
Research of Student Ecological Intention Development Level

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Abstract

The study relevance: The present stage of education development is characterized by the development of ecological consciousness of young people which becomes more and more important and relevant. Particularly, the development of ecological intention as a structural component of ecological consciousness is of particular importance. The purpose of the study: based on the study of theoretical and methodological foundations and approaches in understanding the specifics of the individual's ecological consciousness development, to identify the features of the development of ecological intentions of students for sustainable development of Man and Nature. The study methods: the leading method for the study of this problem is the experimental method. Within the study of the environmental intentions of students, we used an experiment with students of various faculties (law, chemical-biological, electrical engineering) where the students of the 1st, 3d, 5th courses participated. Results: the article presents a thorough and detailed analysis of the concepts of ecological consciousness and ecological intention. As a result of the experiment it is revealed that students of chemical-biological and electrical engineering faculty can better offer options for solving environmental problems than students of the faculty of law; among the students of 3 courses, regardless of the faculty, there is a clear tendency to reduce the indicators of environmental consciousness and environmental intentions, which may be due to the increasing load in educational activities. The difference in indicators of ecological consciousness and ecological intention between the faculty of law and electrical engineering is insignificant, but in qualitative terms there are certain differences: students of the faculty of law, although not fully are aware of some aspects of nature, but, nevertheless, are ready to perform environmentally beneficial actions. Students of the faculty of electrical engineering have the opposite situation: despite the better awareness of environmental problems and the ability to offer better solutions in this regard, they have a low level of readiness for environmental action in terms of personal participation. Practical significance: the data obtained in the work can be used in education to build effective educational programs for the development of environmental consciousness; in practical psychology, environmental psychology, as well as for the further theoretical development of this issue.

Keywords: ecological culture, ecological consciousness, ecological intention, students

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INTRODUCTION

The concepts of ecology and culture are becoming one of the most relevant in the modern socio-cultural space; the value of their combination has increased much (Akimova et al. 2001, Alekseev and Pivovarov 2001, Bubnova et al. 2018, Cherkasov et al. 2015, Filatov et al. 2018, Petrovskaya et al. 2016, Prokofieva et al. 2018, Repina et al. 2018, Zaitseva et al. 2018). The Need for greening the consciousness of society is caused by objective factors reflecting the urgent needs of society: the dangerous severity of environmental contradictions, the reality of the environmental crisis, the need to prevent environmental collapse, the worsening of the quality state of the environment). All this makes it immutable that education plays an important role in overcoming the ecological crisis, as well as in solving all other global problems of civilization, which means that the ecologization of consciousness (individual, mass, professional) is one of the most important goals today (Berkunova 2001, Cherdymova 2013, Faleeva et al. 2017, Frolov 1986, Khapai 2009, Potapova et al. 2018, Shcherbakov et al. 2017). To understand in detail, the specified subject, it is necessary to reveal a number of the following concepts. Greening is the process of consistent implementation of the ideas of nature conservation and sustainable environment in the sphere of legislation, management (Grebennikov et al. 2013), technology development, Economics, education, etc. (Firsova et al. 2018, Kvon et al. 2018, Lubnina et al. 2016, Peredel'sky et al. 2007, Rudenko et al. 2015, Vinogradov and Bal'zannikov 2008, Zaitseva et al. 2017). Ecological culture is a historically defined level of development of society, creative resources and abilities of a person, expressed in the forms and types of organization of life and in the material and cultural values created by a person, in which there is a deep and universal awareness of environmental problems in the life and development of mankind (Cherdymova 2013a, Sitarov and Pustovoytov 2000). Environmental education is understood as a continuous learning process aimed at the acquisition of systematic knowledge about the environment, skills and environmental activities, the formation of environmental culture (Turkatso 2003). In addition, *ecological education* and *ecologized education* also differ: the first is a projection of the cognitive system *ecology* on the cognitive system *education*, and the second means education, brought into line with the principles of ecology (Losev and Provadkin 1998, Panov 2004, Reimers 1992). In the process of environmental education, the contradictions between the proposed to the personality science-based choices and the formed

