INNOVATION ASPECTS OF TRAINING PERSONNEL IN CONTEXT OF GLOBALIZATION AND INTEGRATION PROCESSES

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There are considered the innovative aspects of training specialists with higher education in the conditions of globalization and integration processes in Kazakhstan. There are revealed the major factors constraining the higher school innovative development: insufficient budget financing, backwardness of social partnership of the higher school and the labor market, weak scientific and methodological ensuring of the undertaken educational reforms. There are noted the features of higher geological education and problematic issues of innovative development of geological industry in the context of forming the effective system of the geological studying of the subsoil and completion of mineral resources of the country. There is staticized the need of developing the National system of qualifications and forming the competence-based educational programs taking into account the requirements of professional standards and real production sector. In the conditions of flared globalization the Bologna Process is considered as an effective factor of the national education system rapprochement permitting to build the common space of higher education as the space of understanding and as the capability to speak one "educational" language.

Keywords: Bologna Process, higher geological education, innovation economy, education globalization, social partnership, accreditation and quality

A strategic objective of upgrading Kazakhstan education, as the Republic of Kazakhstan President N. Nazarbayev emphasized, is training competitive specialists. It means that modernization of education in the Republic of Kazakhstan shall go on the way of developing innovative education. The task is paramount, comparable to the transition from the raw economy to the innovative one. The essence of innovative education can be expressed by the phrase: "Not to catch up with the past but to create the future". The main mission of innovative education is training a competent, aware and moral person. It can be reached under the condition when the society estimates the education system as the sphere of employment, as the sphere of profitable investments where there is reproduced the major capital, the intellectual resources.

Within the last two decades the upgrading of higher education was performed in the complicated conditions of the post-Soviet transformations, accruing globalization, inconsistent educational policy: from unification, standardization and regulation to the present excessive academic autonomy of higher education institutions. The Kazakhstan higher school managed to keep in general the scientific-and-educational potential and the common educational space.

Within the last 10 years the amount of education financing increased by 8 times. In the Global index of competitiveness of 2015–2016 of the World Economic Forum Kazakhstan takes the 42nd position among 140 countries of the world [1]. Kazakhstan enters the ten countries that are leaders in the index of education development. In 2013 the Republic took the 27th position among 170 countries of the world in the Global index of the youth development. There was formed the first in the country research university: Kazakh National Research Technical University n.a. K. Satpayev designed to become a center of science and development of competences. There is being developed Nazarbaev University designed to become an engine of the higher school innovative development. There is working the network of the National higher education institutions consisting of 9 universities. There are being successfully developed 10 universities of innovative orientation. Kazakhstan became a Governmental member of the European Register of Quality Assurance.

At the same time the higher school innovative development is restrained by a number of circumstances. Despite the positive dynamics of higher education budget financing, its share makes 0,4 % of the GDP. For comparison in the EU countries it makes 2 %. The public expenditures for scientific research in the RK make about 0,2 % of the GDP while in the OECD countries they make 2.4 %. Now about 30 % of the economically active population have higher education. For comparison in Germany the number is 84 %, in Great Britain 65 %, in Spain 45 %. With increasing the costs for scientific research there is not practically observed the growth of innovative products. Within the last 5 years there is growing the number of scientific publications with a high impact-factor. At this the share of scientific publications of Kazakhstan scientists in the world makes only 0.04 % whereas the share of Russia is about

2%, China 10%, the USA 22% [2]. There still remains rather a low social status of the high school teacher, scientist and low patent activity of the personnel. For 1 million of population the number of patent applications in the RK is less than 100. For comparison in Russia it is more than 200, in Germany 600, in the USA 750, South Korea 2 500. The number of research associates, despite its growth in recent years, remains even lower than the real need of the country. For 1 million of population in Kazakhstan there are about 1.4 thousand research associates that is much less than in the developed countries: in Finland 7,8 thousand, in Sweden 5.4 thousand, in Japan 5,3 thousand, in the USA 4,6 thousand.

The educational potential of Kazakhstan economy does not conform to the requirements of innovative economy yet. The specific weight of doctors and candidates of science in the total number of the personnel making about 50% cannot be considered as effective for reproducing the intellectual potential and providing competitiveness of the country. The absence of a competitive strategy of economy, its raw orientation poorly stimulate the need for creative specialists. There is no due demand for intelligence and creative approach. Products are not quite competitive, they do not contain science intensity. The system of the higher school financing does not provide the required quality of education for developing competitive economy [3].

