

# ENVIRONMENTAL EDUCATION IN THE REPUBLIC OF TATARSTAN: SOCIAL ANALYSIS OF THE SITUATION

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## ABSTRACT

*This paper presents the results of research, aimed at assessing the level of satisfaction of environmental education in the Republic of Tatarstan. Objective of the research was to determine the state and development trends of environmental education and awareness in the Republic of Tatarstan. The analysis was conducted on the basis of results of long-term sociological research. The authors applied both quantitative and qualitative methods. Quantitative methods involved selective study of the environmental interests and values of the population. We formed the random, repetition-free, zoned, and quota samples. Qualitative methods were based on texts proposed to the students of Tatarstan schools and institutes on the stated subject. The responses to the questionnaires revealed dissatisfaction of the youth with the level of environmental education in the republic. For example, 88% of respondents are interested in information on environmental issues, and only 8% consider this information to be sufficient. 44.7% of respondents received environmental knowledge during their study, 40.8% – did not received; only 7.2% of respondents noted that the education system gave attention to the environmental knowledge. 27.9% of respondents consider necessary to study special subjects in the secondary school, as they contribute to the distribution of environmental knowledge among young people. Our findings indicate a mismatch in the needs of the population and the younger generation for environmental knowledge and the opportunities to obtain it at secondary school and additional education system. The results confirm the existing contradiction between the demands of the youth in the field of environmental education and the real state of teaching of environmental knowledge.*

**Keywords** *Environmental education, the Republic of Tatarstan, city of Kazan, surveys.*

## INTRODUCTION

The development of civilization has been associated with the intense anthropogenic impact on the environment. The level of this impact in recent years can be comparable with the intensity of global geological processes. This is reflected in the imbalance of the biosphere processes and leads to irreversible consequences (Meadows D.H. The Limits to Growth / D.H. Meadows, L.D. Meadows, J. Randers, 1994, p. 22; Ostrom E. , 2008, p.5; Christie M., 2001, 215 p.).

In this regard, the issue of environmental management becomes for mankind not just relevant problem, but, in fact, a matter of survival. The only real way out the situation is not just the application of new environmentally friendly technologies, but formation of

environmental thinking and worldview in people. The leading role belongs to environmental education and awareness (Wasescha L., 2000, p. 381; Vukicevic M.D., 2000, p. 381; Wiederkehr R., 2002, p. 55).

There is some experience in this area. It is based mainly on the experience of past generations. However, today it requires creative rethinking and application in modern conditions.

The efforts in the field of environmental education and awareness can be really assessed by conducting sociological surveys in the different segments of the population. Objective of the research was to determine the state and development trends of environmental education and awareness in the Republic of Tatarstan.

## RESEARCH METHODS

One of the first social-ecological research on the territory of the Republic of Tatarstan was the study "The level of formation of environmental needs of the population of the Republic of Tatarstan" in 1997. The sample volume was 800 people. The sample composition was determined in accordance with the set quotas of socio-demographic characteristics of the respondents. Quotas were managed according to several parameters.

The first parameter was the place of residence based on the degree of environmental stress: a) the residents of areas with a satisfactory environmental situation (10%); b) the residents of areas with moderate-intense and intense environmental situation (47%); and c) the residents of areas with troubling and severe environmental situation (43%).

The second parameter was the distribution of the respondents to urban and rural residents – 81.1% and 18.9%, respectively. Among the urban respondents, we distinguished people living in cities and towns, due to the most severe environmental situation in these areas.

The third parameter was the distribution of respondents by their gender and age: adult working-age men accounted for 54.2%, women - 45.8%; we formed 3 age groups: young - under 24 years (12.5%); middle-aged - 25-49 years (71.9%) and elderly - 60-59 years and older (13.2%).

The fourth parameter was the distribution of respondents by sectors of the economy: industry, transport, construction, communication (57%); trade, public catering (6%); housing and utility sector (2%); health care, social welfare (7%); public education, culture, science and scientific services (11%).

The fifth parameter was the distribution of respondents by educational groups: incomplete secondary and secondary education (38.6%); secondary professional education (36.3%); incomplete higher education (5.1%); and higher and higher with scientific degree (20%) (Yao L.M., 2004, p. 234).

