

Fundamentalization of Transport Bachelors' Education with the Formation of Nature-Centered Consciousness

Ideas, thoughts result in real actions, therefore, they together with words form the future of human being and civilization

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The necessity of transforming the entire system of knowledge about the universe, man, society, and the role of the fundamental base in the formation of an organic unity of its natural-science and humanitarian components is considered. The educational paradigm of forming nature-centered ecological consciousness of transport bachelors developed in LSTU is briefly analyzed, the results of its implementation are presented.

Key words: consciousness, thinking, development of a student, nature-centered approach.



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For economy, where nowadays knowledge and information are dominating, education is a key element in all spheres not only at school and university, but also in professional activity. The idea is clear for everybody, but its application to practice is rather complicated. Our education system and human development potential are to be transformed. It is necessary to train creatively-thinking bachelors and masters capable of providing the required level of development for Russia at the given stage.

Improvement of education quality is one of the key factors to increase economic, social, and environmental safety and, in the long run, social living standards. In our opinion, living standards are to be defined by not only amount of consumed material welfare, but also the level of spiritual and moral wealth development allowing personality formation. The education quality influences significantly the ways and tempos of further scientific-philosophical progress (SPP), i.e. intellectual and moral advance. Under the condition of SPP there will be possibility of more rapid and efficient development of science and technology.

The main human potential is concentrated in the intellect, human consciousness and morality.

Our higher school recognized the fundamentality of education, but it did not pay attention to the fact that it is not information that is an important competitive resource for the society, but a skill of generating new scientific knowledge. Nowadays, it should be accepted that we have neglected the issue of education – coordination with needs and development. Education based on manipulative pedagogical techniques is fraught with the danger of personality's deformation transforming him/her into a blind functionary having skills, but **not thinking**, hence, irrational, dismissive of current demands of the society, economy, and ecology in the planet Earth.

At present, the emphasis is placed on ensuring education being relied on personality, via personality, but a personality may not turn inward. Focus of education should be not only on a personality, but also **social-personal**, i.e. a man in the system of education is a goal, all

the rest being means of its achievements. Hence, there should be the equilibrium between collective and individual issues, humanity and technocratism, creativity and technologies. As the true significance of the acquired knowledge can be understood by only a personality having socially-significant needs and following lofty ideals, it may be concluded that It is necessary to increase the education quality. One should revise radically the whole system of knowledge about the world, society, and man. These factors force to return to the idea of integrated world towards universal knowledge at the higher stage of human development.

There is a demand for increase in significance of education fundamental base as a part of organic integrity of its natural-scientific and humanitarian constituents: a personality has to realize his/her dependence on the environment.

One may distinguish the two groups of causes revealing its importance. One of them is related to the crucial issues of civilization, the current development period of which is defined by different crises: energy, information, economic, ecological ones, as well as sudden escalation of national and social conflicts, terrorism, refugees in many countries of the world.

The second group of causes is connected with the fact that the world community centers the priority of man in the educational system. It is necessary to provide the gnoseological condition to organize harmonic unity of the Man with the natural environment by means of studying fundamental laws of Nature. To make human existence in the society comfortable, one has to penetrate into cultural environment via learning history, philosophy, laws, economics, ecology, and other sciences. A man possessing general and conceptual natural-scientific knowledge will act in such a manner as to combine practical use with respect for nature.

Nowadays, the significance of transition towards rationally managed civil society is conditioned by not only causes of economy, but also ecology [1]. It incorporates the social importance of the theory of nature and society interaction. The principle of social interest priority over personal one may be considered as a basis for methodological principle of the nature and society interaction theory.

Society and governments choose and have to choose an effective model of global moral eco-development, which means environmentally oriented social-economic development based on scientific **knowledge and quality**. Human well-being, its growth, is possible due to qualitative changes of production economy in combination with gradual quantitative demographic and material-consumptive retreat. Only this route will prevent the deterioration of environmental quality and oppression of natural systems of the planet.