stereotypes of household behavior are intensifying; between the ideal image of the environmentally educated person, and almost impossibility to find this pattern in a real environment; between the requirements imposed to the individual in terms of standards of ecological culture and real ecological-cultural experience of living in the area ethnic groups (Cherdymova 2013b, Medvedev and Aldasheva 2001). In this regard, we believe that the strategic objective of environmental education is to ensure Russians the conditions to acquire and master key concepts and skills that promote safe human interaction with the natural environment. The creation of a developed stable functioning system of continuous environmental education, upbringing and training as a basis for the formation of ecological culture requires consistent, thorough financial support, legislative consolidation as a constitutional norm. To better understand the problem of eco-education, it is necessary to consider culture-centered and activity-based approaches. The most important source of environmental education is the ecological culture of the people - the crystalline experience of material and spiritual adaptation of the ethnic group to the world, including the traditions and customs of folk ecology (Bhangba 2004, Gorelov 2005, Kochergin et al. 1987, Zheltukhina et al. 2018). Stages of personal, cognitive, communicative and social development of a person, reflecting different aspects of his / her formation as a subject of ecologically oriented activity - this is an activity-based characteristic of ecological culture formation. Education in General, and environmental education in particular, is not only the most effective but also the most contributing way to prevent unwanted environmental disasters in the future. It contributes to the formation of a versatile personality of a specialist, combining a high professional level with humanistic worldview (Shagun et al. 1994, Zakhlebnyi 2000, Zborovskiy and Shuklina 2004).

Environmental consciousness includes as patterns of interaction between society and nature, and various kinds of empirical knowledge, attitudes, and traditions of a particular culture, which has important environmental significance, and also value-based phenomenon in relation to nature, a system of regulatory principles of moral character (Sorokoumova and Bogatyreva 2016, Zalygin 1992). At the moment, in psychology, the concept of *intention* is interpreted as a conscious desire to complete the action in accordance with the planned program aimed at achieving the intended result.

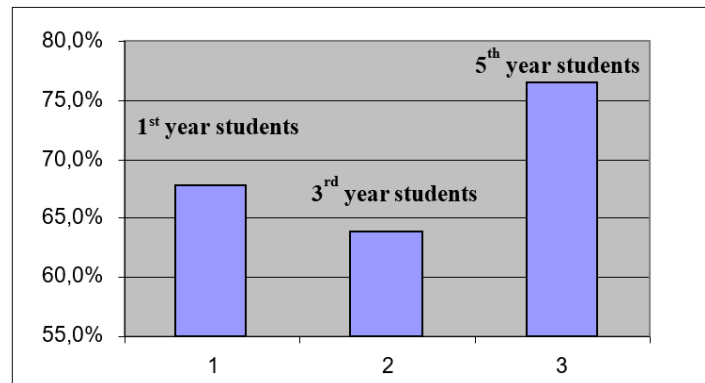


Fig. 1. Level of student ecological consciousness development among 1, 3, 5 courses

MATERIALS AND METHODS

The Study Methods

To study the level of development of environmental intentions among students, we used the method of experiment. The following groups of students participated in the experiment: students of the 1st, 3rd, 5th courses from law, chemical-biological and electrical engineering faculties.

In the pilot study, we found that students of all the 5th courses can better offer options for solving environmental problems than students of the 1st and 3rd courses. These courses, regardless of faculties, according to the level of development of ecological consciousness, are arranged in the following order: the 5th courses (76.5%), 1st courses (67.8%), 3rd courses (63.8%), which corresponds to the 1st, 2nd and 3rd places.

There is also a tendency among all the 3-rd courses to decrease in all the sections separately and environmental consciousness in General, while in the 1st and 5th courses, the same parameters are higher, and in the 5th courses are the highest. In relation to the 3rd courses, the decrease in all of the above indicators may be due to the increasing load in the training activities, or other factors (in addition to internal), consuming effort and time, for example, job. In the case with the 5th courses, high rates may be due to a higher level of awareness of environmental problems.

Students of chemistry and biology faculty, regardless of the course, in general, are more responsible for the environment in all its aspects, and therefore have the highest level of environmental consciousness.

The Experimental Base of the Research

The study was conducted on the basis of universities. The experiment involved students of law,

chemical and biological, electrical engineering faculties, of the 1st, 3rd, 5th courses.

RESULTS

Most students (3 and 5 courses) of the faculty of law, less responsible for the environment in many aspects, and therefore have the lowest level of environmental awareness. The exception is the 1st year students of the faculty of law, who according to the results of testing, received higher marks on the overall level of environmental awareness, which may mean a more responsible attitude to nature, in comparison with the 3rd and 5th year students of the faculty of law. Students of the faculty of electrical engineering, occupy an intermediate position. This means that students of the faculty of electrical engineering can offer no less effective ideas for solving environmental problems than students of the faculty of chemistry and biology. However, the exception is the 3rd year of the faculty of electrical engineering, which has the lowest rate of environmental consciousness due to external and internal obstacles to environmental action, as well as a negative assessment of the environmental situation in the city, underestimating the importance of their own efforts and strong negative emotions associated with the perception of garbage in nature.

