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Noospheric ecological imperative in culture of technocratic society

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Abstract. Technogenic, dynamic and mobile civilization has been in a state of systemic ecological and economic crisis for several decades. Numerous studies of its origins and causes show that the culture of a technocratic society associated with a quantitative increase in consumption has exhausted its capabilities and proved incapable of alleviating the sustainable future of humankind. Comprehension of this problem gives grounds to believe that its solvation is largely predetermined by the formation of a new culture, the core of which is the noospheric ecological imperative: only the thing that does not violate the natural balance is allowed. Life in the conditions of imposed restrictions is connected with the change of worldview attitudes of society, understanding the ideas of noospheregenesis and eco-centrism, the need for strict regulation, economy and conscious restriction of consumption.

1. Introduction
The philosophical comprehension of the situation shows that the key to solving the problem is the increase in the society humanistic culture level, the limitation of the desire for material excess, the perfection of human qualities, the development and encouragement of the spiritual, its harmonious combination with the material in each individual person, the logical transition to the ideology of noospherism, the foundations of which were laid by V.I. Vernadsky [5, 6]. This transfers the problem of overcoming the crisis into the sphere of education.

It is education that is called upon to nurture a "noospheric person" who will be able to voluntarily and consciously adopt a way of life within the framework of an ecological imperative, to implement such patterns of activity and behavior that would support the stability of natural biogeochemical cycles and social processes. The increasing contradiction between the interaction of Nature and Reason urgently requires both innovative approaches in the education of the younger generation, whose behavior should be adequate to the socio-natural dynamics, and the preservation and augmentation of the traditions of Russian education. The apparent contradictions of the modern era between the growing needs of society and the inability of nature to meet these needs have matured [7, 8].

2. Materials and methods
The aim of modern higher education is the formation of a professionally competent, socially active, creatively independent personality. The increasing role of education in the current socio-economic situation leads to the fact that along with traditional forms of education, more and more progressive innovative ideas are being increasingly used. The meaning of the word education is "to withdraw, induce, that is, to activate hereditary inclinations and abilities for transferring to a more developed, manifested state." It must be clearly understood: everything that is given to a person ensures one’s
self-preservation in the world. The task of education is to help a person to move on the ladder of self-improvement to the heights of personal development. The Law of the Russian Federation "On Education" says: "Education means a purposeful process of education and training in the interests of man, society, and state, accompanied by a statement of the citizen's achievement of educational levels established by the state." "... The Russian Federation proclaims the field of education a priority. The content of education should ensure: the general and professional culture of society adequate to the world level; formation of an adequate picture of the world in the student; integration of the individual into national and world culture; formation of a person and a citizen integrated into modern society and aimed at improving this society ".

The main objectives of the social and economic policy of the Government of the Russian Federation determine the priority areas for updating the education system in order to achieve a new quality of education of specialists. In the National Project "Education", in "Support and Development of the Best Samples of Domestic Education" direction, the main block of activities is the stimulation of universities that actively implement innovative educational programs. The priorities of state policy, reflected in the National Project, determine the special degree of attention of the scientific and pedagogical community to the innovative processes in Russian education. Education plays a key role in ensuring the dynamic development of society, contributes to changing the system of values, priorities, ideals of each person for the sake of radical transformation of civilization. The idea of the development of the world as a whole, the idea of a man as a part of nature, about one's intellectual and spiritual power at the present time should become, in the authors’ opinion, the world outlook basis of the educational process [9, 10].

The studied and generalized philosophical, scientific, and pedagogical literature shows that the need to create an educational system, focused on sustainable development, survival and development of modern civilization and preservation of the biosphere, makes the problem of noospheric education urgent.

A retrospective analysis of the literature makes it possible to conclude that now the teachers are busy with an intensive search for ways that will ensure a higher quality of education for university graduates. This can be achieved by actively involving students in the learning process.

Meanwhile, the crisis in the education system is determined by many modern thinkers not only as a turning point in the painful, but temporary transition of society from one era to another, but also as a fingerprint of the system itself. Radically changed civilizational realities run counter to the foundations of high school, and a controversial issue, what is better - acquisition and modernization of new or adherence to traditions and stability, remains open.

Today people are participants of a difficult process connected with the modernization of the whole system of Russian education. At the heart of the higher education development, there are still the "Charters" of higher education institutions, which are a reflection of the specific educational environment, prevailing in Russia, but not freed from the burden of problems originally predetermined by the very essence of the higher education system. In this context, the problems of upbringing come first, as the demands of the society for graduates have changed greatly, and not only in the professional sphere, but, first of all, in the social sphere.