The main tasks for human mind still remain: his/her awareness of immediate actions to provide sufficient harmony in joint efforts with ecosystem in exchange processes of the Universe with the priority of natural environment and humanity, movement towards the model of meaningful regulation of eco-development based on quality and innovative approach. Such an approach will produce the most important social-economic effect for the entire humanity, i.e. improvement of environmental condition and increase in living standards of population within the life cycle [2, 3, 4].

Unfortunately, human mind is not fully ready to realize the coming catastrophe due to the absence of sufficient harmony between it and ecosystem. The intelligence developed a human being and will help to survive in future.

The developed in Lipetsk STU educational paradigm includes macroecological paradigm as production economy needs to be developed within the laws of environmental economy. To preserve the integrity over the maximum time period,

humankind is recommended to establish: priority of increasing the entire quality of population living standards; improvement of environmental conditions; preserving the integrity of the Earth biosphere instead of current priority of consumption in terms of the Western pattern of society development.

One of the key requirements for the suggested development civilization paradigm is refusal of: violent human activity against nature; the world community – against economic stereotype which estimate unlimited growth as a progress.

Solution of global problems and satisfaction of human needs necessitates “fundamentalization” of education content. One cannot acquire fundamental knowledge by rote or passively from university teachers. Knowledge is generated by a man himself as a result of internal creative activity, a result of self-management and evolution of thinking process. Teaching activity is a mere activation of students’ intellect allowing them the ability of integral thinking that permits a man to feel like an integral part of the nature responsible for harmonic co-existence of man and nature, and to consider science a tool of achieving this harmony. The new educational paradigm is presented as a logically connected triad: “From integral world picture – towards new progressive knowledge and through it – towards scientific-philosophical and scientific-technical progresses”.

Hence, in accordance with the suggested educational paradigm, it is the formation of integral-thinking person that is to be considered as a priority of contemporary higher education. In this case, the priority should be implemented only through fundamentalization of education in the context of integrated cultural environment based on organic unity of its natural-science and humanitarian constituents.

In one of his latest articles, academician O. Bogomolov paid attention to the fact that “economists and politicians tend to ignore

the research in moral and spiritual aspects of production growth and improvement” whereas economy is only a part of social mechanism, all elements of which interact with each other and are equally significant [5]. The sustainability and stability of a government is defined by the level of human spiritual and moral development.

There is no other alternative for a man as to support his life in social harmony with himself and society, in co-existence with the environment. To preserve its integrity for a maximally long period, humankind has to rely on scientific bases of eco-harmonism.

In Nature the development of non-living matter, living world, and Society follow some common logic, which is called by academician N.N. Moiseev a universal evolutionism [6], since all of them – Man, Nature, and Society are the elements of one single system.

In our opinion, contemporary state of economy and environment requires ecologic-economic analysis of interaction of human activity and the environment, introduction of concepts and generalizations into practice and economic theory as they express cause-and-effect relationships between social-economic and ecological systems. To accelerate the solution of the mentioned problems it is appropriate to form “ecological-economic nature-oriented consciousness” simultaneously [2, 3, 4].

Ecological-economic consciousness is a complex of ecological and social-economic knowledge, ideas, and views of communities directly reflecting the reality and expressing the attitude towards different events in human life and so-ciety, in particular, at the given historical period. The main criterion of knowledge transition into consciousness is public interests of strata and groups presented in views, ideas, theories focused on managing ecological-economic relationships in human activity and expressing the needs of social communities. The essence of ecological-economic consciousness is connected

with systematized knowledge based on scientific cognition and voluntary application of ecological and social-economic laws.

From the standpoint of development eco-psychology, for a man to survive in the anthropogenic environment created by him, he has not only to change nature anthropocentrically, but also change, develop himself psychologically in accordance with the universal principles and laws of nature including his own human nature. Hence, as an alternative to anthropocentric consciousness focused on consumer attitude to nature, the idea of eco-centric type of ecological consciousness and thinking is put forward according to which a personality acts and is aware of oneself as “a procedural unit” of self-performance of nature in the form of human consciousness. But in this case, a personality will act and feel like an ecological subject of nature development including his abilities and environment.

The department has organized a perspective in Russia (in the view of leading scientists of Russia and Europe) research-production school “Theoretical and practical application of bio-compatible technologies in transport”.

