

System of Environmental Education and Upbringing for Schoolchildren

Pavlov Alexandr Alexandrovich, Demyankov Evgenii Nikolaevich, Fedyaeva Tatyana Vladimirovna,
Tyapkina Anzhela Pavlovna, Mityaeva Anna Mikhailovna and Baranov Yuri Nikolaevich
FSBEI HE "Orel State University Named after I.S. Turgenev", Oryol, Russia

Abstract: The study highlights the importance of the system of environmental education and upbringing and presents a scheme of a pupil's personality development within the framework of a three-stage method of environmental culture formation.

Key words: System of environmental, education and up bringing, three-state model of environmental culture formation, emotional-motivational, sphere of personality

INTRODUCTION

At the beginning of the 21st century as a result of intensive development of modern society schoolchildren have less and less time to communicate with nature. The substitution of the real world for cyberspace has become one of the most serious problems nowadays. Quite often when a child who has no skills of communication with the environment comes in contact with it the consequences can be irretrievable.

At the end of the 20th century the educational practices on the territory of the Russian federation were supplemented with the system of environmental education and upbringing of schoolchildren which instils in them the necessity of a responsible attitude to nature. We suggest that the system of environmental education and upbringing should permeate through all school subjects.

The activity-oriented character of studying nature is put into practice through a system of pupil's environmental training (the work of school clubs and study groups, lessons held at the city's young naturalist centre, extracurricular activities organised at lyceum No. 18 in Orel, Russia) that teaches them to perceive themselves as caring and thrifty proprietors of their native region. Thus this way through the system of environmental education and upbringing the changes in schoolchildren's "inner nature" as well as in their environmental consciousness occur (Fedyaeva and Tyapkina, 2016).

Relevance and objectives of the research: This issue becomes particularly topical during the process of schoolchildren's education and upbringing because our personality is formed during school years. Communication

with nature forms schoolchildren's cognitive interests, develops their creativity and improves their knowledge about the world around them which may later on grow into a craving for contact with different living organisms.

The analysis of the current state of affairs in the system of education in Russia demonstrates that the actual education and upbringing of schoolchildren in modern schools amounts to nothing more than empty slogans while in reality the number of class hours is reduced and we can only pin our hopes on extracurricular activities the amount of which is determined by the administration of the educational establishment. As a result the modern Russian school has lost its system integrity which ensures formation and development of environmental culture (environmental civility) at the level necessary to meet the latest requirements (Blimnikov, 2002).

The existing theoretical foundations of environmental education developed by the renowned educators at the end of the 20th and at the beginning of the 21st century turned out to be cut off from the actual work of different educational establishments. The lack of the uniform system of environmental education and upbringing has had an impact on the school-leaver's erudition level in this sphere. The present-day reality indicates that Russian schoolchildren have unsystematic and disconnected from the real life needs knowledge their system of environmental values and guidelines has not been formed.

Organisation of the experimental study and its results: Effective implementation of the function of environmental consciousness leads to the development of environmental culture among school-leavers. In the view of the aforesaid we propose a three-stage system of accomplishing the objectives that can be represented by a dynamic "forest model" (Fig. 1).

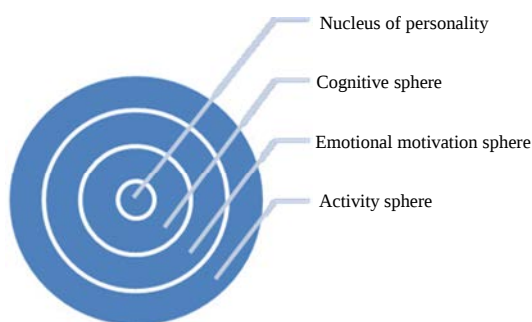


Fig. 1: The scheme of a schoolchild's personality development within the framework of a three-stage method

At the first stage the cognitive impulse from the schoolchild's personality nucleus develops and enriches his cognitive sphere. Later at the second stage his emotional-motivational sphere is enhanced. At the third stage the development of the activity sphere takes place. In its turn the cognitive impulse from the activity sphere returns to the schoolchild's personality nucleus (each person's inner self) through the emotional and cognitive spheres thus developing all spheres of a pupil's personality.

