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Formation of environmental literacy in an educational organization

S Sarbassova¹, S Abdugalina¹, R Burganova¹, K Shaikheslyamova¹,
B Abdrasheva², G Jamaliyeva², S Anzorova^{3*} and L Vlasenko⁴

¹Kazakh University of Economics, Finance and International Trade, Faculty of applied sciences, 7 Zhubanov str, Nur-Sultan, The Republic of Kazakhstan

²Karagandy State University named after E. A. Buketov, Faculty of Philosophy and Psychology, 28 Universitetskaya str, Karaganda, The Republic of Kazakhstan

³Moscow University for Industry and Finance "Synergy", 80 Leningradsky prospect, Moscow, Russia

⁴Moscow State University of Civil Engineering, 26 Yaroslavskoye shosse, Moscow, Russia

E-mail: Anzorova@inbox.ru

Abstract. Educating ecological literacy and a conscious attitude to the world around us is a long and purposeful process, which is based on the didactic principles of pedagogy and the laws of nature. The problem of the formation of an ecologically cultured and competent personality is now becoming one of the central and significant ones. Environmental literacy consists of such components as environmental knowledge, assessment of the surrounding reality, foreseeing the consequences of human activity in nature, studying all methods of competent nature management and striving for environmental protection. Thus, environmental literacy is a product of environmental education and upbringing. The direct formation of environmental literacy occurs in the process of the purposeful influence of the teacher. An ecologically developing environment in an educational organization should contribute to the development of the student's cognitive activity, broadening his horizons, ecological and aesthetic development, and the formation of a holistic picture of the world.

1. Introduction

Recently, in the educational process, an emphasis has been placed on the Concept of spiritual and moral development of a person, where in the section on basic values it is written that: "the main content of spiritual and moral development, education and socialization are basic national values stored in socio-historical, cultural, family traditions "One of the basic national values is nature, which is considered as "evolution, native land, nature reserves, planet Earth, ecological consciousness" [1, 2]. That is why it is always necessary to develop environmental literacy.

An educational organization plays an important role in solving this problem. One of the main areas of work of the educational organization is "fostering a positive emotional and value attitude to the world around us, environmental literacy", which is of great importance. Thus, the educational organization is faced with the task of improving the environmental education of students.

This determines the relevance of the topic of this research: "Formation of environmental literacy in an educational organization: pedagogical and regulatory aspect."



One of the basic principles of modern society is: “the humanistic nature of education, the priority of human life and health, the rights and freedoms of the individual, the free development of the individual, the upbringing of mutual respect, industriousness, citizenship, patriotism, responsibility, legal culture, respect for nature and the environment, rational nature management ” [3, 4].

Traditionally, ecological upbringing and education is understood as the process of teaching and educating a person with an emphasis on fostering respect for nature, the acquisition of labor skills in natural conditions, the upbringing of an emotional-value attitude towards wildlife, the acquisition of a set of knowledge, skills and abilities in the field of ecology [5-7].

It is important to carry out work on environmental education and personality development not only in the classroom of educational organizations, but also in optional classes. The difficulty lies in the fact that it is necessary to purposefully educate an entire generation that will transform the environment in accordance with the principles and laws of nature.

The foundations of ecological culture, like any other, are laid and developed throughout life. It is necessary to pay special attention to the formation in a person of the concepts and skills of a respectful attitude towards nature, towards oneself and towards other members of society.

The formation and development of environmental literacy of students is a long process that should be considered from different angles. The purpose of this process is to master the basic laws in the field of human interaction with the surrounding nature and the system of certain ecological concepts, as well as the formation of skills in dealing with nature, methods of nature-friendly activity, the development of a complex of value orientations in the field of relations between society and nature [7].

2. Literature review

The problem of the relationship between man and nature is not new. Back in the 17th century, the great teacher Ya.A. Comenius drew public attention to the fact that all processes in human life proceed like the processes of nature. This idea laid the foundation for the "Great Didactics", which is a public domain, designed to teach everyone and everything.

Ya.A. Comenius attributed a huge role to the harmonious development of man in close connection with nature. Comenius said that the surrounding nature develops according to its own laws. And man, being a part of nature, obeys all the same laws of development of the surrounding world.

