

Ecological education for sustainable development

Olga Ivanovna Gabdulhakova

Naberezhnochelninsky Institute (branch) of Kazan (Volga region) Federal University, prospect Mira, 13,
Naberezhnye Chelny, 423810, Russia

Abstract. The article is devoted to ecological education - next stage of integration of sciences for solution of ecological problems which are very up-to-date for Russia. Main tasks of ecological education are development and formation of ecological culture of personality and society, ecological consciousness and thinking, spiritual experience of interaction between man and nature which provides his survival and development. In order to assess the level of ecology studies at secondary school in 2000 the author performed formalized interview of 10th-graders from Kazan schools.

[Gabdulhakova O.I. **Ecological education for sustainable development.** *Life Sci J* 2014;11(8s):66-69] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 12

Keywords: ecology, social ecology, ecological culture, sustainable development, ecological education.

Introduction

Sociological studies show that people know very well about relationship of nation's health with environment, on the other hand, they deliberately and without mercy eliminate forests, fisheries, metals and diamonds deposits intending to survive at any costs in conditions of socio-economic crisis which is observed in our country in post-Soviet period.

In 1990 ecological education was prioritized in Russia on state level: in February of 1994 the United Collegium of the Ministry of education and the Ministry of nature adopted a Resolution about ecological education of students in educational facilities of the Russian Federation.

As early as in 1995 the Committee on ecology of State Duma developed federal law "About state policy in the sphere of ecological education" which was adopted by State Duma, approved by Federation Council in 1998 but rejected by the President. Federal law "About ecological culture" was also rejected; this law established key principles of state regulation in the sphere of ecological culture, defined authorities of state power bodies and main directions in formation of ecological culture of population on federal, regional and local levels.

Ecological education, in opinion of E. Khabarova, the Head of the chair of applied ecology and labour safety of Moscow state Academy of fine chemical technology named after M. Lomonosov is a basis of education for sustainable development [1]. 5th conference of the Ministers "Environment for Europe" defines education not only as basic human right but as a key precondition for achieving sustainable development and most important tool of efficient management, balanced decision-making and development of democracy. Education for the purposes of sustainable development improves and strengthens potential of individuals, groups,

associations, organizations and countries; such potential allows to think independently and make choice for the purposes of sustainable development. It can change people's views, providing them with opportunity to make our world safer, more healthy and more prosperous, in such a way increasing the life level. [2]. Education for sustainable development is a process which lasts for the whole life, that is why it goes beyond the limits of formal education [3-11]. Its main subjects are governments and local authorities, education and healthcare bodies, mass media, civil society institutions. Education for sustainable development demands re-orientation of the main focus from mastering knowledge to understanding problems which appear in real life and finding possible solutions, to positive experience of solution of socio-economic conflicts.

Without sufficient support on federal level ecological education as a foundation of education for sustainable development is actively realized on regional level. In many regions of Russia complex programs on ecological education have been adopted. For example, in the Republic of Tatarstan since 1997 targeted complex program "Ecological education of the Republic of Tatarstan people" is in force. In different regions of the country ecological education programs are actively implemented in kindergartens with due regard to local natural, national and social traditions which corresponds to the tasks of education for sustainable development. Propaganda of ecological knowledge in kindergartens is provided through the All-Russian contest for the best inculcation of ecological education, organized by Central Council of All-Russian nature protection; and depending on the results of the contest All-Russian conferences "problems and perspectives of ecological education of young people in kindergartens and primary school" are held; the Council awards the

winners of the contest, sends best programs and methodological aids to kindergartens. Teachers look for the way to show phenomena in their dependency on the laws of nature, inculcation of humanitarian attitude to all alive: they create together with children flower gardens, kitchen gardens, Alpine rock gardens, ecological paths, winter gardens, organize targeted walks, ecology excursions, observations, nature-study games, ecological celebrations, musical shows devoted to ecology topics.

Ecological education of children initiated in kindergartens is continued in secondary general education school, and here each stage of it has its own particularities. In primary school ecology studies are included into discipline "Surrounding world". Young schoolchildren form initial notion base in the sphere of interrelations of a man and nature, primary understanding of key ecological relationships and human behavior patterns in the environment. In order to broaden material teachers use facultative classes, walks along ecological paths, prepare and hold ecological celebrations, games, contests, exhibitions of pictures, work at schoolyard.

