

G.K.Dlimbetova<sup>1</sup>, A.Aliyeva<sup>1</sup>, J.Kultan<sup>2</sup>, M.M.Akeshova<sup>3</sup>

<sup>1</sup>*L.N.Gumilyov Eurasian National University, Astana;*

<sup>2</sup>*University of Economics, Bratislava, Slovakia;*

<sup>3</sup>*Kh.A.Yassawi International kazakh-turkish University, Turkestan  
(E-mail: gainid@mail.ru)*

## **The analysis of a condition of professional training of future ecologists in the system of higher education**

Ecological education becomes a subject of interest and action of the international organizations at the highest level. The search of harmonious interaction of society and nature leads to an intensive process of ecologization of general culture of mankind. It is caused by the need for increase of people's susceptibility and their involvement degree in the solution search of development problems and preservation of the surrounding environment. On the global and universal value, ecological education is specified as the main means of constructive transformation of social and individual ecological consciousness almost at all international forums about the environment problems. Many of them are actually devoted to ecological education since the condition of the surrounding environment, the general ecological education of all population depends on the level of professional competency of future ecologist.

*Key words:* professional training, the system of higher education, future ecologists.

Changes occurring in the system of social relations require from the education mobility system an adequate answer to realities of new historical experience and compliance to the requirements of the development of economy. At the present time, higher education is considered as the main factor of political, social and economic progress. Higher ecological education gives a representation and knowledge of laws about biosocial system «person-society-nature».

At the modern stage, big experience has already been accumulated in the area of ecological education in the world, domestic and foreign researchers show interest in the problem of organization of ecological education. The ideas of V.I.Vernadskiy about the Biosphere and Noosphere and the works of N.N.Moiseev, A.D.Ursul, B. Kommoner and D.Medouza played a key role in the formation of scientific outlook in the organization process of ecological education.

In a modern foreshortening, the viewpoint of S.V.Alekseyev represents an interest, who claims that ecological education for the sustainable development is a new complex direction in the frameworks of higher ecological education system, formed in many countries of the world with a view to ensuring movement of society to the balanced development [1].

In the UK parliamentary report it was stated that «the transition to a green economy requires a 'greening' of the whole economy. Also, all jobs have to be «green».

What are the challenges that Kazakhstan is facing in the transition to a green economy? How can we solve them and what is the role of higher education in this transition?

We consider that the interest to the issue of ecological education attracts both domestic and foreign researchers. At the present stage, extensive experience in the field of ecological education has been gained, however, global progress in this area is not enough available for the teaching community, as there is a lack of works on the ecological skills in ecological education [2].

The State policy in the field of education of the Republic of Kazakhstan in compliance with the Constitution of the country is based on the following principles: equality of the rights of all citizens of the Republic of Kazakhstan for education; availability of education at all levels to the population with the account of intellectual development, psycho-physiological and individual characteristics of each person; secular nature of education; stimulation of a personality to the education system and endowment development; continuity of education process ensuring succession of its steps; unity of training and upbringing; variety of education organizations in forms of property, training and upbringing and directions of education; democratic nature of education management, expansion of the academic freedom and power of education organizations; humanistic and developing nature of education; integration of education, science and production; professional orientation of learners; informatization of education systems [3].

In the legislation of the Republic of Kazakhstan, the concept of «education system» is defined as «a set of interacting beings»:

- 1) the education organizations, regardless of their ownership, types and kinds;
- 2) successive educational programs and the state obligatory standards of education for various levels of education;
- 3) bodies of education management and the subordinated organizations, ensuring the implementation of educational programs and development of education system.

Nowadays, in the condition of informatization, the purpose of higher education of the Republic of Kazakhstan is training of professional specialists possessing communicative and foreign-language competences, creative potential and critical thinking style. The modern higher education should be continuous, qualitative, versatile, based on the information and telecommunication technologies and an emphasis should be made on learners' activity, independence and ability to adapt to changing conditions of modern society. A search for the reserves of professional training improvement of future specialists is displaced in the plane of formation and development of their information, professional and communicative competence.

The entry of Kazakhstan in the Bologna process opens great opportunities for the Kazakhstan universities in the implementation of joint educational projects, such as double diploma education, mutual recognition of academic courses, international accreditations, etc.