The great teacher based his teaching on the principle of conformity to nature, his principles and laws of education, training and development proceeded from the laws of nature.

Thus, Jan Amos Komesnky deduced the basic didactic principles, relying primarily on the laws of nature. And already in the 17th century, the teacher brought to the public the greatest ecological situation, where human development is considered in close connection with the natural world.

The importance and necessity of the issue of human development and education through the prism of natural values was considered by such great teachers as J.J. Rousseau, G. Pestalozzi, F. Disterverg.

Russian writers also did not stand aside. V.G. Belinsky, A.I. Herzen, N.A. Dobrolyubov, N.G. Chernyshevsky also wrote that it is necessary to introduce full-fledged knowledge about nature into an educational organization. They emphasized the importance of the influence of environmental knowledge on the formation of moral and moral qualities of the individual, which will determine the behavior of a person as a whole.

The great Russian teacher K.D. Ushinsky believed that the knowledge of the objective world is impossible without knowledge of the ecological relations that actually exist in it. The study of ecological relations contributes to the formation of a holistic picture of the world, that is, worldview, the development of logical thinking, memory and imagination. "In my opinion," wrote KD Ushinsky, "the logic of nature is the most accessible and most useful logic for students." And the logic of nature is the interconnection of its components. Cognition of the relationships existing in the surrounding world is the main link in the formation of ecological literacy of schoolchildren, a necessary condition for the formation of a responsible and conscious attitude to nature [8].

Konstantin Dmitrievich Ushinsky drew public attention to the educational influence of nature and the significance of this influence. He called for expanding the communication of students with the

natural world and said: "It is strange that the educational influence of nature ... is so little appreciated in pedagogy" [9].

At present, the issues of environmental education and education are acquiring ever new urgency and solving them is already the task of modern educational institutions.

V.A. Sukhomlinsky left a huge legacy in the field of education for students of environmental literacy. He viewed nature from the point of view of the "eternal source of thought" and attached great importance to the development of morality in man. According to his position, nature is at the heart of everything: creativity, thinking, perception and feelings. He noticed that nature itself does not educate a person, but is a powerful source of development of the emotional, sensory and moral spheres of a person. The teacher believed that these qualities must be instilled constantly. In the educational and cognitive process, environmental literacy is formed in the process of assimilating certain environmental knowledge, developing the emotional sphere and practical skills for environmentally sound interaction with nature and society.

I. D. Zverev defines the following tasks of environmental education:

- training - the formation of knowledge of an ecological nature, knowledge about nature and its interrelationships, a system of skills to improve the ecology of the environment;
- education - education of the need to act in compliance with the rules and norms adopted in nature;
- development - the development of the intellectual, emotional and volitional sphere, the desire to develop and participate in practical matters for the care and protection of the environment.

An important point in the education of students' ecological literacy is a change in ideas and concepts about the priority of man over nature in the mind of man. In addition, it is necessary to form a new perception of the world, which will contribute to the awareness of nature and man as a whole, and not from the point of view of satisfying human needs and requirements [10].

3. Results

An important feature of environmental education is its obligation and continuity at all stages of education, that is, education should be conducted not only at school, but also in the family, preschool institutions, etc. It is these steps that have a decisive impact on the formation of environmental literacy of the future citizen. It is not enough to understand the essence of the problem, it is necessary to offer both specific technologies and ways to solve it. All of these methods are described in natural science curricula and teaching aids for teachers and elementary school students. This knowledge base of forms and methods is not given initially, it needs to be formed independently, working with various sources of information.

Every person needs a certain amount of ecological knowledge. Man was, is and will be one of the zoological species of the planet, sufficiently active and capable of transforming the environment. A person continues to be a social being, he communicates with other organisms, he participates in the food chain, and, therefore, the most important information that a child should receive is environmental information.

Education and upbringing of schoolchildren in the field of the environment is currently one of the priority areas of work. The earlier the formation of environmental literacy in children begins, the more expedient it is to organize this process, the higher the effectiveness of education. Jan Amos Komensky believed that it was necessary to work on the formation of environmental literacy already in early childhood. The scientific organization of the process of environmental education requires a clear definition of all its links, the identification of connections and dependencies [11].