In case of older children discipline "ecology" is introduced at the expense of school program. For example in the Republic of Tatarstan in 2005 this discipline was taught in 215 schools, besides that 5,5 thousand of learners participated in 227 optional courses, and 9 500 learners were getting additional knowledge in 466 ecology associations. In 2010, in accordance with State report about the state of natural resources in the country and about protection of environment in the Republic of Tatarstan, 89 100 schoolchildren were covered by ecological programs; in 52 schools the discipline "ecology" was studied by 1662 learners; 2775 learners visited optional and elective courses; more than 17 000 schoolchildren studied through the system of additional ecological education which includes 6 ecological-biological centers and 27 ecological departments; in secondary specialized colleges 12331 students attended lectures on ecology and separate lectures on nature protection, elective courses, studied in ecology associations; at universities 28281 students got ecological education (specialties "ecology" and "environment protection"), attended special courses [12]. Besides that since 1994 in the Republic summer ecology camps operate, there were 54 of them in 2010 with 2335 participators. In the framework of activity of ecology camps the ecology conferences were held and the Republican meeting of young ecologists and forest-specialists [12]. The programs of the camps are intended for 5th-10th graders - the members of ecological, tourist, history-territorial study groups. In camps teachers organize theoretic and practical studies, clean river

banks and springs from garbage, organize evenings, celebration bon-fires, contests of pictures, slogans, performances of propaganda teams.

In order to assess level of ecology lessons in secondary school the author in 2000 made formalized interview in 3 Kazan schools; the respondents were 117 schoolchildren from 10-grade. The schoolchildren had to answer questions about the meaning of the word 'ecology', do they know what anthropogenic landscape is, what is ecological danger is, and extraction of which natural resources results in maximum pollution of environment; how anthropogenic activity influences nature. For comparison we chose schoolchildren who studied ecology at ordinary classes of chemistry, biology, physics (school 11 of Vakhit region); schoolchildren of the ecology school (school 143 Novo-Savinov region) and schoolchildren who studied ecology at option classes with a head of regional Center of ecological education (Gymnasium 7 of Vakhit region).

The answers of schoolchildren have shown that most profound knowledge was taught in Gymnasium 7. For example, schoolchildren from the school 11 answered that they got ecology knowledge at the classes of chemistry, biology, physics; students of school 143 added to them such disciplines as foundations of life safety, elective course of medical aid; students of gymnasium 7 answered that side by side with natural disciplines they also learned ecology at the classes of history, literature, Tatar language, English language, foundations of market economy and in optional classes.

The answers of gymnasium 7 were more full and detailed which points out to the necessity to include ecology into all school disciplines, not only into natural disciplines; also specific programs must be organized which promote the idea of sustainable development, propaganda of careful attitude to natural resources, especially to fresh water, shortage of which has become a problem for more than 1 billion people of Earth, non-renewable energy resources. Schoolchildren must understand the essence of global, regional, national and local socio-economic problems, effects of influence of industry on environment which affects their health. The answer to the question why it is so important to introduce education for sustainable development in secondary school was determined by the interview of 1997: 44,7% of respondents answered in the affirmative, they studied ecology in specific education facilities, and 37,5% of them mentioned secondary school. Main task of school education is upbringing of comprehensively developed personality which must be developed physically and spiritually. Education for sustainable development is

one of the links of ecological world view inculcation in our children. The key education tasks are to make students aware of ecology problems, to awaken responsibility for the environment.

The teacher of school 143 A. Semenova in 1998 started to teach optional course on ecology in 1st grade. Teacher T. Chugunova from the same school teaches optional course "Game-like ecology". Students prepare special materials for classes, hand-made things, puppets for performances. The classes are held in vivid form, they are interesting, performances facilitate development of creative and artistic abilities of children. Open lessons were held many times – master-classes for teachers of the region, city, republic. The teacher was invited to the courses on ecology organized for the teachers of Kazan, Zelenodolsk, Nizhnekamsk and Bavlinsk and Yutazinsk regions where she in the framework of experience exchange told about the work of her school.