Students of all the 3rd courses on the column *Knowledge* is recommended to focus their attention not so much on the obstacles to environmental activities, but on ways to overcome these obstacles, as well as on ways of self - motivation, because *laziness* or *the lack of time* is a clear or hidden lack of motivation and interest. In this regard, it is recommended to attend environmental volunteer actions together with teachers and fellow students, as joint work strengthens relations within the team and motivates further participation in such actions. It is also recommended to better understand the concept of *environmental consciousness*, and to improve the ability to offer a variety of options to

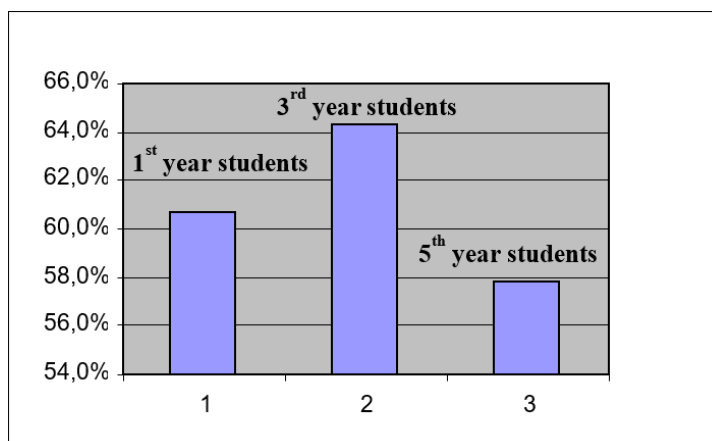


Fig. 2. Students' satisfaction with their own environmental activity (distribution by courses)

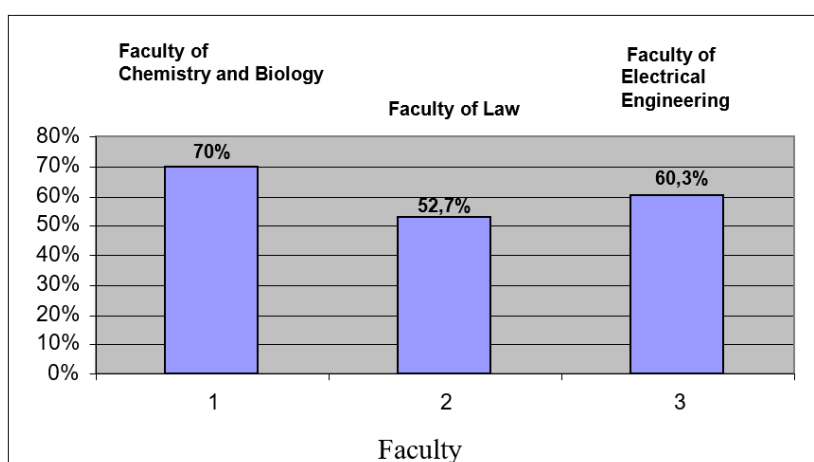


Fig. 3. Students' satisfaction with their own environmental activity (distribution by faculties)

solve environmental problems, especially in relation to people, and not to be in the confidence that *nothing is possible*. According to the column *Assessment*, it is recommended to improve the positive attitude to the problems and their solutions related to natural conditions in the city, i.e. in addition to the statement of the fact that the city's ecology is terrible and bad, however, it is necessary to begin to gradually change their attitude towards the fact that the environmental situation in the city should be better (this is a constructive direction) and not cease to apply to this maximum of active practical efforts. As for the column *Attitude*, it is recommended, if possible, to remove garbage from the natural landscape, and not to be limited only by only chagrining about it. Compliance with the above recommendations will help to improve environmental consciousness.

According to the *Satisfaction* scale, all the 3rd courses (64.3%) have a slight quantitative advantage in comparison with the 1st course (60.7%) and 5th courses (57.8%), which corresponds to the average level (51-74%) of satisfaction with their own environmental

activity, except for the 5th courses, where there is a tendency to a low level (10-50%) of satisfaction with their own environmental activity.