The participation in the Bologna process allows the higher education in our country to pass into united creatively developing educational space which provides acknowledgement of the Kazakhstan educational programs, educational plans, expands access to the European education and also increases the quality of mobility process of students and teaching staff by means of acceptance of comparable system of higher education steps, use of credit systems and gives opportunity not only for receiving the all-European appendix to the diploma of graduates of the Kazakhstan higher education institutions, providing convertibility of domestic diplomas in the European countries, but also the opportunity of employment in any country of the world.

«The academic mobility» differs from traditional foreign training, primarily in that, firstly, students go abroad albeit on limited but for long terms — from a semester up to an academic year, and, secondly, during such trainings they study fully, they study not only a language, but also separate disciplines and undergo a semestrial or one-year course which is counted by their return to the basic higher education institution. We propose to name the higher education institution, where the student was enrolled and from where he initially wanted to get a diploma as «a basic higher education institution».

Comparability in education allows achieving the following objectives: formation of educational programs in which all main elements of the educational process (the educational plan, methods of training and an assessment, the requirement to the maintenance of courses and teachers) are coordinated; automatic recognition of training results at university — the partner with all participants of partnership, that is a guarantee of embedding a mobility element in educational process; creation of a general body of program management; delivery of joint (on behalf of program participants) diploma or diplomas of universities-participants after completion of training. Similar programs pursue, as the rule, long-term interest for all its participants. They can provide students with the possibility to acquire additional academic and cultural experience abroad and higher education institutions with new possibility of cooperation and expansion of its potential jointly.

Owing to the implementation of the program «double diploma education» together with foreign universities in perspective, the problem of convertibility of the Kazakhstan higher education diplomas, their recognition at the international level, involvement of domestic universities in the international ratings and other educational projects will be solved.

Nowadays, one of the priority directions in terms of development of ecological preparation in the Republic is introduction and development of continuous ecological education system directed on the formation of scientific and practical knowledge and abilities as well as valuable orientations, behavior and activity in the sphere of environment protection, steady environmental management and consumption, formation of ecological lifestyle [4].

Ecological preparation in the higher school system of Kazakhstan is carried out in two directions:

- the general is for students of all specialties: general education disciplines, for example, «Bases of ecological knowledge», «Environment Protection», «Environmental management economy», et al.;
- profile is (deepened) for ecological, naturally-geographical, chemical and biological faculties where specialist-ecologists are trained for the nature protection sphere («Ecology», «Ecology and environmental management»). In some higher education institutions at the faculties of «Biology», «Chemistry», «Geography», preparation of specialists for engineering and agronomical profile is conducted («Agroecology», «Engineering Protection of Environment», «Applied Ecology»).

According to the results of scientific-practical research conducted in K.A. Yassawi International Kazakh-Turkish University and Korkyt Ata Kizilorda State University, an indicator of professional training of future ecologists is readiness for changes which includes a situation awareness of demand for the new, development of the strategic bases alleged for the consistency of this new, including the development of advancing models of changed professional activity and reconsideration of educational process maintenance. In the aggregate, the above listed provides a transfer of consciousness and activity from a spontaneous choice to an image projection of desirable change or the future. For last years of independence, the development of ecological education in Kazakhstan passed basically in separate educational structures by the number of research groups in an initiative order.

Generalizing the things told about the modern condition of training of future specialists with ecological education in Kazakhstan, it should be noted that the problem of training of highly qualified ecologists with the knowledge of a foreign language, capable to compete in the international market of work has not been fully decided yet, but the first steps were taken in this direction.

We suppose that though Kazakhstan is also seeking to be a competitive country not only in Asia, but also in all over the world, nevertheless, the state policy is not exposed to copy blindly and follow the western sample, as we have deep Turkic roots, historically interconnected with the Turkic people. In conditions of modernization and informatization of education, the Republic of Kazakhstan builds a national model of higher education where the high training quality of young generation is carried out on the basis of synthesis of science, culture and educational process in contexts of world history, history of the Turkic people, nomadic civilizations and the countries of the Central Asia. Therefore, it is possible to give thorough arguments of a choice of the Turkish Republic for studying, comparison and analysis of higher ecological education system in this country.

From our point of view firstly, it is connected with linguistic, cultural and ethnic proximity of the Turkic people.

Secondly, Turkey also is a secular state aimed at comprehensive modernization of society and informatization of education. The Euroasian mentality, aspiration to adapt the best lines of the European culture, keeping the national identity and originality is inherent for both countries.

Thirdly, we are imposed by the developed lines of the Turkish ethno pedagogical and creative reconsideration of advanced achievements of the world pedagogical thought and practice. Strong traditions of ecological training and upbringing in Turkey deserve to be noted.