The three-stage system enables a teacher to thoroughly plan his work aimed at creation of the learning environment that promotes development of the inner content of education on the basis of personality-centred learning. In the process of its implementation pupil's knowledge and skills are improved their cognitive interests are developed their activities become more dynamic their personalities are formed and the level of their environmental culture is raised.

Each stage of the three-stage method corresponds with its layer of the forest: grass, shrubs or trees. Each stage stipulates a direct contact with animate objects ("a child's immersion into nature"). In order to put this process into practice a biocomplex, a nature trail, model ecosystems of a forest and a water body were created on the premises of lyceum No. 19 of the city of Orel. Communication with wildlife objects at the lessons, during after-school and practical work develops schoolchildren's cognitive interest and simultaneously makes it possible to bring pupils up in accordance with the goals.

The first stage of environmental culture formation in the model under study (the layer of "grass") is an environmental introductory course or an environmental vseobuch (a portmanteau word for "universal compulsory education"). At this stage a teacher defines some environmental notions and thinks over different variants of teaching them in class. Field trips or lessons conducted in the forest on the meadow in "the green classroom" in

the biocomplex or in the model ecosystems arouse keen interest on the part of pupils. Integrated lessons also deserve attention. Besides, there are new effective forms of lessons: immersion lessons, thinking lessons. "Broad" or cross-curricular integration of different specialized educational programmes, for example, environmental science and mathematics, biology and mathematics exerts considerable influence on the development of a pupil's personality.

Despite the fact that the forms of the environmental vseobuch are numerous, all of them are aimed at achieving the major objective of the first stage which consists of the acquisition of sound knowledge about wildlife objects, populations, environmental laws. At this stage the cognitive sphere of a schoolchild's personality is developed.

The second stage (the layer of "shrubs") is extracurricular work related to local history, geography and culture studies. It is implemented through a system of summertime tasks, workshops, research projects, library-research papers and weekend clubs. Work carried out in this direction leads to the formation of schoolchildren's view of the world. Here the emotional-motivational sphere is developed (Mityaeva, 2008, 2010).

The third stage (layer of "trees") is hands-on practice. It has a form of coherent well-planned year-round work in the framework of the school environmental movement. It is characterised by close collaboration between senior and junior schoolchildren, establishment of traditions, formation of informal teams where everyone can find his/her way to contribute to the environmental protection.

At the same time environmental collaboration promotes individual development and formation of each pupil's personality, turns him into a person who can think and act on his own in modern conditions and harmonise his actions with interests of nature, society and people around.

MATERIALS AND METHODS

Research methodology includes the fundamental principles of development of society and science, history and logic in pedagogy. The work was carried out in lyceum No. 18 of the city of Orel during which the activity-oriented, resource-based, dynamic, culturological, hermeneutical, holistic and system approaches the concept of the system structure of the biosphere and society with its public components; integrated education and upbringing were taken into account. On the basis of the singled out approaches and principles we determined the conditions which favour the accomplishment of the

formulated objectives of schoolchildren's education and upbringing. V.I. Vernadsky's noosphere concept, basic postulates of modern environmental psychology and ecopedagogy form the theoretical background of our research. The research uses a wide array of general scientific and special pedagogical methods such as theoretical analysis and synthesis of the problem; empirical methods (observation, questionnaire polls, pedagogical experiment); mathematical methods (statistical data processing); modern information technologies, scholarly disputes, publications (Pavlov, and Kazakov, 2004).

The work has been carried out since 1987. 1987-1990 study and review of the scientific literature on the problem under study; renewal of the Biology classroom and organisation of the educational biocomplex; creation of the environmental association and establishment of the school forestry "Orel".

About 1990-1993-analysis and interpretation of the theory and organisation of the experimental work on the ecologisation of educational work at school; 1993-2000 formation of the system of environmental education and upbringing; testing of the proposed system at the proving ground of the ministry of education and science of the Russian federation.

About 2000-2015 systematisation of the materials; development of the programme of environmental education and upbringing; defence of candidate's dissertations; preparation and publication of monographs, books, articles.

The research uses such methods as "Alternative" which were developed by V.A. Yasvin, a methodology that diagnoses the intensity of subjective attitude to nature called "Naturolfil" and a verbal associative methodology "Aesop" by V.A. Yasvin, S.D. Deryabo.