Quantitative research "Public awareness on environmental issues" was conducted in 2000 (n=100), and addressed the issues of the quality of environmental education in the country. In January 2015, the participants of Open Environmental Forum "Zilant" (n=91) were surveyed, involving high school students, initially focused on understanding and solving of environmental problems.

In addition to the quantitative studies, the qualitative studies have been also conducted. It was a formalized interview, where respondents gave free answers to the preformed questions. To study the environmental ideas of students, a formalized interview was conducted in three schools of Kazan. The survey was conducted in 2000, and involved 117 tenth-graders; for comparison, the questions were asked to students who was getting environmental knowledge during standard chemistry, biology, physics classes (school No.11, Vakhitovsky district of Kazan); during environmentally-focused biology classes(school

No.143, Novo-Savinovsky district of Kazan) and special elective ecology classes with the teacher of the Center for Environmental Education (high school No.7, Novo-Savinovsky district of Kazan). Pupils had to answer questions of how they understand the word "ecology", whether they know what the anthropogenic landscape and environmental hazards are, how the human economic activity affects nature, what mineral resources cause the most pollution when mined.

In addition, in November 2011, the students studying the "State and municipal management" in KNRTU (Kazan State Research Technological University) answered in free form the questions of the formalized interview about what ecology knowledge they got while studying at secondary schools (n=41); and in January 2013 - the questions of the formalized interview about sustainable development (n=63).

## RESULTS AND SUMMARY

The respondents consider environmental education to be one of the most important factors in the preservation of natural resources. Answering the question in the study of 1997 about "what can be done to preserve the natural resources of Tatarstan?", the residents put environmental education at the third place. In general, the distribution of responses has shown that citizens are fairly well aware of the need for strict government regulation in the environmental sphere through legal and educational institutions, through the institute of public opinion, institute of local government and through public organizations. The residents of Tatarstan consider it most important to introduce tough penalties for those who pollute nature - 60.6%; next answers were: to adopt new laws to protect nature - 50.8%; create a system of environmental and humanitarian ideas of the world and man's place in it, education, to form the environmental culture - 46.7%; to expand the practice of environmental impact assessments and to inform about the results - 37.7%; to consider the views of ordinary people in making decisions - 32.7%; to expand the rights of cities and regions in the environmental protection - 20.8%; to maintain the environmental movements - 17.2%; to introduce additional taxes for the preservation of nature - 9.1%; and to ask foreign companies for economic assistance - 7.4%. If we put into practice all ideas important for the public, then perhaps society will enter a new phase, which will result in the social partnership, openness, civic responsibility, mutual trust of the authorities and the population, i.e., the state called civil society.

The main objective of environmental education is not so much to increase the level of scientific knowledge as to form a holistic view of the world, emerging from the scientific, philosophical ideas, and which determines the selection of variants of behavior in relation to nature.

To find out the level of awareness of the students of secondary schools of environmental issues, the survey was conducted in three schools of Kazan. The survey was conducted in 2000 in three schools in the city of Kazan, in the form of formalized interview. Pupils had to answer questions of how they understand the word "ecology", whether they know what the anthropogenic landscape and environmental hazards are, how the human economic activity affects nature, what mineral resources cause the most pollution when mined.

Their answers showed that the most in-depth knowledge on the ecology was provided in gymnasium No.7, teaching the ecology at a special lesson with the director of the Center for Environmental Education. Pupils of school No.11 exemplified natural science subjects as sources of environmental knowledge (chemistry, physics, biology); pupils of school No.143 added to these subjects the lessons in medicine, basics of life safety; pupils of

gymnasium No.7, in addition to natural science subjects, received environmental knowledge from such subjects as literature, history, Tatar, English, and foundations of market economy.

During the period of transformation, the environmental knowledge in various educational institutions were provided to 44.7% - these respondents in the Republic of Tatarstan answered affirmatively to the question of the study of 1997 "Did you received the environmental knowledge during your study?"; 37.5% of them answered that they obtained environmental knowledge at secondary school; 14.9% - at high education institution; 7.5% - at college; and 3% - at vocational schools (Yao L.M., 2004, p. 218). These figures show the importance of a comprehensive high school in the chain of continuous environmental education. According to the Ministry of Education of the Republic of Tatarstan, in 2014, 213 schools had classes in ecology at the expense of the variable regional component, and 232 schools taught ecology as an elective subject.

