



## TECHNOLOGY OF FORMATION OF NATURAL-SCIENTIFIC LITERACY IN PRIMARY SCHOOL STUDENTS

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<b>Received:</b> 28 <sup>th</sup> January 2022 <b>Accepted:</b> 28 <sup>th</sup> February 2022 <b>Published:</b> 17 <sup>th</sup> April 2022	Primary education is the foundation for the later stages of education. That is why our country pays a lot of attention to kindergarten and primary school students. In particular, by increasing their scientific literacy, they will be able to grow into mature and necessary personnel for the future of the country. In this article, the author discusses in detail the technologies for increasing natural and scientific literacy in primary school students, with the same goal in mind.
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Science literacy is the ability to know the ideas of the natural sciences and to solve problems related to the natural sciences as an active citizen. A person who is literate in the natural sciences can participate in the discussion of problems related to the natural sciences and technology based on scientific evidence. Literacy competencies in the natural sciences

- scientific explanation of events
- Design and evaluation of scientific research
- Scientific interpretation of data and evidence

Science literacy is a science and understanding of scientific concepts and processes that enable a person to make a decision with the knowledge he has and is able to play an active role in all aspects of life, especially in the field of science he is engaged in. Science literacy can be interpreted as an understanding of science and its processes, as well as its application to the needs of society, then the ability of scientific literacy can be explained as the ability to solve problems and make decisions with the knowledge they have in accordance with their level and are able to utilize the technology around it.

Nationalization of the content of education in the pedagogical activity of primary school teachers and on this basis the harmonization of the results of spiritual and intellectual education, the use of pedagogical opportunities to increase the activity of students, the national values of the Uzbek people helps to understand. So, the principle of the national, scientific direction of pedagogical education will be proved once again. The scientific outlook of primary school students requires the implementation of its multifaceted components as a whole process, such as intellectual, moral, political, economic, legal, environmental, aesthetic, artistic, as well as intellectual potential that is relevant today. reaches In the process of education, the components of intellectual heritage are inculcated in the minds of students in the unity and interdependence of education and throughout their activities. At the same time, it should be borne in mind that the degree of influence of the components of intellectual heritage on the consciousness and activity of the student depends on their content, essence and characteristics. Also, the level of intellectual potential of an individual is determined primarily by his mental maturity. It should be noted that mental capacity is largely determined by the level of activity of the student. Therefore, increasing the activity of primary school students, the widespread use of national and spiritual heritage in this regard and the proper application of its pedagogical potential in the educational process requires constant research from educators.

A great deal of contemporary research proves the idea that the students do not have sufficient amount of natural-science knowledge. International studies present the findings that the level of scientific literacy of pupils in V4 countries is around average. This situation is getting worse, since a number of pupils continue their education at secondary schools, with a limited number of classes aimed at natural science education. Therefore we believe that it is important to solve this situation by improving the quality of natural science education within university preparation of students, who are preparing for the profession of preschool and primary school teachers. Human beings are part of the nature which gives them conditions for life. Humans live in the nature along with animals and plants but as opposed to the animals and plants humans can think, work and create new things. Humans have always been fascinated with nature; scientists have always examined it and have revealed interesting discoveries. The amount of information is constantly rising and what was once true is often changing rapidly. We were once taught that the Solar System consists of 9 planets which is no longer the case. We were also told that we had to eat spinach as it contains a lot of iron. Now we know that this is not the case. We had also to drill a number of formulas and definitions but when we have to apply

them we realise that the information acquired by drilling is of no use whatsoever. The educational system has a chance to get rid of uniformity and directiveness only if students completely change their view on the role of a teacher (as one of the plenty of resources of cognition, who encourages experiential learning, who gives open questions, supports discussion, develops autonomy and initiative).

Natural science education is included in the curricula of pre-primary education in each of the V4 countries. Natural science learning in pre-primary level of school is focused on the regularities of the surrounding natural reality, on acquiring an elementary knowledge about nature and on achieving qualitative changes in the understanding of the sense and meaning of environmental attitudes. Based on educational standards, the curriculum can, within natural science learning, be drafted to reflect the seasons, to learn that nature is composed of living and non-living nature, to get to know fauna and flora, to stimulate an awareness regarding the need to protect them, as well as the protection of the planet Earth and its components. It is desirable to deepen the feeling of a need and fellowship towards nature. In primary education in the Czech Republic, natural science education takes place primarily in the curriculum program Human and His World, in the subject with the same title. One of the five themes is entitled Diversity of Nature, the other themes are titled: Place Where We Live; People around Us; Human and Time; Human and His Health. The last theme also relates to natural science education.