The above data may mean that students of all the 3rd courses are more satisfied with their environmental activity than students of all the 1st and 5th courses. However, this satisfaction is more subjective than a realistic for such a feeling. This means that the students of the 3rd year, although are satisfied with their *activities*, but in terms of constructive practical actions, as well as the desire to help nature, show much less activity than the 1st and 5th year, which is confirmed by reduced indicators on the scales of *Motivation* and *Behavior*. The average value on the *Satisfaction* scale of each faculty, regardless of the course has the following values: chemical-biological faculty (70%), electrical - engineering faculty (60.3%), law - (52.7%).

This may mean that students of the faculty of chemistry and biology are the most satisfied with their environmental activity, and law students are satisfied less. Students of the faculty of electrical engineering

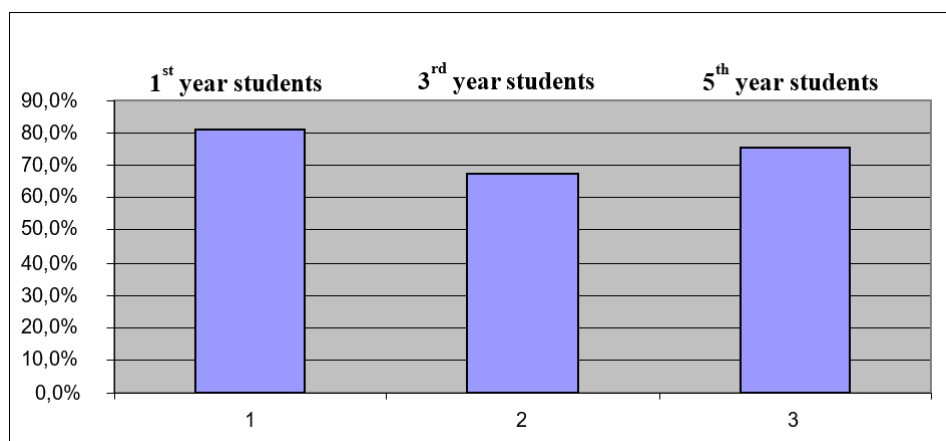


Fig. 4. Level of student ecological behavior development at different courses

occupy an intermediate position. This arrangement on the *Satisfaction* scale seems obvious, but contains a number of nuances. Students of the faculty of chemistry and biology have the highest rate, because they have more theoretical and practical experience in a variety of environmental activities, they are highly motivated and actively participate in such events. The majority of students (the 3rd and 5th year) of the faculty of electrical engineering have satisfaction which is rather subjective. This means that the students of this faculty, although are satisfied with their *activities*, however, in terms of constructive practical actions, as well as the desire to help nature, show much less activity, which is due to the initially low motivation, as well as little theoretical and practical experience in the field of environmental volunteer actions. In other words, they are generally not interested in environmental activities, and as a consequence, the desire and activity in this area is reduced, which is confirmed by the lowest indicators on the scales of *Motivation* and *Behavior*. The exception is the 1st year students of the faculty of electrical engineering, whose performance on the scale of *Motivation and Behavior*, are the highest in this faculty. Students of the faculty of law are able and willing to take part in environmental volunteer actions, which is confirmed by high indicators on the scales of *Motivation and Behavior*, but due to the presence of certain obstacles, cannot always help nature, resulting in dissatisfaction with their own environmental activity. The overall *Satisfaction* rate for all courses and faculties is (61%), which corresponds to the medium level (51-74%) of satisfaction with their own environmental activity. This may mean that students of all faculties and courses are generally satisfied with their environmental performance, but this figure is only slightly higher than the trend to a low level.

On the scale of *Behavior* among all the 1st courses (81.1%), in comparison with the 3rd (67.5%) and 5th (75.4%) courses there is a slight quantitative advantage, but despite this, the performance of all courses, except the 3rd correspond to a high level (75-100%) of the development of environmental behavior.

The above data may mean that students of all the 1st and 5th courses show greater behavioral activity in practical assistance to nature than students of all the 3rd courses.

The average value on the scale of *Behavior* in each faculty, regardless of the course has the following values: chemical and biological (85.7%), law (74.5%), electrical –engineering (63.7%).