Fourthly, in the domestic education system, there is a certain Turkish segment; it is K.A. Yassawi International Kazakh-Turkish University, which first received the status of an international university (Turkestan city), Suleiman Demirel Non-State University (Almaty), Zhambyl Accounting-Credit-Economic College, the Educational Center «Dostyk», primary school «Shachlan» (where children of Turkey citizens living and working in Kazakhstan are trained), a set of Kazakh-Turkish lyceums. In addition, it should be noted that Turkey is the first country which established close friendly contacts at once with Kazakhstan's independence.

We have researched some works of Turkish scholars concerning the problem of ecology, training of future ecologist and we can point out the actual statements and facts from their works.

For example Nazlyogly considers that, «... from the beginning of the XYII century, mankind conducted searches for gaining domination over the nature and accepted the nature only as a car making only demanded products» [5].

In the Constitution and in other legislative acts of the Turkish Republic there are many provisions where the theme about prevention of forest massifs reduction, protection of cultivated territories, water sources and natural reserves is raised. The new laws adopted in Turkey show an increased attention to the question of ecological education.

At the present time, education in Turkey is under supervision and control of the State. According to Article 42 of the Constitution of the Turkish Republic, each person has the right to get education. According to the Main Contract No. 1739 about the national education, the main purpose of education system is a training of individuals recognizing values of the Turkish people (nation), realizing their duties and responsibility before the country, respecting democracy and the rights of a person. Governmental programs pay a great attention to education as it is an important component of an economic, technological and social development of Turkey.

The main purpose pursued by the Turkish higher education institutions in the process of training future ecologists is creation of conditions for systematic and consecutive work on studying ecological knowledge by students as well as upbringing of specialists in the sphere of nature protection activity.

An undoubted interest is represented in the work of Senemogly, in which an interpretation of the term «relation to the environment» is given as «an internal condition of a person influencing on the perception of various circumstances, cases of certain people and groups» [6].

In compliance with these deeply philosophical definitions, for creation of the society consisting of professionally literate people, realizing the importance of the environment, there is a need to solve the following tasks in the education system in forming a set of key and professional competences of future specialists — ecologists:

- training of personalities who make thrifty use of the environment and the natural phenomena;
- training of individuals, able to find the general points of contact with the artificial and natural environment;
- training of specialists, mastering a set of methods and applying them for environment researches;
- training of researchers. understanding and realizing a connection between sciences about the environment with other disciplines;
- training of scientific workers, capable to solve environment problems;
- training of individuals realizing harmony and unity of a person with the environment;
- training of researchers, propagandizing a philosophy of environmental protection of the surrounding environment;
- training of personalities, capable to transform the environment by participating in various kinds of social activity, without destroying internal unity of the natural environment and preserving it.

At the present time, such subjects as «Ecology», «Environment Problems in Turkey», «Environmental Law», «Philosophy of Environment», «Ecosystems», «The environment and man», «Biology of Environment» are taught for students of the universities, the number of whose promptly grows in Turkey. At these classes, questions of the environment, varieties of ecosystems, problems arising as a result of functioning of human activity, proposals on their solution are considered. At the profile faculties, such subjects as Rural Economy, the Wood, Biology, Architecture, Environmental Engineering, Biological Pedagogics are taught to students on a mandatory basis.

It is necessary to point out that the features of teaching the above mentioned subjects are not only an acquaintance with ecological problems, but also the development of students' ability to see, to recognize these problems and solve them with the help of available knowledge as well as the formation of information, communicative and professional competences.

It should be noted that within the framework of International Cooperation, beginning from the year 2001, students of higher education institutions of the Mediterranean countries take classes in school «Young ecologist» at will, that allows to expand students' ecological outlook, to create ecological culture, information, communicative and professional competences, to develop creative potential and critical thinking style. Likewise, an emphasis is placed on activity, learners' independence, ability to be mobilized and adapt to the changing conditions of the modern society.

Summing up, it should be noted that characteristic line of the Turkish system of training of specialists in the area of nature protection activity and formation of ecological education is purposeful and systematic work on formation of responsible relation to the environment at all levels of professional education which finds reflection both in important standard documents of the country and in scientific researches.