Upbringing is a personality-oriented process regulated from within and determined by the inner world of a man. In the center of it, there is a man with his vital existential problems. The goal of education is to introduce a young man into the world of culture of the scientific and technical society. Personality, due to the active efforts of human consciousness, comprehends the values and knowledge offered by culture, develops its own attitude, and acquires independence, uniqueness, subjectness. Upbringing is not so much the appropriation of the meaning of the "I" as the movement of the subject beyond the limits of oneself, into another, more organized sense. Overcoming identification with the other actors in this process is possible through the development of the ability to create individual life mission. In education, the semantic core of upbringing, a constant comprehension (rethinking) of the new is carried out, which transforms the undeveloped into the acquired. Ambiguity of meanings and internal contradictions inherent in cultural reality initiate the process of interpretation. Interpretation is
a creative act of changing accumulated meanings, a point of cultural growth. Modeling of upbringing allows us to look at the organization of upbringing itself in a different way, to bring the management theory of educational systems closer to the generally accepted theories of management without loss of content and uniqueness.

Specificity of upbringing in an engineering university is evident, first of all, because of the high consolidation of the internal educational space, oriented not to the non-science, but to the technical component of culture. Teachers in engineering high school are, as a rule, far from the theory of upbringing and in the upbringing process, they are focused primarily on their own life values and meanings, which, however, are not alien to their pupils. At the same time, the need for acquiring pedagogical knowledge, understanding and appropriating the psychological and pedagogical culture, understanding all aspects of the educational process, reaching an understanding of the essence of upbringing cannot but become a "stumbling block" for engineering teachers.

In such circumstances, the role, on the one hand, of a competent curator and mentor, which is a teacher-psychologist by vocation, on the other hand, of student self- and co-management, contributing to the development of socially significant qualities of personality and social competence, is increasingly growing. In this regard, the problem of humanization and humanitarization of education, which under the new methodology acquires a much deeper meaning than simply familiarizing the individual with a humanitarian culture, is quite clearly recognized [12].

It should be emphasized that almost all developed countries have passed the reform of the education system: the reforms of higher education have acquired the status of state policy; they were and are being invested with huge amounts of money. This is evident in view of the fact that the peoples and governments are aware of the depth of the connection between the level of higher education and progress. At the same time, reforms have never started in a successful system: why is it necessary to reform something that works in a proper way? At the same time, the perfect is always the enemy of the good. In Russia, the educational crisis has a dual nature. On the one hand, this is a clear consequence of the global education crisis; on the other hand, it is a consequence of the environmental and economic crisis taking place in Russia. The notorious conservatism had a significant impact on the development of the crisis: the teacher is more difficult to change than the student, as in the overwhelming majority of cases the higher-education teaching personnel are the established personalities who have chosen higher education as an area for their talent and work [13]. At the same time, adherence to traditions predetermined the positive aspects of the Russian higher school. It is obvious that:

- it traditionally focused on professional activities and has a close relationship with practice, developed system of career guidance, vocational training and retraining, as well as a system of employment;
- it is capable of training personnel in all areas of science, technology and production, popular in the modern world, and, if necessary, responds quickly to changed demands in the context of the "range of specialties" provided;
- in terms of graduate training volume, the quality of vocational training and staffing is one of the leading places in the world;
- it is fundamental, in particular in the natural sciences, and also provides a high level of technological training.

Why reform is an urgent need? Could it be only a tribute to the "pan-European" fashion? Let us recognize that the changes taking place in society are increasingly objectifying the shortcomings of Russian higher education, which were previously considered as indisputable advantages:

- an obvious "bias" towards the professionalization of higher education, to the detriment of the development of social competence;
- the status of a higher education diploma holder due to the system of free preparation does not mean being a part of social elite, it is perceived as a given;
- "dumbing-down" associated with averaging: the individual's desire to express themselves in a narrow industry stumbles upon an insurmountable set of obstacles to self-realization;
excessive attention of higher inspection bodies, leading to averaging of the teaching staff. This and some other factors do show the need for specific reforms.

In the authors’ opinion, the breakdown of technical and humanitarian training, the ever-increasing "technicalization" and dehumanization of training, caused by the extensive nature of mastering knowledge, skills and abilities (and with increasing amounts of information, this is unproductive and disastrous) lead to a depletion of the content of education, a decrease in the creativity of graduates, and result in the reduce of the science and production potential.

The total alienation of man from the natural world should also be regarded as the most important sign of the crisis in the education system: he does not see himself as a part of this world, he opposes nature and culture, he is deprived of a sense of authenticity, meaningfulness, he loses his connection with the world, which strengthens him in his own being. The existing educational system in Russia, still one of the best in the world, still lags far behind the rapidly changing conditions of the existence of a technocratic society of the 21st century [14].

The main reason for this conclusion is that the education system, which has always been an important civilizational factor, should not develop spontaneously today, under the conditions of Russia's ecological and economic slowdown. The correct strategy for the orientation of this system, taking into account the long-term development goals of the country, directed to the NOOSPHERIC ENVIRONMENTAL IMPERATIVE, is extremely relevant right now, since it can become a decisive factor in Russia's transition to a model of sustainable and safe development. After all, the education system largely forms that public consciousness which will determine the future of the civilized development of Russia.