RESULTS AND DISCUSSION

Our three-stage method creates the learning environment which enables a child's personality to develop and fulfil his or her potential through the cognitive and emotional-motivational spheres as well as practical activity. Continuous development from pre-school and primary school age (members of clubs and study groups) till the age of high school pupils and university students (alumni, who participate in the events and activities of the environmental association) takes place. Rich experience of the older generation is not overlooked either and they get actively involved in pupils' environmental and patriotic education.

Today lyceum No.18 in Orel houses a successfully functioning environmental association of schoolchildren. Its activities centre around the following directions: an environmental theatre, a biocomplex, a forest sector, environmental awareness, fight against poaching, "junior academy". Such a diversity of activities gives each schoolchild an opportunity to choose a practical application of his personality traits. Eventually, it leads to the development of his creative potential and culture in general.

Participants of the forest sector regularly feed birds and animals in wintertime, make and hang artificial bird's nests, plant trees and shrubs, conduct forest sanitation. High school pupils are members of the anti-poaching sector. Their tasks include protection of spruces in wintertime and of birches and first flowers in springtime, putting out campfires left behind in the forest, protection of fish spawning areas. Members of the environmental theatre act as environmental campaigners and perform in front of pupils of our school and other schools of Orel and Orel Oblast. Members of the biocomplex study animals and look after them. They organise city exhibitions and excursions that acquaint children with wildlife objects. The biocomplex serves as a kind of a veterinary clinic where injured animals are given help. The agenda of the sector responsible for raising environmental awareness includes dozens of meetings of the bioenvironmental study groups for primary school pupils and kindergarteners where children not only get to know a lot about wildlife but also learn to protect it under the guidance of their elders. "Junior academy" members study the ecological situation in the neighbourhood and areas surrounding the city of Orel and the upper reaches of the Oka. The majority of research projects are carried out at the request of the nature conservation organisations.

Special attention in recent years has been paid to organising and carrying out summer eco-ethnographic expeditions called "Ecofil" and "March of Memory". During these expeditions students study the history of villages (for example the village of Tagino) make audio and video recordings of the local folklore (songs and shastuskas or traditional Russian folklore ditties), take pictures and film traditional arts and crafts (embroidery, toys, spinning wheels and other handmade articles), monitor the ecological situation in the village and its environs, carry out dosimetric checks, clear out springs and nearby planted forests, collect litter along the banks of different water bodies. The team of agitators of the expedition gives performances devoted to various conservation issues in front of pupils of different schools. During "Marches of Memory" pupils look after soldiers' graves, plant flowers and trees, clear the neighbouring territory of litter, help to beautify monasteries (in the town of Bolkhov in the village of Novosil').

The work of the environmental association is diverse, its practices have proven their worth for over decades. We shall cite several examples. The goal of the campaign “Saplings near a Church” is spiritual development of the younger generation of Russian citizens during landscaping church territories with trees grown by pupils.

The goal of the campaign “Forest Fire” is to preserve the suburban forests in the environs of Orel from forest fires during the dry season. The campaign is implemented in the course of the operative work of groups of lyceum pupils consisting of 4-5 members who conduct environmental inspections, spread leaflets, talk to campers about the danger of campfires in the forest, put out left behind campfires and grassland fires. The campaign is annual (usually 30-40 campfires left behind are put out). But during the sweltering summer of 2010 as many as 136 campfires and grassland fires were put out. The work in the environs of Orel was conducted by 10 groups of pupils (46 in all). Suburban forests were saved (Deryabko and Yasvin, 1996).

The goal of the campaign “Springs of Orlovshchina” is passportisation and improvement of the springs of the central Russian upland which are the sources of many Russian rivers. During the campaign springs are detected, examined, described and issued passports. School children clear up litter in a spring and around it, remove silt, lay stones to form stairs, fix and make benches and footbridges, change fill pipes and tanks, scour stelae near springs, mow grass.

The environmental association encourages pupil’s creativity: poems, pictures and songs have received numerous awards of different contests. The coat of arms, emblems, anthem, banners and chronicles of the environmental association were designed and created by the lyceum pupils.