Having studied and analyzed the condition of training of future ecologists in Kazakhstan and Turkish higher education systems, we can note some similarities:

- education modernization in both countries requires creation of new legal, scientifically — methodical, financially — material conditions;
- equality of the rights of all citizens of the Republic of Kazakhstan for education, and in Turkey according to Article 42 of the Constitution of the Turkish Republic, each person has the right to receive education;
- there are privileges for separate categories of citizens for ensuring availability of higher education, the state support of talented youth and improvement of social position of the population;
- continuity of education process ensuring succession of its steps;
- unity of training and upbringing;
- expanding the boundaries of international cooperation: training abroad, institutional mobility (opening of branches of foreign higher education institutions in RK), receiving foreign degree without leaving native country, invitation of leading foreign teachers, academic exchange of teachers;

- governmental programs of both states pay great attention to education since it is acknowledged as an important component of economic, technological and social development both in Kazakhstan and in Turkey;
- the centralized system of education management;
- remote education: each citizen can receive remote education, realizing the equality of opportunities of receiving education.

We should not forget that, while transferring a number of provisions regulating educational process in the Turkish higher education system, it is necessary to take into consideration that this system functions in other conditions, than the domestic system, therefore we should speak only about the use of separate elements if those lead to improvement of the Kazakhstan education. It is possible to refer a wide use of modern information technologies in a training process to such elements; we would like to pay especial attention to accurately put work of the autonomous testing center, creation of conditions for independent works of students and active work in the areas of international cooperation.

Thus, the carried-out analysis about the initial condition of the Turkish higher education system will be useful in the modernization process of the Kazakhstan higher education on the basis of the positive aspects of constructing an educational policy of Turkey and development features of domestic education model.

If to pass to the analysis of the educational process in Kazakhstan and Russia, it is necessary to pay attention to the fact that the countries succeeded to keep the general cultural, language and educational space. In this sense, the unified educational space is kept due to the traditions of the old Soviet educational system and on account of that the vector "reformatting" of former education model was set by the international standards.

The considerable contribution to the development of ecological education was made by many scientists: A.D. Ursule, V.S. Kuchmenko, E.A. Kogay, K. Efremov, M.V. Rybakova, A.A. Verbitsky, N.F. Tsertsek, A.N. Zakhlebny, N. N. Moiseyev, S.N. Glazachev, B. Vuytovich, V.D. Sukhorukoye, I.T. Suravegina, I.D. Zverev, A.P. Sidelkovsky, et al.

A number of researches concerning ecological competence which is considered as a subsystem of professional competence were performed by such scientists as V.V. Serikov, P.V. Simonov, C. Scala, N.C. Shablygina, A.V. Hutorsky, O.N. Shakhmatova, M. A. Choshanov, et al.

During the period of market transformations taking place in Russia, problems of sustainable ecological-economic developments of the country are particularly relevant. Meanwhile, the increase of emergency situations, accompanied by considerable negative consequences for society and the nature is observed. Perpetrators of emerging environmental disasters are not only unpredictable actions of complex technical means or natural disasters, but also unreasoned human activities. Prevention of ecological accidents and minimization of their consequences require skillful management which is impossible to provide at absence of ecologically competent members of society.

«For the purposes of increasing ecological culture of society and professional training of specialists in the country, the system of general, complex and continuous ecological education and upbringing, professional training of specialists in secondary and higher educational institutions, increase of their qualification as well as distribution of ecological knowledge through the means of mass information is established» — written down in the Federal law «About Protection of the Environment».

However, the situation has developed in such a way that a long time at sufficient approbation and adjustments, teaching about the laws of nature and the laws of society, about the laws of compatibility, interaction of society and the nature as complete coevolving systems were virtually absent. As a result, the ecological education based on the analytical knowledge about the Nature, tightly pragmatic and consumer-oriented, could not break nature — devastative motives in the outlook of considerable part of the population.

In our opinion the system of training specialists of an ecological profile is constructed in such a way that future specialist mastered necessary knowledge, abilities and skills in the area of environmental management and protection of the nature as well as an capacity to joint activity with specialists of adjacent branches of science and practice for the solution of urgent ecological problems. Information about changes in the natural environment and in the world community at global level, regional and local levels is entered in the content of fundamental and obligatory disciplines of educational plans and programs of training ecologists. New data about natural or anthropogenically stimulated dynamics and evolution of the nature, its reaction to rendered technogenic influences, changes in population number, and the main social and economic problems of the world community and Russia was reflected in them. Much attention was paid to computing, analytical laboratory, natural and other methods of research. In training ecologists, two forms of activity of

future ecologists — scientific and production, requiring development and introductions of various disciplines in educational plans are considered. In the former case, a considerable amount of educational time is devoted to fundamental and theoretical disciplines not only in the area of Ecology, but also in the whole natural and social sciences. In the latter case, the role of technical, methodical and analytical courses is strengthened in training engineers-ecologists; much attention is paid to students' acquisition of skills to work with measuring equipment, conducting natural researches, the solution of systemic problems of the nature protection and environmental management.