This may mean that students of the faculty of chemistry and biology are the most active in terms of providing environmental assistance to nature, and students of the faculty of electrical engineering are the least active. Students of the faculty of law occupy an intermediate position. This may mean that the students of chemical-biological and law faculties in the majority are ready to take part in environmental volunteer actions, while the students of the faculty of electrical engineering, show in this respect a great passivity. However, there are a number of nuances; behavioral activity is differentiated, namely: all faculties, especially law, owe their first-year students the results on the scale of *Behavior*. In other words, largely at the expense of freshmen all faculties have higher scores on the scale of *Behavior*, which can mean greater environmental activity of all the 1st courses, which does not depend on the faculty. Among the 5th courses the behavioral activity is also differentiated, because due to the exorbitant rate among the 5th course of the faculty of chemistry and biology (96.6 %!) on the scale of *Behavior* we get a high (75.4%) rate for all the 5th courses. While the 5-th

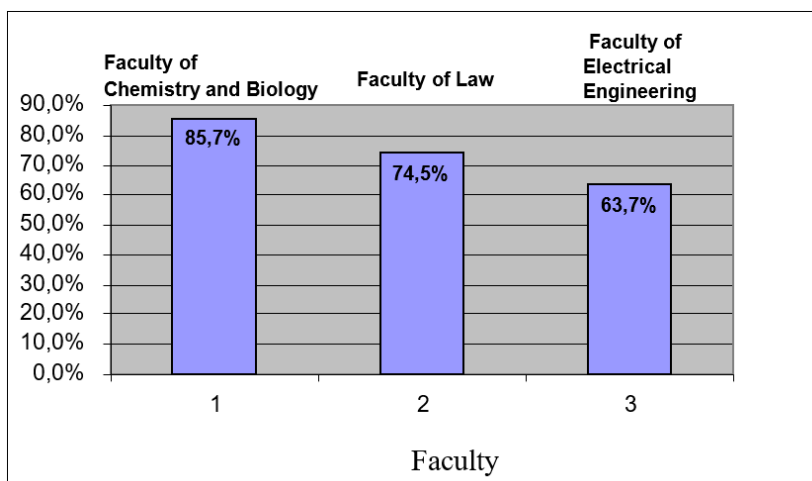


Fig. 5. Level of student ecological behavior development at different faculties

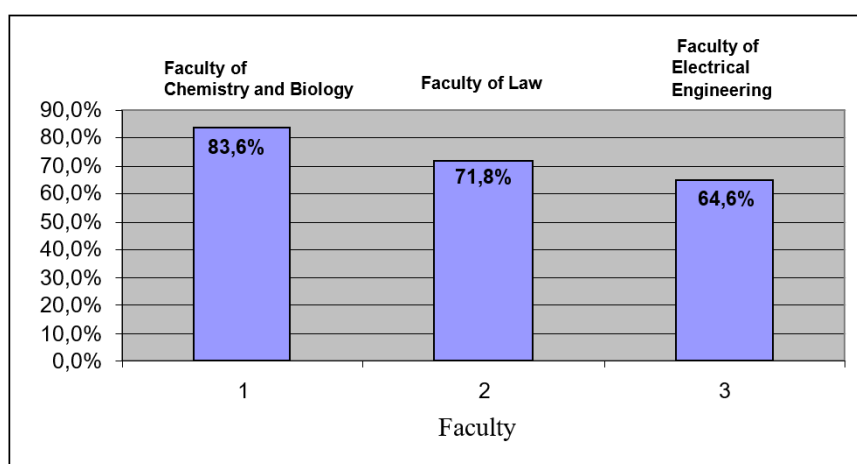


Fig. 6. Level of student ecological intention development at different faculties

courses of law (67%) and electrical –engineering faculties (63, 3%), the figure are much lower, this directly testifies to their reduced environmental activity.

The overall total indicator of ecological intention of all courses and faculties is (73.3%), which corresponds to the average level (51-74%) of the development of ecological intention with a tendency to a high (75-100%) level. This may mean that all the students surveyed are, for their most part, are ready and eager to better express themselves in terms of helping nature, as well as have a very positive attitude to nature. The 3rd and 5th year of the faculty of electrical engineering is recommended to increase their motivation for the conservation of nature and their environmental consciousness by participating in environmental volunteer actions. For students of the 1st and 5th courses of chemical and biological faculty and students of the 3rd and 5th courses of the faculty of law is recommended to pay more attention to ways to overcome obstacles to environmental activities, and not

only to refer to the lack of time or other reasons – competent time planning and prioritization of affairs, will help to find a way out in this situation.