The forms, methods and means of organizing environmental education are diverse. There are traditional and innovative forms of work on environmental education and upbringing of primary schoolchildren, contributing to the formation of a holistic picture of the world, broadening the horizons of students and enriching students' knowledge.

The teacher is free to use any forms, methods and techniques of work, but the lesson remains the leader. This form of work is clearly regulated by time and creates favorable conditions for all students

to acquire knowledge on a particular subject, as well as to develop the child's educational and creative abilities.

It is possible to foster environmental literacy in primary school age through technology, art lessons, music, and literary reading.

In the reading lesson, children get acquainted with the works of various authors who describe the beauty of nature, human behavior in nature, and consider the life of animals. Discussing the stories of V. Bianchi, D.N. Mamin-Sibiriyak and other Russian writers, the students grasp the interconnections in nature, endure instructive moments. Also, in the reading lesson, when considering the biography of the life, creativity and hobbies of an individual writer, you can focus on the author's passion for ecology.

At the lessons of the artistic and aesthetic cycle, children get acquainted with the world of nature through creativity. In technology lessons, they make crafts from natural material, from waste material. In fine arts lessons, landscapes are painted to show the beauty of the surrounding world. In music lessons, they listen to the sounds of nature, learn to determine their mood.

Thus, it is possible to carry out work on the formation of environmental literacy among students in any lesson, with no exception being the lesson of the surrounding world.

The lesson in natural history or the world around us is one of the most interesting subjects in elementary school. In addition to the fact that the variety of material makes it interesting, it is one of the most difficult subjects, since it contains a very wide range of issues: from the daily routine to the discussion of issues about outer space, countries, religions, etc. In the context of any issue, man and nature are considered in an inextricable connection. Teacher and student in this case act as observers and experts, they take part in search activities, seeking to find and reveal something mysterious from the surrounding world. The study of the surrounding world is impossible without direct observation and research. It is necessary to investigate natural objects, phenomena, relationships and establish cause-and-effect relationships. That is why, in the practical activities of younger schoolchildren, such a type of activity as an excursion to nature is often encountered. Systematic excursions are an important and necessary condition for the formation of environmental literacy among students [12, 13].

A relatively new method, the type of activity of junior schoolchildren is the project method, brain rings, case method.

As the basis for the effectiveness of the methods and means used to form environmental literacy, one can take the behavior of a younger student, which, undoubtedly, must go in unity with consciousness. Therefore, an important point is the formation in the minds of a younger student of an understanding of their role in nature, an awareness of their duty, which is expressed in the care and protection of the environment. At the same time, it is important to instill in the child certain aesthetic qualities, a sense of humanity towards nature, the ability to feel its beauty, desire and ability to take care of it.

In order to consolidate the received environmental knowledge, an intellectual brain-ring can be carried out. This form of work involves questions of different difficulty levels, for which you can get a different number of points. The applied game moments make the lesson more interesting, rich and informative.

4. Discussion

The teachers' close attention is paid to the individual form of environmental work, where students are given the opportunity to prepare a report, conversation, organize a discussion, make a photo collage, and so on, where they can show their creativity, realize their idea and be appreciated by the class collective and independently. Since various kinds of photographic works are currently very popular, students can be invited to make a thematic collage ("my favorite plants", "pets", "insects", etc.), where they will photograph objects of wildlife and make a selection photo, will write inscriptions to them. You can present your collage in class. Thus, the student realizes his creative potential, develops creative abilities.

In the course of this study, three levels of formed environmental knowledge among students were identified: low, medium and high. The degree of formed environmental literacy is determined by a scale.

Table 1. The scale of the formed knowledge of the principles of ecology.

12-15 points	High level
7-11 points	Intermediate level
0-6 points	Low level

Low level - from 0 to 6 correct answers. There is no ecological knowledge, the student has a very narrow outlook and the wrong idea of the flora and fauna is formed, the student does not know the ecological relationships.

The average level is from 7 to 11 correct answers. The student does not know well enough and follows the rules of behavior in nature. Knowledge about the features of the natural and animal world is at a stage of development.

High level - from 12 to 15 correct answers. The student knows and understands patterns and relationships in nature. The student has a well-developed knowledge of plants and animals from different communities.

Table 2. Knowledge of the principles of ecology (1 criterion).