7-8th graders study ecological classification of plants, animals, get acquainted with bio-indication. 9-10th graders attend optional course "Ecology of Russia and Tatarstan". Schoolchildren 2 years in succession make presentations at scientific-practical conferences "Science - to the young" where they present scientific-research projects on ecology. Their work is awarded with diplomas. Large-scale out-of-class work on ecology is performed: 10-11th graders attend CRD of Novo-Savinov region where they study the work laboratory ecologists, attend additional classes in the university. For several years students went to SPK of Kirov region studying disciplines "Human ecology", "Foundations of general ecology"

Also it became a tradition in school 143 to organize "Day of birds", "Week of natural sciences", participate in contests of ecological pictures, slogans. While celebrating Day of Earth after official opening of the event pupils with parents and teachers plant trees, bushes. In the evening Clubs of Funny and Inventive, contests, discotheques are held. Teachers of geography, biology, chemistry are organizers and active participators of all ecology initiatives and celebrations. The chair of natural sciences at school 143 elaborates methodological theme "Ecologization of knowledge aimed to keeping and strengthening of human health". The plan of work of the chair includes reports of teachers on ecological-valeological issues. Many times teachers of biology: T. Chugunova, O. Fokeeva, T. Bogova, teachers of chemistry: L. Pavlovitch and O. Orlova made presentations on ecological education on teachers councils and regional meetings of methodical associations. Teachers buy additional literature, slide films, video films. In spite of all difficulties teachers

work, create, involve children and teach them. For example, many 10th-graders of school 143 through optional courses and out-of-class activity got involved in natural sciences. In this school additional hours of biology, ecology, chemistry are included into curriculum. For example, teacher of chemistry O. Orlova taught this grade "Everyday chemistry", "Ecology of industry". The schoolchildren write library research-papers, prepare speeches, work with literature on Red book of Kazakhstan. Children drew wonderful pictures of rare plants and animals. Teacher of biology Basova T. teach valeology for 5-6th graders. All speeches of geography, biology, chemistry teachers on teachers councils, methodological associations, conferences are registered.

Next step in the system of education for sustainable development must be higher school. Students of practically all specialties study disciplines "Foundations of life safety" (100 hours), "Environment protection and rational nature management" but this is insufficient for changes in the values system and formation of ecological world-view. Like it was in secondary school ecology theme must be present in all humanitarian disciplines, general scientific and professional disciplines.

Corresponding Author:

Dr. Gabdulhakova Olga Ivanovna
Naberezhnochelninsky Institute (branch) of Kazan (Volga) Federal University, prospect Mira, 13, Naberezhnye Chelny, 423810, Russia.

References

1. Khabarova, E., 2006. Ecological education is a framework of information cocoon "education for sustainable development". Problems and perspectives of ecological education in union state. Moscow.
2. The EEC ONN project for education in the interests of sustainable development, 2004. Geneva.
3. Muravyeva, E., 2005. Development of ecological education in Kazan University. Technologies of improvement of pedagogical staff: theory and practice. Intrauniversity collection of scientific works devoted to the 1000-anniversary of Kazan. Issue 5. Kazan: Tatar publishing house, pp: 161–164.
4. Belyaeva, A., 1999. Interrelation of ecology and pedagogy in the structure of continuous ecological education. Problems of North-West: ecology and education: theses of reports of scientific-practical conference. St. Petersburg, pp: 7 – 8.

5. Koryakina, N., 1999. Principles of development of additional ecological education as a guarantee of sustainable education process. Issues of North-West: ecology and education: theses of reports of scientific-practical conference. St. Petersburg, pp: 112 – 113.
6. Cloud, P., 1992. Harmony. Biosphere. The man. New York, pp: 1-192
7. Eisele, L., 1979. Nature in ecological education. From knowledge to love. New-ore: Harcourt, pp: 1-300.
8. Materials of the international conference devoted to rational use and preservation of biosphere, 1968. Geneva, pp: 40-42.
9. Materials of the International symposium ecological education and environment of the American states, 1971. New York, pp: 1-134.
10. Mors, S., 1989. Ecological consciousness and planetary mentality. Los Angeles: Light, pp: 1-298.
11. Smith, P., 1961. Education by nature. New York: Wiking Press, pp: 1 – 260.
12. State report about the state of natural resources and about protection of the environment of the Republic of Kazakhstan in 2010. Kazan, 2011.

5/15/2014