The surveyed pupils gave the correct answers to all the questions, but the answers of pupils of school No.7 were more complete and profound. For example, pupils of school No.11 gave the definition of ecology as the "science of the relationship between man and nature", "the science of the home", "everything that surrounds us"; pupils of school No.143 made emphasis on the protection of nature: "Ecology - the science of environmental protection", "the science of the environment and its protection"; pupils of school No.7, having received environmental knowledge not only from the natural science subjects, but from the humanities, have focused on the human impact: "ecology - the science that studies the relationship of living beings and the human impact thereon", "it is the science that studies the environment, its condition, and its effect on a human" (Yao L.M., 2004, 311 p). Pupils have a clear idea of what mineral resources cause the most negative impact on the environment when mined (in the Republic of Tatarstan - oil, construction materials, shales, huge water reservoirs, construction of nuclear power plants); what the consequences the long-term extensive economic activity have brought for the environment (deforestation, depletion of mineral resources, earthquakes, air pollution, water pollution, loss of biodiversity, a threat of extinction of animals, a threat to human health). The pupils often associate the concept of "ecology" with the concept of "security", "protection", "threat to the environment", which indicates the ways of influencing the minds of children who are very sensitive to the unjustified aggression, injustice, and insecurity. The preservation of nature raises, gives sense to actions of pupils, matches with their ideas about the ideal destiny of a human (Yao L.M., 2004, p. 140).

Our research has shown that the most correct decision in the formulation of environmental education in secondary school would be to combine ecology as an individual subject, and to ecologize other subjects, fill their content with achievements of science in environmental and resource-saving technologies, new ideas in the humanities.

The vast majority of respondents-participants of the environmental conference "Zilant" believe that secondary schools have to introduce a special subject "Ecology": "yes, definitely" - 31.5%, "more likely" - 36% ("no" and "probably not" - 0.9% and 7.2%, respectively). 58.5% of respondents answered "yes" the question "How do you think whether the environmental situation in the city is associated with the level of environmental education of the population?". Nearly half of the respondents - 48.6% - believe that the level of environmental awareness of the population can be improved through "strengthening the environmental education". The fact that the level of environmental education is far from the desired, can be proved by the responses of the students studying "State and municipal management": 7 of 63 students answered correctly the question of what "sustainable development" is.

The students commonly wrote: "no environmental knowledge and knowledge of sustainable development received during study at school"; "I knew about the sustainable development program, but did not understand how it works, what it includes"; "no information on current state of the environment and nature was provided"; "I never studied ecology before entering the institute"; "Non-effective education and training system in this area".

## CONCLUSION

One of the most acute problems of our time in solving environmental problems is to educate an environmentally literate generation. The research conducted by the group of authors allows speaking about insignificant level of environmental education in the modern Republic of Tatarstan.

Our findings indicate rather a mismatch in the needs of the population and the younger generation for environmental knowledge and the opportunities to obtain it. In fact, nowadays, there is a quite acute contradiction between the demands of the youth in the field of environmental education and the real state of teaching of environmental knowledge.

The latter aspect was especially clearly manifested during the XXVII World Summer Universiade in Kazan. It was found then that the emotional sentiment in the society puts the aggravated environmental problems on the back burner (Bagautdinova N.G., Mingazova N.M., Zamaletdinov R.I., Panasyuk M.V., Safiullin L.N., Gafurov I.R., Glebova I.S., Zotova F.R., Kadyrov A.R., Suslova O.B., 2015, p. 115; Mingazova N.M., Zamaletdinov R.I., Derevenskaya O.Yu., Palagushkina O.V., Nabeeva E.G., Pavlova L.R., Shigapov I.S., Mingaliev R.R., Nazarov N.G., Zaripova N.R., 2015, p. 470; Zamaletdinov R., Kornilov P., Mingazova N. , Dautov A., 2014, p. 235).

## ACKNOWLEDGEMENTS

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

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