Over the previous three years pupils of lyceum No. 18 were award 27 diplomas of laureates and prize winners of Russian national contests. For example, Alenicheva Margarita became the winner of all-Russian contest “UNESCO-2007” was awarded the highest award (the silver cross) the medal and the honorary title at the contest “National Heritage of Russia”. 9 pupils became laureates of the regional ecological forum “Green Planet, 2009” in different nominations. For participation in the international birdwatching days the lyceum received 1 team commendation and 18 individual commendations from the Russian bird conservation union.

In 2010-2011 pupils of lyceum No.18 became the winners and laureates of the 15th International Youth Bios Olympiad. The head of the environmental association of lyceum No. 18. Pavlov (2010a, b, 2011, 2016) is a holder of the environmental order of “Green Cross International” in 1997. His awards include a medal and an honorary diploma of the state дума of the Russian

federation for environmental protection in Russia in 2008 a Janusz Korczak medal for the victory in the Russian national contest “Pedagogical Innovations” in 2011 the big gold medal of the Russian peace foundation in 2012 the Russian federation presidential prize in 2006.

Throughout these years the extensive experience has been accumulated and an efficient system of environmental education and upbringing has been created which is described and presented in many chronicles. About >80 works have been published among which there are 12 books and booklets exceeding 100 printed pages.

CONCLUSION

About >50 year ago (in the 60s of the 20th century) in many regions the first scientific societies and junior academies were founded. In Orel in the 70’s a junior academy “Iskatel” functioned and its members, pupils of different city schools, conducted different types of research. For example, pupils of school No. 36 studied the flora and fauna of the Oka and the Zusha Rivers, detected and described springs along their banks, determined the ecological advisability of the economic activity of collective and state farms and practicability of building their utility structures along the river banks.

School No. 18 conducted research in Medvedevsky forest, explored the Vytebet’ and the Zusha rivers, studied the history of Orel Oblast (first and foremost the episodes of the great patriotic war).

Now a days, in our opinion the formation of pupil’s environmental consciousness by means of creating the favourable person-oriented eco-regional learning environment should play a significant role in achievement of the declared objectives.

RECOMMENDATIONS

In modern conditions the major goal of educational research activity for pupils is gaining experience of independent cognitive activity in the educational process since the main purpose of any research is development of a pupil’s personality rather than achieving objectively new results both in fundamental and applied science. Research co-operation between teachers and pupils is implemented in different forms:

- Work with gifted children through the system of creative unions (for example, “Junior academy”, environmental association “Orel” and scientific society “Poisk”)
- Cross-class associations-hobby groups
- Cross-age creative groups united by common problems
- Joint teacher-pupil research and projects

Such a diversity of forms makes it possible to ensure universal education for children.

REFERENCES

- Blinnikov, V., 2002. [Ecological Education of a Future Teacher]. Oryol State University, Oryol, Russia, (In Russian).
- Deryabko, S. and V. Yasvin, 1996. [Ecological Pedagogy and Psychology]. Fenix Publisher, Rostov-on-Don, Russian, (In Russian).
- Fedyeva, T. and A. Tyapkina, 2016. [Eco-Regional Approach in Teaching Biology as Means of Activation of School Children's Cognitive Activity]. Oryol State University, Oryol, Russia, pp: 308-311 (In Russian).
- Mityaeva, A., 2008. [Healthy Lifestyle]. Moscow State Academy of Choreography, Moscow, Russia, (In Russian).
- Mityaeva, A., 2010. [Health-Saving Pedagogical Technologies]. Moscow State Academy of Choreography, Moscow, Russia, (In Russian).
- Pavlov, A., 2010. [Conserve Nature-Conserve Russia: The System of Ecological and Nature Conservation Work at School]. Kartush Publishing, Orel, Russian, (In Russian).
- Pavlov, A., 2010a. [Pupils Research in Nature]. Kartush Publishing, Orel, Russian, (In Russian).
- Pavlov, A., 2011b. [Competences of Environmental Culture and Safety of a Personality: Part 1 Methodological Foundations of Formation of Environmental Culture and Safety of a Personality]. Moscow State Pedagogical University, Moscow, Russia, (In Russian).
- Pavlov, A., 2016. [The Influence of Pupils and Students Research Activity on the Development of Environmental Competence]. Oryol State University, Oryol, Russia, pp: 258-262 (In Russian).