EUROPEAN INTERNATIONAL JOURNAL OF PEDAGOGICS

VOLUME04 ISSUE10
DOI: https://doi.org/10.55640/eijp-04-10-08 Pages:33-38

NATURAL SCIENCES AS A SUBJECT CONTRIBUTE TO THE DEVELOPMENT OF STUDENTS' SCIENTIFIC WORLDVIEW

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ABOUT ARTICLE

Key words: Knowledge, environment, interest, creativity, research, practical work, natural phenomenon, observation.

Received: 10.10.2024
Accepted: 15.10.2024
Published: 20.10.2024

Abstract: In this article, by identifying the problems that arise in the process of forming elementary concepts from natural sciences (SCIENCE), by studying them, analyzing them and eliminating them, students acquire deep and solid knowledge of the basics of natural science, as well as it was mentioned that they should be filled in independently and focused on improving the skills of practical application.

INTRODUCTION

In correctly understanding and assimilating initial knowledge of natural sciences by students, unveiling the physical content: forming definitions, including the essential characteristics of the concept being studied, conducting demonstrative experiments, utilizing didactic materials, and connecting them with life and practice are crucial. Forming initial knowledge in natural sciences cannot be achieved instantly. These concepts are gradually integrated and assimilated during the teaching process of natural and mathematical sciences, through the acquisition of various scientific and everyday information, observations, and analyses. The effectiveness of forming initial knowledge in natural sciences depends on the teacher's ability to express the essence and content of the concept or phenomenon being studied, the methods and approaches of teaching, and the consistency and sequence of material presentation. Based on the stated ideas, the current natural sciences (SCIENCE) textbook for primary classes is designed to form elementary concepts of physics, chemistry, biology, zoology, mathematics, and technology through theoretical and practical exercises.

The relevance of the research topic, as well as the lack of fundamental research on the problem of forming initial knowledge of natural sciences and stimulating interest in natural sciences among primary school students in our country, is also related to the lack of methodological developments for organizing excursions, observations, and educational activities. The conclusion is that practical exercises should be conducted along with theoretical information to form concepts and notions in natural sciences, acquire professional knowledge and skills, and develop existing abilities in primary

school students. Forming initial knowledge of natural sciences in primary school students and stimulating their interest on a continuous basis not only facilitates understanding of the topic being studied but also improves the quality of mastering the curriculum material of natural sciences, which in turn aids in the development of interest in the subject.

To study the state of the problem of forming initial knowledge in natural sciences among primary school students, we used a comprehensive approach that included studying and theoretical analysis of pedagogical and methodological literature on the research topic, various pedagogical materials, studying lesson and topic plans of primary school teachers and plans for extracurricular activities, analysis of observed lessons and interviews with teachers, observations, surveys among primary school teachers, and conducting a stated experiment to determine the level of knowledge of natural sciences among primary school students.

In studying the problem of forming physical and metrological concepts in primary grades, we came to the following main conclusions:

- Forming initial knowledge and concepts in physics according to the main educational material helps to obtain reliable evidence and encourages students to actively solve theoretical and practical problems, contributes to a conscious understanding of the study material, develops skills and competencies, and stimulates intellectual activity. Therefore, the gradual formation of physical concepts is considered an essential condition for preparing primary school students for the study of physics;
- The formation of physical concepts in primary grades should serve to correctly understand the essence of the physical phenomena and processes being studied, identify their causes and laws, enhance the students' observation skills, develop their ability to apply this knowledge in practice, and foster an interest in physics" [1;98-p].

Thus, forming initial knowledge of natural sciences in primary school students implements the principle of continuity in learning, which in turn helps to improve the quality of mastering the curriculum material and the formation of elements of natural-scientific knowledge.

Additionally, we offer the following recommendations for primary school teachers (using the example of forming physical concepts):

- Primary school teachers need to systematically reveal the essence of the physical concepts and terms being studied, the natural phenomena and processes during lessons for 1st to 4th-grade students, increase the scientific content of the material being studied, and organize practical exercises, excursions to nature and other objects to consolidate the formed and forming concepts;
- Primary school teachers should be well-versed in the methodology of conducting physical demonstrative experiments, and capable of using didactic materials and technical means of teaching" [6;46-p].

The involvement of natural sciences teachers in the process of forming initial knowledge in natural sciences among primary school students is essential. For this purpose, natural sciences teachers and primary school teachers (in subjects like environmental studies, mathematics, technology) need to establish strong interconnections during the educational process.

These connections should be clearly expressed in the following ways:

a) Methodical assistance by the natural sciences teacher to the mentioned subject teachers in preparing to present elements of natural-scientific disciplines;

b) Participation of the natural sciences teacher in the lessons dedicated to "intersecting" issues by the teachers of the aforementioned subjects;

c) Participation of subject teachers in the lessons of natural sciences teachers;

d) Holding joint meetings of methodological associations of natural sciences teachers and primary school teachers;
e) Conducting lessons on relevant topics by the natural sciences teacher in primary classes [10;21-p].
The main criteria for collecting, selecting, and systematizing natural-scientific material elements for use in primary classes include its regularity, systematicity, the logical consistency of the material with the topic being studied, and the ability to clearly distinguish between primary and auxiliary material that forms reflections of the natural world in the minds of primary school students.
The ability to properly collect, select, and systematize natural-scientific material for use in primary classes gives the primary school teacher the ability to correctly approach other pedagogical problems of using natural-scientific material in the process of teaching primary school subjects.