One of the important fundamental scientific trends of the school deals with development of theory, methods, and pathfinding in coordination of social eco-logical and economic interests. The research results have allowed suggesting new ideas, ecosystem approach, and theory to solve the major problems: remediation of destroyed environmental systems; maintenance of ecological-economic balance in development; creation of the conditions for vital functions of biosphere and technosphere. The scientific school has gained its recognition for developing the theory of harmonic interaction of road transport with the environment and solution of fundamental problems, production problems on ecology, economics, and research bases of functioning open transport systems.

Within the framework of scientific school the teaching staff of the department works at development and implementation into practice the academic-pedagogical concept of continuous ecological-economic education for bachelors in transport. The goal of this profile is to develop students’ ecological-economic worldview with the nature-centered consciousness and thinking based on fundamental continuous ecologic-economical training of the youth. The concept of economic training consists in focus on knowledge of economic laws of nature and society, their legal framework, formation of a personality with market social-psychological intentions capable of fair enterprise, business activity, taking ecologically-balanced effective managerial decisions.

Let us present the report of independent expert from the conclusion of accreditation examination carried out in LSTU in 2015, prepared by Volkov V.S., Doctor of Technical Sciences, Professor, head of automobile and service department, Voronezh State University of Forestry: “The share of teaching staff involved in major professional programme and having both basic higher education and Candidate (Doctoral) Degrees, meeting the requirements of the profile taught by them, is 100%. To build the basis for training of an engineer capable of managing effective and biocompatible transport production, the staff of the department solved the high-priority problems:

- the research-production school of teachers, doctoral students, post-graduates, and students with nature-centered ecological consciousness and thinking was organized. The LSTU research school was recognized by the leading scientists and universities, which was supported by their reviews, reports at the international conferences, in 6 articles published in the journals from the RF State Commission for Academic Degrees and Titles list and abroad;

■ within 20 years of working in LSTU the founder of the scientific school V.A. Korchgin has supervised 10 Doctors and 22 Candidates of Sciences, 4 of which are Candidates of Economic Sciences with the solution of ecological problems. He was awarded with the European order LABORE ET SCIENTIA "Labour and Science" for the contribution to the development of science and education acknowledged by the international community.

To achieve the primary goal – development of LSTU graduates' creative and scientific eco-humanitarian worldview-effective and up-to-date educational technologies have been developed and widely applied in teaching disciplines, the number of diploma projects of scientific-research profile that are awarded and placed high in the All-Russian Olympiads and competitions is growing.

Recognition of LATU achievements in training research staff, development and implementation of State Educational Standards in Higher Professional Education (SES in HPE) in transport profile has been confirmed by Professor Korchagin V.A. He was awarded with the honorary title of Professor by 10 leading universities of Russia and foreign countries; Victor Alexeevich gave workshops on creative approaches to academic process in the perspective majors in the universities of Russia and abroad (Austria, Italy, Tadzhikistan, Finland, Ukraine).

Over the past five years the staff of

Transport Management Department has published 69 research articles in the journals of the RF State Commission for Academic Degrees and Titles list, three articles in the journals indexed in the international citation databases and in 20 international editions, 12 monographs, and 9 manuals with TMA stamp".

The majority of the department graduates will be successful and recognized in their career and life, as they are able to implement an important business principle: "to perform actions without deterioration of environment today, about which all other will only think of tomorrow". Today, one cannot do only that one wants or is ordered to do. Our graduates are able to raise and answer the question: "What do I have to do to improve the quality of my job and enhance the environment". This is a new issue in the history of humanity. This is a direction of sustainable development.

The significance of learning fundamental disciplines in development of ecological-economic consciousness and thinking is demonstrated by the words of Nobel-Prize winner, economist Paul Heyne: "That who argues about economy without theory gains, as a rule, only speculating about it using bad theory" [7]. Therefore, it should be concluded that the processes of progressive inclusion of the Russian education into international educational space are to be on the way of searching for such a model that comprises the best things from the previous one, would contain the tools for prompt respond to the market demands.

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