"The National Doctrine of Education in the Russian Federation" sets a number of priorities for creating a basis for sustainable socio-economic and spiritual development of Russia, ensuring a high quality of life for the people and national security. The Doctrine gives an idea of the general outlines, goals and objectives of the development of Russian education in the coming years, being a concept of transition from the Soviet model of education to a market-democratic one. It should provide conditions that ensure the development of a new model of education for the 21st century. The new system of education, in the authors’ deep conviction, should be oriented toward the model of the development of civilization and sustainable development of the world community. The transition to a new civilizational model of education will allow not only to ensure human rights and freedoms, to increase the priorities of the moral and fair mind, spiritual values and ecohumanism, but also to achieve the overall security of development, and the harmony of man, society and nature.

According to A.D. Ursul, sustainable development is understood as development ensuring a balanced solution of demographic problems, socio-economic tasks, questions of maintaining positive environment and natural resource potential in order to meet the needs of present and future generations of people [4].

The transition to a model of sustainable development of education is caused by fundamental contradictions of both the world community and the education itself. As noted by the experts of the International Commission on Education for the 21st Century, headed by J. Delors, education lags behind the demands of the time, contradicting not only the present, but also the future. According to experts, almost all the educational systems do not have a clear focus on the future. The value system that operates in the educational sphere is not adapted to the future, which can satisfy both the humankind and the individual. It is possible to say that the current education system does not suit neither society nor nature; it aggravates the systemic crisis of civilization and contributes to the further degradation of the biosphere.

One predicts that there must be a cardinal turn to the future, determined by the goals of sustainable development in the entire educational system of the world community. As A. Toffler pointed out, the consciousness of people should be focused on the future, a "futurization" of consciousness is necessary. It is necessary to ecologize and futurize the consciousness; moreover - to form the ecological consciousness as the core and the dominant component of the future noospheric thinking. Change in public consciousness is possible only as a result of using the most mass social process,
called education. Education should deal with the same specific task that Russia faces. Precisely, the education system, implementing market-democratic transformations, should now turn to the principles of a sustainable development model functioning. In comparison with other spheres of social activity, education should move faster. According to A.D. Ursul, the share of knowledge about the past is equal to 95% in modern education.

The new component of education will no longer be translational and communicative; it will be generative and superior. In this regard, the need arises for a transition to a whole new round of the educational process - a noospheric education, correlated with the aims of education, coordinated with other structural components of the system of higher education, and most importantly - with the interests, aspirations and opportunities of students and teachers. Noospheric education puts intellectual-spiritual and rational-information factors and resources at the forefront.

Noospheric education, based on the views of outstanding thinkers of the present, such as V.I. Vernadsky (theory of the biosphere and noosphere), K.N. Wentzel (space pedagogics), N.N. Moiseev (ideas of coevolution and ecological imperative), attracts more and more attention of the pedagogical science, which develops pedagogical systems that are adequate to the modern development of civilization. The concept of the noosphere, developed by Vernadsky, has a great methodological and heuristic significance in understanding the interaction of society and nature and plays a big role in the postmodern thematization of sustainable development. In it: 1) society and nature are considered in indissoluble connection, within the framework of an integrated system; 2) alongside with unity, the fundamental qualitative change in society and the rest of nature is fixed, society is considered not as one of the equal elements, but as the higher, organizing element of the system.

Noospheric education is aimed at the formation of the intellectual elite of society, with a developed self-regard, the consciousness of its free, creative essence, the sense of responsibility for the possible choice within the boundaries of this freedom and understanding of the moral duty to oneself, other people, the Motherland, and humankind.

Teaching students new worldview and social attitudes is based on humanistic ideas, universal values and ideals, priority of a healthy way of life, axiological aspect, scientific knowledge, philosophical world view, research skills and abilities, ways of cognizing the surrounding world that meet the requirements of nature-conserving imperatives (the system of norms and rules of interaction “man-society-nature”).

In the authors’ opinion, the required quality of an educational process can be achieved if the process of education, upbringing and development is directed towards the formation of a person who is conscious of one’s responsibility for the active evolution (co-evolution) of the biosphere and society. At the same time, the pedagogical system is built on the basis of creative activity that allows us to master, first of all, the ways of interaction between Nature and Reason which forms the substantive and methodical aspects of noospheric education:

1. **Substantive**: professional, ecological, scientific-research, valeological, social, civil-patriotic, moral-legal, moral-axiological, humanistic, ethical, cultural-aesthetic, cultural-historical, philosophical, information-bibliographic.
2. **Methodical**: developing, integrative, active-play, self-creative, sociometric, self-management.

**3. Conclusion**

The above-mentioned landmarks of noospheric education, means of their implementation can be used in the educational and extra-curricular educational process as an example of the formation of a student of the modern pattern, as the basic paradigm of modernization of education. The socio-ecological, ecohumanistic approaches and the concept of sustainable development of modern society should be
fundamental for it, and the model of noospheric education that realizes the principle “the modern generation is not the last link in human civilization” should become its methodological basis.

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