Experimental group			Control group		
High level	Average level	Low Level	High level	Average level	Low Level
2 (9%)	7 (32%)	13 (59%)	4 (18%)	12 (55%)	6 (27%)

The data of an experimental study of the level of formed environmental literacy are presented below.

Table 3. Knowledge of the principles of ecology (1 criterion) of students at the beginning of the study.

Level formed environmental literacy	Experimental group (1 group)	Control group (2 group)
	Number of students, %	
Low (0-6 points)	13 pers. / 59%	6 pers. / 27%
Medium (7-11 points)	7 pers. / 32%	12 pers. / 55%
High (12-15 points)	2 pers. / 9%	4 pers. / 18%

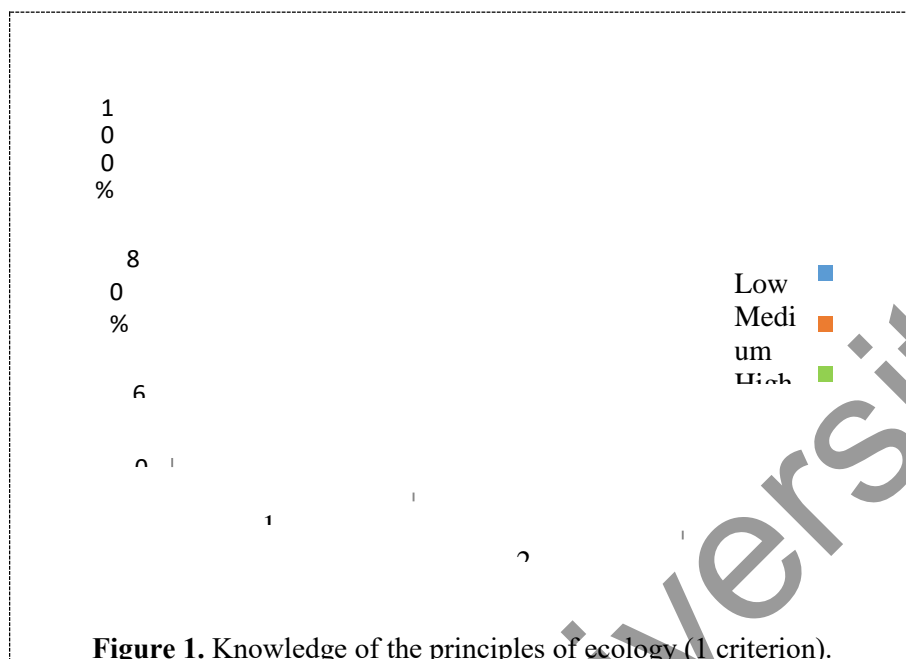


Figure 1. Knowledge of the principles of ecology (1 criterion).

It takes a lot of time to form an environmentally competent personality. It is important to consider the problem comprehensively and try to form environmental literacy not only in the classroom of the surrounding world, but also in the everyday life of the student. As a final result, we should get a harmoniously developed personality with a certain set of environmental knowledge, skills and abilities, emotionally responsive, with a steady interest in the study and protection of nature.

5. Conclusion

Thus, the success of environmental upbringing and education in an educational organization depends on the use of various forms and methods of work, their reasonable combination. How successfully the forms and methods of environmental education were selected is determined by the continuity of the students' activities in the conditions of the educational organization and the environment. The content of the school course in natural science subjects contributes to the ecological education of schoolchildren and has enormous opportunities for this. Educational programs aim educational organizations at increasing the volume and role of independent work of schoolchildren, widespread use of innovative - active and interactive - teaching methods in the educational process.

To achieve the set objectives for environmental education, it is necessary to use a variety of innovative forms and methods of work, active teaching methods. The student must not only receive knowledge in a finished form, but also learn to extract and process it independently, solving educational tasks feasible for his age, and be an active participant in the educational process. By introducing a new model of environmental education and upbringing into the educational process, students develop environmental literacy, which implies the preservation and restoration of wildlife, the rational use of various natural resources, the improvement of the environment and the human lifestyle.

Thus, the success of pedagogical activity in the field of environmental literacy formation depends on how much the teacher is interested in the result, and whether he can interest the student.

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