

INTEGRATION OF ENVIRONMENTAL AND ENERGYSAVING EDUCATION IN SCHOOL TEACHING PROCESS

Alyona Volyk

Director of Secondary School №32, e-mail: volikalona@gmail.com, Ukraine

Abstract. Environmental education of children at primary and secondary school is the key to sustainable development. It is the formation of a systematic approach to the issue of environmental education that is able to prepare future generations to meet global challenges connected with changes in the environment caused by both natural disasters and those resulting from impacts of human activity.

Keywords: people, environment, education, ecologically friendly culture, environmental education.

DOI: <http://dx.doi.org/10.23856/2210>

Introduction

We cannot change the past, but we can reshape the future.
Young people have the opportunity to create a happier,
better future.

Dalai Lama

In the global problem of interaction between man and nature, the impact of human society on the environment made obvious the necessity for education of highly moral and educated generation of people able to solve complex problems of interaction between man and the environment. In addition, environmental education is now regarded as one of the most important aspects of socialization, i.e. active adaptation to habitat and responsible implementation of the laws of life in nature and society.

Integration of environmental education

The Concept of Sustainable Development of Ukraine stated that sustainable development is the process of harmonization of the productive forces and meeting the essential needs of all members of society under the condition of preserving and gradual restoring of the integrity of the environment, creating opportunities for a balance between natural potential and requirements of people of all generations (Decree of President of Ukraine №5 / 2015, 2015).

Environment protection, rational use of natural wealth by humanity is an important state and national task. Environment protection is a duty of every person. Success in this issue depends primarily on awareness of the importance of the task, on having skills and abilities to protect Mother Nature constantly, at every step. School aims to educate students in the spirit of love for Mother Nature, environment, shape the younger generation with environmentally friendly behavior and culture.

Environmental education of students is carried out in different ways: in classroom, at after class activity, during the tours, at socially useful work, at various school events and others.

The principles of environmental and energy saving education are implemented in schools practice during the following types of activity:

1. The acquiring of leading ideas and basic concepts of scientific facts about nature, which determine the grounds of human impact on nature in accordance with its laws.
2. Understanding of the multilateral value of nature as a source of material and spiritual forces of society and every individual.
3. Mastering applied knowledge and practical skills of examining and assessment of environment, making right decisions for its improvement, the ability to foresee the consequences of their actions and assume no negative impacts on nature in all kinds of work.
4. Conscious adherence to the norms of behavior, which exclude damage to nature, pollution or destruction of the surrounding environment.
5. Activation of improving the surrounding natural environment and, participation in the promotion of modern ideas of environmental protection.
6. Analysis of efficient use of natural resources, heating and electricity to attract students to the process of energy saving at school and at home.

The attitude to nature is closely connected with family, social, industrial, and interpersonal relations, covering all areas of consciousness: scientific, ideological, creative, moral, aesthetic and legal ones. Commitment to nature is complex characteristics of a person. It means understanding the laws of nature that determine a person's life and can be demonstrated in compliance with moral and legal principles of dealing with nature, creative activity for study and protection of the environment, promotion of correct ideas of nature protection, fighting against everything that has detrimental impact on the natural environment.

The main condition of environmentally friendly training and education is integral ecological educational environment aimed at studying and improving the relationship between nature and man. The criterion of forming a responsible attitude to the environment is a moral concern for future generations. The goal of environmental education is achieved in solving the following issues:

- educational issues which form system of knowledge about contemporary environmental problems and their solutions;
- fostering issues which shape motives, needs and habits of environmentally appropriate behavior and activity, healthy lifestyle;
- developing issues which develop a system of intellectual and practical skills for researching, assessment and improvement of the environment;
- creation of the pursuit of environment protection activity.
- To achieve this goal it is necessary to focus on such aspects as:
- shaping the knowledge necessary to understand the processes occurring in the system "man-society-technology-nature" helping in addressing local social and environmental issues;
- encouraging respect to nature and development of active citizenship based on a sense of personal participation in solving social and environmental issues and responsibility for the environment;
- developing ability to analyze environmental problems and predict the effects of human activities in nature, skill of independent and team adoption and implementation of environmentally significant decisions.

Thus, the formation of environmentally friendly culture and behavior must be implemented by integrating the content of environmental education in general subjects such as natural science and humanities in the educational system, creating holistic environmental educational space.

The system "nature - society - man" is analyzed in process of training and education, the ways of harmonizing of the interaction of its elements are demonstrated, which creates the idea of the integrity of the relationship of nature and man, facilitates the transfer of acquired skills of solving environmental problems to all the subjects and components of educational process .

The content of such school subject as Biology presents eco-cognitive aspect more than any other one.

In the course of Geography priority is given to the preservation and improvement of the environment and environmental management. Geography is the only subject that examines environmental issues at three levels: global, regional and local ones, and includes material of evaluative nature. This approach is an important part of the whole process of creating environmental awareness, forming the correct view of the nature, focusing on the interaction between society and nature, assessing natural and economic activity in the area, shaping form and rules of behavior in nature.