In Grades 1 – 3 the subject matter from the five mentioned individual thematic areas is integrated into one subject. In Grades 4 and 5 the subject matter is divided into two separate subject areas: the first one drawing on the thematic areas: Place Where We Live; People around Us; Human and Time (as foundation for Geography and History), and the second one drawing on the thematic areas: Diversity of Nature; and Human and His Health. The core of knowledge of the field of study Pre-school and elementary school pedagogy is ordered to include in the curriculum methodology of educational and formative activities in the fundamental spheres of formation and education, including introduction to natural sciences. In the core of knowledge of the second level (master's) of the given field (study program Teaching for primary school) it is ordered to include in the curriculum the theory of formation of cultural literacy and, in the didactic context, the fundamental parts of primary education, including initial natural science education. In natural science education of students in the field of Pre-school and elementary school pedagogy the respondents used the same teaching aids as in pre-primary and primary education, for example plastic containers, strings, magnets, rulers, cups, flashlights, candles, played dough, etc. They also used various sets of teaching topics electricity and magnetism, mechanics, sets on measurement of physical quantities, compass, magnifying glass, collections of minerals and rocks and the like. The respondents also worked with data projectors, various electronic materials, and interactive whiteboards. Several respondents indicated that it is not appropriate to use electronic media to an exaggerated degree, because pre-primary and primary natural science education should be based on the experience, practical manipulation, observation and experimentation. Natural science education in the lowest level of school is a continuous process of interaction of the teacher and the child. If we want to capture the most important aspects of this dynamic process, we use nonmaterial teaching resources and material teaching resources. In this lecture we deal with nonmaterial teaching resources. They are teaching methods, teaching principles and organizational forms.

Even in natural science education, the selection of nonmaterial teaching resources has its own specifics. We could simply express them by the quotation: „If you give a fish to a man, you feed him for a day; however, if you learn a man fishing, you give him food for all his life“. According to the psychologists` research results, we usually retain

- 10 percent of what we read,
- 20 percent of what we hear,
- 30 percent of what we see,
- 50 percent of what we both see and hear,
- 70 percent of what we discuss with others,
- 80 percent of what we experience personally,
- 95 percent of what we teach to someone else.

These results should be taken into account when teaching natural sciences in the lowest level of school. Primary school students have a deep understanding of the essence of universal and national cultural heritage on the basis of scientific knowledge, a realistic attitude to the laws of nature and society on the basis of its perception, thinking, drawing conclusions. This attitude in the student is conscious. Organizing activities on a conscious and scientific basis is a high indicator of mental culture.

In order for primary school students to enjoy aesthetics of events, works of art and literature, they must be able to feel beauty, be influenced by it, the beauty of life, be inspired by creative artistic achievements. To do this, the student must first pay special attention to the two most important aspects of knowledge of literature, art - literature, direct perception of the work of art and its evaluation. The pedagogical potential of using the Uzbek national-spiritual heritage in the activation of primary school students opens the door to a wide range of opportunities for both teachers and parents in the educational process, which is an effective system of interaction. forms. The success of the main stages of the educational process in the lessons of etiquette and reading in the primary grades is characterized by the perfect development of the goal model. The course is aimed at achieving two goals: first, the general goal of mastering the essence of the national and spiritual heritage of the Uzbek people, embedded in the content of this or that science; second, a special purpose in the study of a particular subject, aimed at inculcating in the mind of the reader the essence of this or that national-spiritual heritage. The control over the implementation of the tasks set for the primary education

is carried out through the educational standard. Based on the education standard, the state provides primary school students with the educational services and tools needed to achieve the minimum standards.

The state standard for primary education is set by areas of education, not by subjects. The standard indicators in the field of education were determined based on the level of development of children aged 7 (6) -11 years, the minimum amount of educational content required by society, based on the needs and opportunities. The establishment of the state education standard for primary education at this stage will allow to limit the scope of educational content, to integrate the spheres of education. The establishment of the state education standard implies the modernization (updating in terms of the requirements of the time) based on the conceptual basis of the content of primary education. The standard of primary education integrates the standard indicators set for the fields of education. The criteria and parameters of the standard are the indicators of the educational standard set for the field of education. The quality of educational outcomes in the field of education is determined on the basis of the same indicators. In this case, the indicators are summarized and expressed in specific units. Based on the world experience, based on the current requirements of the time and the principles of education, which is developing along with the development of society, the basic curriculum of primary education in the Republic of Uzbekistan includes mother tongue, mathematics, nature, human and social education. is entered.

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