At the present time, the higher ecological education in Russia is divided into: the fundamental ecological education which is carried out at the geographical, biological, economics, ecological and other departments of the state and private universities; applied engineering ecological education for training of specialists required in different branches of economy; it is implemented in technical universities and institutes. In compliance with it, there are two groups of ecological specialties in the universities of Russia: ecological specialties in classical universities (Ecology, Environmental Management, Bioecology, Geocology, Agroecology, etc.); safety of vital activity in technical higher education institutions (Engineering Protection of Environment on branches, Radiation safety of man and the environment, Fire safety, Safety of technological processes and productions – on branches, etc.). In the Russian higher education, the following concepts are accepted: the direction – the main educational program for training of bachelors and masters (it is realized respectively for in 4 and 6 years); specialty — educational 5-year- program of training of specialists for a certain concrete area of activity.

The necessity of developing ecological education was noted in the Decree of the President of the Russian Federation from June 4, 2008 «About some measures on increase of Energy and Ecological Efficiency of the Russian Economy», where Government was entrusted to consider a question about inclusion of the main general education of the basic ecological knowledge into the federal state educational standards. This question was also raised at the meeting of the State Council Presidium of Russia on May 27, 2010.

In conclusion it is necessary to point out that the analysis of the condition of training ecologists in Kazakhstan, Russian and Turkish higher education systems and studying of problems of organization of ecological education allowed to reveal existing tendencies in consideration of these problems in the pedagogical theory and practice. Specifics of training ecologists in the Kazakhstan, Russian and Turkish higher education systems is conditioned by an achievement of the purpose of forming professional ecological outlook and communicative competence of future specialists which is a binding link between a scientific picture of the world and ecological education. The modern scientific picture of the world acts as theoretical-pedagogical basis of ecological education.

On the other hand, we have dealt with the experience of training ecologists in the Kazakhstan, Russian and Turkish higher education system and the priority of opinions was revealed.

Theoretical and practical research continues and in the process of this study we made a conclusion that the significance and relevance of the problem of professional training of ecologists with formed information, communicative and professional competences by the organization of ecological education did not get a full theoretical and practical decision, but the first steps were taken in this direction. A characteristic feature of the Turkish education system is a purposeful and systematic work on the formation of information, communicative and professional competences and responsible relation to the surrounding environment at all levels of education. Therefore, in Kazakhstan it is necessary to form information, communicative and professional competences of future ecologists at all levels of education, namely, at higher school, which is limited in comparison with the education system in Turkey.

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## Жоғарғы білім беру жүйесінде болашақ экологтарды кәсіптік дайындаудың талдау шарттары

Мақалада экологиялық білім халықаралық ұйымдардың жоғары деңгейдегі талқыланатын тақырыбына айналғандығы айтылған. Қоғамның және табиғаттың жарасымды қарым-қатынас ізденістері экологиялық мәдениетті қалыптастыру үрдісінде жүретін қоғамның экологияландырылуына алып келеді. Бұл қоршаған ортаны қорғаудың мәселелеріне шешім іздеу барысында адамның жоғары дәрежеде қызығушылық танытуына қажеттілік тудырды. Қоршаған орта мәселелеріне арналған көптеген конференцияларда экологиялық білім адамның әлеуметтік және жеке экологиялық санасын қалыптастырудағы құрылымды трансформациялық негізгі құрал ретінде анықталды. Экологиялық мәселелердің шешілу барысы келешек эколог-мамандардың экологиялық білім деңгейіне және кәсіби құзыреттілігіне тікелей байланысты.

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## Анализ условия профессиональной подготовки будущих экологов в системе высшего образования

Экологическое образование становится предметом обсуждения международных организаций на самом высоком уровне. Поиск гармоничного взаимодействия общества и природы, подчеркнуто авторами, приводит к экологизации общества в процессе формирования экологической культуры человека, что вызвало повышенный интерес людей к необходимости их участия в поиске решений проблем сохранения окружающей среды. На многих международных конференциях, посвященных проблемам окружающей среды, выделено в статье, экологическое образование определяется в качестве главного средства конструктивной трансформации социального и индивидуального экологического сознания людей. Определено, что экологические проблемы решаются в зависимости от уровня экологического образования и профессиональной компетентности будущих экологов.

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