Study of the Chemistry allows students to understand deeply the laws of nature, form an idea of the chemical form, movement of matter, broaden and deepen knowledge about environmental factors, biomes causing disturbances and ways of overcoming the crisis in the environment.

Teaching Physics includes such aspects as formation of ideas about diversity and consistency of the world, human knowledge of the world and the impact of human activities on the environment in the practical use of science and technology.

Greening the content of mathematics makes it possible to reveal the polytechnic and practical significance of common methods of mathematics as a way to brief descriptions of complex ecosystems.

Academic discipline History allows to learn the objective laws of interaction between human society and the environment at different stages of social evolution.

Being an indicator of the growth of the spiritual culture of modern man, Literature is intended to convey the idea of ecology as ideology.

Established educational space gives students opportunity to receive the necessary conditions for self-development and personal potential realization, an opportunity to demonstrate a proactive stance in terms of ecological approach, participating in research, expeditions, events, environmental protection activities and so on. Reaching the goal of the activities is gained by a combination of different forms of work.

School Nature History as one of the parts of the educational work includes geographical, biological, ecological, historical, literary, ethnographic, folk and other areas. Each area of school natural history has its own object of study and an independent system of natural science in school. However, all of them are closely related in content, forms and methods of use. On the basis of sustainable development of Nature History activities teach students to look at the world through the eyes of the researcher, creates new ethical standards of their behavior in nature. Nature History promotes social work skills. Many projects are carried out collectively; there are common interests and responsibility that enhances awareness of the usefulness of activity and actual performance. Nature History activity forms in students love for their native land, national consciousness, responsibility for their family,

their homeland, which they explore and Ukraine. Nature History creates the conditions for research that contribute to the development of creativity of students, formation of active life position, values that meet the needs of sustainable development. Planning of Nature History in school should be in collaboration with other subjects teachers.

For example, in collaboration with teachers of Physics, studying the problem of air pollution by traffic, young researchers can mathematically calculate the economic feasibility of improving the design of internal combustion engines to reduce damage of toxic components for human health.

Knowledge of Chemistry helps high school students to write essay on the use of alternative energy sources and ways of obtaining the benefits of biofuels.

The material on Nature History brightens process of perception in the classroom, makes it more interesting, helps students understand better new scientific concepts and terms, expands and deepens their comprehension of the environment, instills the ability to influence it actively. Tourism and Nature History material are part of school geography textbooks, which are built according to the requirements of modern scientific geography and targeted at further strengthening of communication training and education connection with life. Extracurricular and educational Nature History are related. Knowledge of nature, studying its laws should be not only in textbooks, but also during the observations in practice, e.g. in woods and fields, mountains and plains, rivers and lakes. The main forms of study is the native land tours, excursions, tourist trips and travels, regional expeditions, tourist rallies, contests, environmental and other actions. The priority of Nature History excursion activity based on the principles of sustainable development is visiting environment protection objects.

The applying of this approach in the educational process is effective both for students and for teachers.

Thus, experience in teaching "Lessons for Sustainable Development" should give teachers a range of competencies and special features such as follows:

- propagandist and agitator (teachers involve students in activities, motivate, inspire, support, encourage, aiming to achieve this goal);
- data medium (teachers are engaged in self-education in various fields, providing individual and group counseling);
- counselor (teachers help students find the optimal direction of research according to their psychological, social and cognitive needs);
- head (teachers organize activities of students, creating appropriate conditions for it, provide the necessary resources, maintain contact with parents and other members of the educational process);
- -coordinator (teachers help students to do the work according to the established plan, promote the establishment of contacts between all participants of ecoteam, maintain feedback);
- experts (teachers analyze the process and the obtained results).

Conclusions and suggestions

Humanity has a common root and lives on the same planet. We cannot rely on somebody in solving our problems but must unite in peace and build our happy future.

The main objective of sustainable development of Ukraine is the construction of highly economic system that promotes environmental sustainability, productive labor, technological progress, and has a social orientation.

Educating respect for nature and its beauty in children, we are trying to launch common environmental projects, actions and deeds to make local environment and the whole world clean and bright.

The role of students in spreading environmental awareness among different segments of the population is crucial. It is not only ecological awareness that is important but also emotional and motivational readiness to defend their views, which requires certain moral positions, special training of volitional qualities and gaining methodical skills.

The school aims to teach students how to study and protect nature, assess its condition, promote environmental knowledge among people of their age and adults. Educating a necessity for students to participate in socially useful activities to protect nature should be an integral part of teaching and fostering process at school. To have a balanced and environmentally friendly way of life is a natural need of every human being. We focus on areas like recycling, saving energy and reducing pollution and strive to create conditions for strengthening healthy needs, providing an opportunity to show the best human quality. Teaching by personal example is the best way to show that living in harmony with the world around us is great!

References

Decree of the President of Ukraine (2015). On the Strategy for Sustainable Development. Ukraine – 2020, January 12, 2015, No. 5/2015 [Electronic resource]. Retrieved from <http://zakon1.rada.gov.ua/laws/show/5/2015>.