their own opinions.

Using the following active learning methods in “Natural Sciences” classes enhances lesson effectiveness:

Method Name	Description	Outcome
“Brainstorming”	Gathering all ideas to solve a problem	Students express their thoughts freely
“Conducting Experiments”	Reinforcing theory through practical activities	Scientific thinking is developed
“Mini Projects”	Short-term research activities	Skills in independent learning and analysis are formed
“Observation Diary”	Students record their observations	Analytical thinking and written communication are improved

b) Methods Based on Experiments and Practical Activities

Experiments teach students to draw independent conclusions. For example, observing the evaporation of water in practice or studying the effect of light on plant growth.

c) Project-Based Method (Project-Based Learning)

Through mini-projects related to each topic, students independently explore a problem and present their results. This method develops independence, leadership, and teamwork skills.

d) STEAM Approach

This approach delivers knowledge through interdisciplinary connections. For instance, the structure of plants can be studied both biologically and artistically (by drawing), while temperature changes can be analyzed through mathematics and technology.

3. Digital Technologies and Information Resources

Nowadays, digital technologies are widely used to attract students' attention and ensure active participation in the classroom. For example:

Virtual laboratories – allow safe performance of simple experiments.

Interactive presentations (e.g., Genially, PowerPoint) – enhance comprehension by visually illustrating the topic

Educational videos and animations – help explain complex processes in simple language. Additionally, QR code-based tasks, online quizzes, and mobile apps have become integral parts of the modern learning process.

4. Assessment and Motivation of Students' Activities

Assessment in modern lessons differs from traditional methods. The following approaches are considered effective:

Formative assessment – helps identify students' achievements and gaps through continuous feedback.

Portfolio method – a collection of a student's practical works, drawings, written observations, and projects

Self-assessment – fosters the student's ability to analyze their own learning independently.

Organizing Primary School Lessons with Digitally Programmed Assignments

Digital tasks are carried out using individual cards or prepared wall charts. Each card includes a task with a corresponding answer key. The student must find the correct match. These tasks allow the teacher to quickly (in 4–5 minutes) review the material just learned or check homework comprehension.

Digitally programmed tasks can assess not only knowledge of the external features of natural objects but also more complex concepts.

Example Task – Identifying Knowledge from a Natural Map:

The source of a river.

The depth of a river stream.

The point where the river flows into another river, lake, or sea.

The river formed by the confluence of the Panj and Vakhsh rivers.

The river formed by the confluence of the Qoradaryo and Norin rivers.

A river with no outflow destination.

Sources:

Amu Darya

Syr Darya

Riverbed

Source

Zarafshan

Outflow point

Answers:

1 (4), 2 (3), 3 (6), 4 (1), 5 (2), 6 (5)

Other types of programmed tasks can also be used. For example, the teacher can show the names of natural zones on the board with numbers. Then the teacher names the zones and the living organisms characteristic of each. Students match objects to the appropriate numbered labels.

Programmed Didactic Cards

These types of programmed tasks can be used in various types of lessons and during both individual and whole-class activities.

Students are given 5 minutes to complete the task.

Within this time, the student is expected to answer 2–3 cards and record the answers in their notebook using numbers. The programmed cards are structured based on the topics studied, with each card containing a question and three answer choices: a complete and correct answer, an unclear answer, and an incorrect answer.

The student must write the card number and, in parentheses, the number of the chosen answer in their notebook.

Examples of Programmed Didactic Cards:**Card 1:**

Why do birds migrate to warmer regions?

1. Because it gets cold.
2. There is no food for them.
3. Because it gets cold and food becomes scarce.

Complete and correct answer: (3)

Card 2:

What is soil?

1. Soil is a natural mineral.
2. The upper, soft layer of the earth where plants take root.
3. Soil is the top layer of the earth.

Complete and correct answer: (2)

In geography lessons, while using elements of programmed teaching, the teacher must keep in mind the following:

- In this form of activity, individualization of control within group-based learning should be maintained.
- As many students as possible should be engaged.
- The teacher should monitor the quality of their own instruction, analyze student mistakes, and categorize them.
- Programmed assessment should be incorporated into the traditional structure of instruction.

When using programmed assessment tasks, it's important to remember that they are one of the diverse forms of checking students' knowledge and must be practically integrated into the teaching process.

Conclusion

By organizing “Natural Sciences” lessons based on modern methods, we help shape students not only as knowledgeable individuals but also as observant, curious, and nature-loving personalities. This, in the long term, contributes to the formation of an ecologically conscious generation.

Therefore, primary school teachers must constantly update their skills and actively implement interactive and innovative methods. Only then will lessons be effective, and students will develop as active participants in the learning process.

References:

1. Presidential Decree of the Republic of Uzbekistan No. PF-60 (2022): "On Measures to Improve the Quality of Education and Enhance the Training of Pedagogical Personnel."
2. Kholboyeva M., Qodirova D. – "Methods of Teaching Natural Sciences in Primary Education," Tashkent, 2022.
3. UNESCO – STEAM Education Policy Recommendations, Paris, 2021.
4. Vakhobova D. – "Modern Pedagogical Technologies and Their Practice," 2020.
5. Rakhmatova S. Some Issues of Methodological Training for Biology Teachers in Innovative Activities // Academic Research in Educational Sciences. – 2021. – Vol. 2. – No. 11. – Pp. 648–654.
6. Rakhmatova S. T. The Importance of Distance Learning in the Education System // Economics and Society. – 2024. – No. 6-2 (121). – Pp. 577–580.
7. Rakhmatova S., Rakhmatullaev B. A., Abdurasulova Z. A. Ways of Preparing Biology Students to Create and Use Electronic Resources // Economics and Society. – 2024. – No. 11-2 (126). – Pp. 378–381.
8. Shapulatonva, S. K. (2023). THE MAIN QUALITIES AND CHARACTERISTICS OF PEDAGOGICAL THINKING. Editorial board: Tone Roald, PhD Associate Professor of Psychology University of Copenhagen, 108.