1-table

II grade	III grade	IV grade
AIR		
Air temperature. Measuring air temperature with a thermometer. The dependency of air temperature on the sun's elevation during the day. The impact of air temperature on seasonal changes in abiotic and biotic nature, and on human labor in different seasons.	Air composition. The impact of air composition on human health. Atmospheric air pollution and countermeasures (installing gas purification and dust collection equipment, converting industrial enterprises and vehicles to gas fuel and electric drive, etc.). The importance of purification installations in the economical use of natural raw materials.	The Earth's atmosphere. Air is a mixture of gases. Physical properties of air (colorlessness, transparency, low thermal conductivity, volume change with temperature), their use in industrial activities by humans. Using air's poor thermal conductivity to protect soil and plants from freezing. The application of air currents in daily life and industry. Oxygen's property of supporting combustion, its use in industry. Heating of the air near the Earth's surface. Changes in air temperature with altitude. Continuous movement of air on the Earth's surface. The formation of wind - horizontal movement of air. Wind protection measures. Formation of clouds and precipitation. Weather vane, thermometer - tools for observing the weather. Mixtures in the air. Sources of atmospheric pollution. Methods and means of protecting the air from pollution. The sun as a source of heat and light. The straight-line propagation of light. The impact of atmospheric pollution on the dispersion of sunlight and weather.
WATER		
The three states of water in nature. Snow and ice, their physical properties. The use of snow and ice properties by humans. The	Water as a solvent, the importance of this property for life on Earth. Soluble and insoluble substances. The transition of water from one	The physical properties of water as a liquid (colorlessness, transparency, flowability, ability to dissolve various substances, lack of taste and odor, evaporation and

state of water bodies depending on air temperature.	state to another. The continuous cycle of water in nature, its dependence on seasonal changes. Water purification (filtration).	boiling), comparing them with the properties of water in solid and gaseous states. Similarities between certain physical properties of water and air. Changes in water volume with temperature. The boiling point of water and the melting point of ice. The role of water's physical properties in preserving the life of aquatic plants and animals during winter. Main sources of water pollution. Methods of clearing water from congestion and pollutants. Water in human service. The role of water as an energy source.
ROCKS AND MINERALS, VALUABLE MINERALS		
	The most important valuable minerals, their characteristic external signs and physical properties. The use of the main properties of valuable minerals in the economy (the strength of granite, the combustibility of coal and oil, the solubility of iron ore, etc.).	The composition and characteristic signs of rock formations (density, hardness, brittleness, color, luster, etc.). The properties of mineral and non-mineral valuable minerals, their use by humans. The physical properties of metals obtained from melting ores. Glow. The daily and annual changes in air temperature, the effect of wind and water forces on the degradation of rocks. The impact of mining on the state of abiotic and biotic nature.
SOIL		
	Soil composition. The main physical properties of soil: moisture conductivity, air permeability. Measures against soil compaction.	Natural processes leading to soil formation. Soil as an environment where water, air, and living organisms interact. The movement of water in the soil, the capillarity of the soil. Ways to conserve and collect soil moisture. Eliminating excess moisture from the soil. Protecting soil from wind, erosion, and degradation.

A crucial aspect of utilizing elements of natural-scientific knowledge in the teaching process in primary grades is selecting materials for in-class and extracurricular activities. It's important to note that selecting educational material is one of the most complex issues in pedagogy in general.

The initially collected natural-scientific material cannot be used in its original form. After gathering materials from various sources, it's necessary to select and systematize them for use in the teaching process in primary grades. Methodological recommendations play a significant role in this process.

We can conclude that in the newly introduced natural sciences textbook, students often work in groups, striving to understand rather than merely memorize concepts related to the topic. Their activities are based on various sources, and students see themselves as young researchers with their perspectives on the surrounding world. They become direct participants in the interactive learning environment

created by teachers, laying the foundation for the process of assimilating natural-scientific knowledge. Based on the initial natural-scientific material, it is possible to organize students' independent work on some topics. Therefore, some of the most important materials should be duplicated.

The main criteria for collecting, selecting, and systematizing natural-scientific material elements for use in primary grades include its consistency, systematic nature, and the ability to clearly distinguish between primary and auxiliary materials that are logically consistent with the topic being studied and capable of forming a comprehensive understanding of the world in the minds of primary school students.

The ability to correctly collect, select, and systematize natural-scientific material for use in primary grades gives the primary school teacher the ability to properly approach other pedagogical problems of using natural-scientific material in the teaching process of primary school subjects.

CONCLUSION

The process of integrating natural-scientific knowledge into the primary education curriculum emphasizes the importance of selecting appropriate materials for both classroom and extracurricular activities. This task, inherent to the pedagogical science, demands careful consideration to ensure that the content not only aligns with the educational objectives but also caters to the cognitive and developmental levels of primary school students. The transition to utilizing natural-scientific materials necessitates a methodological approach where materials are meticulously chosen and organized to facilitate an engaging and informative learning experience. This approach fosters a learning environment where students are encouraged to explore, inquire, and develop a deeper understanding of natural sciences through interactive and participatory methods.

The collaborative efforts between natural sciences teachers and primary school educators are crucial in crafting a coherent educational strategy that bridges foundational knowledge with exploratory learning. Through group activities, discussions, and hands-on experiences, students embark on a journey of discovery, viewing themselves as young researchers who actively contribute to the learning process. This pedagogical model not only enhances the students' grasp of scientific concepts but also stimulates their curiosity and fosters a lifelong appreciation for the natural world.

In conclusion, the careful selection and systematization of natural-scientific materials play a pivotal role in the successful integration of scientific knowledge into the primary education framework. By nurturing an inquisitive mindset and providing students with the tools to explore the complexities of the natural world, educators lay the groundwork for a comprehensive understanding of science that students will build upon throughout their academic and personal lives. The ultimate goal is to equip young learners with the knowledge, skills, and enthusiasm to pursue scientific inquiry, underscoring the significance of a well-structured and methodologically sound approach to science education in the primary grades.

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