According to experts, for harmonious development of economy the mineral resources shall be 1,25 times larger than the amounts of production. Within nearly a quarter of the century mining companies benefited without putting investments into geological exploration.

The RK President N. Nazarbayev at the meeting following the results of 2012 and the tasks of implementing Kazakhstan-2050 strategy expressed concern in the cost level for geological exploration. In Kazakhstan there are spent 20 dollars, in China 45, in Australia 167, in Canada 203 for one square kilometer. Such scanty costs are caused by the backwardness of the complex infrastructure in the sphere of developing innovative technologies in geological industry and deficit of staffing. Owing to the inefficient mineral and raw policy there are aggravated the issues of raw safety of the country.

Nowadays in Kazakhstan there are operated prospective mineral deposits found in the Soviet period. They are mainly the readily available and near-surface fields. In the subsoil of Kazakhstan, in the deep part, there is a huge potential of mineral raw material resources (oil, gas, ferrous and non-ferrous metals, uranium, rare-earth elements, etc.). It is necessary to develop complex technologies of geological investigation based on up-to-date methods of geophysics, remote sensing of the Earth, multi-element geophysical and geochemical surveys capable to discover successfully the fields at large depths.

The key problem of the Kazakhstan raw complex is depletion of the ore base in a number of minerals. According to the RK Ministry for Investments and Development, since 2000 resources of copper decreased by 2,4 million tons, zinc and lead by 7 million tons, bauxites by 54 million tons. These indicators are given taking into account a surplus due to exploration works. The level of scientific and technological support of geological exploration both in the studies quality and in their amount decreased to a critical level. There is no development and output of hardware and technological complexes and equipment. There is no reliable scientifically based information of the mineral and raw potential of the subsoil. In geological industry the deficit of qualified specialists is sharply felt. The carriers of geologic-geophysical knowledge are generally people of the retirement or pre-retirement age.

Despite the haste of reforms in the context of the Bologna Process and pessimistic statements, higher education kept the demand for it and remains the most important institution of socialization and personnel reproduction. Nowadays in the Kazakhstan society there is a gradual transition from the idea of education as of a benefit at the expense of the state to the idea as a service and a subject of economic relations. The mass character and availability of higher education promote the emergence of the institutional conflict between the requirement of education quality assurance and safety of the student's contingent as a source of financial wellbeing of a higher education institution. In the conditions of insufficient budget financing the most important managerial decision there becomes minimization of the students expelling from higher education institutions. In this aspect there are needed effective methods and technologies of increasing the students' motivation to active study and effectiveness of training. It is impossible to reduce the level of the requirements below the admissible level. Otherwise a higher education institution will turn into a factory of issuing diplomas. Paraphrasing V. Sukhomlinsky: "it is impossible to turn a higher education institution into an enterprise where students study to pass examinations and the teachers work to get a salary".

Developing an effective education system that is adequate to the requirements of present day economy is the task of paramount importance. The World Bank studies show that 64% of the economic growth of any country are determined by the human capital, 20% by natural resources and only 16% by the physical capital in the form of the main assets and gold and foreign currency reserves.

In Japan, Germany, Sweden the share of the human capital in economic development makes about 80%, in Kazakhstan about 15%. Increasing the duration of training in senior classes by 1 year raises the GDP by 0,44%. So the planned transition of the Kazakhstan comprehensive school to the 12-year cycle has also an economic character. Not accidentally in the West the duration of pre-university (school) education makes 12–13 years.

The transition of Kazakhstan to innovative economy provides changing the demand pattern for university graduates. This challenge orients to the development of social partnership of the higher school and business production in the context of improving quality and competitiveness of higher education.

A high potential of the Republic in strategic raw material resources, in particular oil, gas and metals, as well as in uranium fuel is the basis for implementing the innovative-industrial strategy and Kazakhstan entering the number of the 30 most developed countries of the world.

In the RK Law "Of the Subsoil and Subsurface Use" there is provided the obligatory payment of the subsoil users in the amount of 1% of annual earnings for research and development works [4]. It will permit to increase innovative aspects of the advancing geological studying of the subsoil. It is extremely necessary to take measures for providing geological industry with competitive specialists and forming the system of advanced training and certification according to the National system of qualifications.