DISCUSSIONS

The level of ecological intention and ecological consciousness of students of chemical and biological faculty is higher than among students of law and electrical engineering faculties. This may be due to the difference in the level of environmental education and its subsequent impact on the Outlook, intention and behavior of students. High rates of ecological consciousness and ecological intention may indicate a holistic positive attitude to nature, as well as a practical readiness to help it.

Students of the faculty of chemistry and biology are the most active in terms of providing environmental assistance to nature, and students of the faculty of electrical engineering are the least active. Students of the faculty of law occupy an intermediate position. This

may mean that the students of chemical-biological and law faculties in the majority are ready to take part in environmental volunteer actions, while the students of the faculty of electrical engineering show in this respect a great passivity. Groups of courses on the development of environmental intention are arranged in the following order: 1st courses, 5th courses and 3rd courses. This may mean that students of all 1st courses are ready, able and willing to better express themselves in environmental volunteer actions than students of the 3rd and 5th courses (excluding the 5th year of the faculty of chemistry and biology).

Students of the faculty of chemistry, biology and electrical engineering can offer better solutions to environmental problems than students of the faculty of law. This may mean that students of the faculty of chemistry, biology and electrical engineering in General are more aware of some aspects of the attitude to nature than students of the faculty of law, but the awareness in itself is not enough to perform useful environmental actions, as confirmed by the above data in paragraph 2. Groups of courses on the level of development of ecological consciousness are arranged in the following order: the 5th courses, the 1st courses and 3rd courses. This may mean that students of all the 5th courses may better offer options for solving environmental problems than students of the 1st and 3rd courses.

Among the 3rd courses, regardless of the faculty, there is a clear tendency to reduce the indicators of eco-consciousness and eco-intention, which may be due to the increasing load in educational activities, or other objective (in addition to personal, subjective) reasons, such as job.

The difference in terms of eco-consciousness and eco-intention between law and electrical engineering faculties is insignificant. However, there are some qualitative differences: law students, although are not fully aware of some aspects of nature, are nevertheless ready to perform environmentally beneficial actions. Students of the faculty of electrical engineering have the opposite situation: despite the better awareness of environmental problems and the ability to offer better solutions in this regard, there is a low level of readiness for environmental action in terms of personal participation.

CONCLUSION

At present, it seems almost self-evident that the use of a systematic approach is the only way in which society can manage such complex entities as human ecosystems

in the most prudent and moral way. Ethics as a science is playing an increasingly integrating role and is believed to include concepts of life support and other vital non-market values. In recent years, in our country and abroad a set of basic environmental regulations and principles began to develop, which, according to their authors, must be respected at all levels of human life — from the individual to the universal. Among them, the main provisions of *bio-sphere ethics*, developed from the standpoint of eco-centrism, which, in a simplified form, can be represented as follows: respect for all living things (and, in particular, to man), respect for nature, i.e. the biosphere and its environment, and respect for space, are of considerable interest. The formation of the noosphere and the new ecological consciousness will be long, contradictory and painful and will require new principles of morality, among which the transition from the principle of quantitative growth, unlimited, primitive accumulation of material wealth due to the destruction of The earth's biosphere to the principle of the elevation of mind and spirit with restrained, only necessary material prosperity will be crucial.

Apparently, only in the synthesis of rationalist (scientific) and ethical and humanistic aspects of the relationship between man and nature in the mass consciousness the broad development of environmental movement is possible.

The interaction of man and nature, society and its habitat in the conditions of rapid growth of industrial production with existing multi-waste technologies has reached today the limit of critical forms and sizes. The emergence of environmental problems is primarily due to socio-economic factors, and these problems must be addressed not only by technical means, but also by reorienting the values, attitudes and behavior of individuals and groups towards the environment. Humanity is aware of the need to create a new mentality associated with views on the environmentally safe and sustainable development of society. Environmental consciousness, as well as its structural elements, as a means of social impact should ensure the normal functioning of all social control mechanisms; the population should consciously give priority to the maintenance of a favorable state of the environment, as well as environmental education and upbringing of the younger generation.

The consequences of destructive human activity have led to the fact that today we are on the verge of environmental disaster. The environmental problem today is not only the preservation of the environment

from the destructive influence of man and his activities, but also the need to transform (transition) from human impact on nature to their interaction. Such interaction is possible if each person has a sufficient level of environmental consciousness and its structural elements, the formation of which should begin with childhood and last a lifetime.

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