In the conditions of globalization higher geological education shall be integrated effectively into the common educational space (the international exchange of students of the geological profile, ensuring comparable quality, recognition of qualifications, etc.). Strengthening the language training is provided in the new generation State standard of postgraduate education (master, doctoral studies) alongside with expansion of the academic freedom of a higher education institution that is especially urgent for the geological sphere of Kazakhstan in which there work a lot of foreign companies. For years of independence according to the international Bolashak program there were trained more than 10 thousand experts who studied at the leading higher education institutions of the world according to international standards. Unfortunately, among them there are no Kazakhstan citizens who acquired professional knowledge and qualifications in specialties of geologic-geophysical orientation.

Now the most problematic issues of innovative development of geological industry are as follows [5]:

- a low level of the advancing geological studying of the subsoil;
- a low level of development of the prospecting infrastructure including applied science;
- an insufficient level of monitoring the rational use of the subsoil;
- deficit of the professional personnel in the sphere of geological exploration and geophysics;
- imperfection of the legislative and regulatory base in geology and subsurface use.

There are needed complex measures for increasing the investment appeal of geological industry. Forming the effective state system of geological studying of the subsoil and completion of mineral resources for satisfaction of economic needs of the state at the present stage and in the long term prospect shall become a strategic objective of developing geological industry of Kazakhstan till 2030. All these moments should be considered when designing educational programs for specialties of the prospecting profile. At this "professional competences are developed on the basis of professional standards taking into account the requirements of employers and the society social request".

A successful development of the National system of qualifications provides developing organization-legal mechanisms for mutually advantageous partnership of the education system and the labor sphere. The professional community of employers together with the high school public shall take an interested part in developing high-quality professional standards in which it is necessary to designate the qualification characteristic of the university graduate in the format of the competence-based approach [6].

One of the most important indicators of education effectiveness is the demand for graduates of educational institutions in the labor market. It is no secret that quite often the level of specialists' readiness and the level of the employers' requirements do not match therefore young specialists should "study up" at the adaptation stage. In this regard

the following permission of this situation seems quite logical: the employer establishes to education the requirements to the level of the workers' competences needed for it, and educational institutions taking into account these requirements perform training specialists who are demanded for in the labor market and capable to join quickly the production process. The role of some kind of a "transmitter" of the employers' requirements is assigned to the professional standard which provides education with the necessary information of the areas of professional activity of graduates, objects of these activities, their types and tasks, the required competences of future specialists.

In the professional standard there is pledged a professional minimum to which there shall correspond all employees and heads of the enterprise/company therefore it can form the basis for developing standards of organizations. The professional standard can be used in matching, arranging, using the personnel (promotion, career development, personnel reserve, dismissal) and in case of determining the degree of their responsibility. The professional standard permits the employer: to choose the high-quality personnel in the labor market as it forms the basis for determining evaluation criteria in case of workforce recruiting; to provide the quality of the personnel work; to provide the personnel professional growth; to support and improve the quality standards in organizations through controlling and increasing the workers' professionalism; to increase the personnel motivation in the organization; to increase the efficiency of ensuring stability and quality of the work achieving thereby high economic results.

Professional standards serve as the base of certification. The results of training (competence) are reflected in professional standards and are grouped into qualifications. Each qualification, in turn, belongs to a certain level according to the frame of qualifications: national and industrial. When assessing within the procedure of certification, there is established compliance or discrepancy to the requirements of professional standards. In turn higher educational institutions of the Republic of Kazakhstan shall undergo accreditation, i.e. get permission of the state to educational activities: establishment or confirmation of the state accreditation status of the educational institution including that at the level of implementable educational programs, their orientation, as well as compliance of the content and quality of graduates training at educational institutions to the state educational standards.

The paradigm of continuous education assumes the formation of partnership of the educational process subjects. The teacher shall promote knowledge acquisition, abilities and competences, and the student shall be motivated to acquiring this triad. The main task of the teacher consists in that the student wanted to study, to plunge into the active process of training. It is necessary to fight not for all, and for everyone. In other words, the teacher is to teach not all but everyone. In pedagogical practice it means using an individual, personality-oriented approach to teaching.

First of all it is necessary to achieve increasing the social status of the high school teacher. If we do not make the teachers' compensation competitive, then in the next years the higher school will appear in the default condition. Experienced teachers who are now 65–70 will leave or will lose working capacity, and the talented youth (they are not a lot) can leave the scientific and educational sphere or the country in searching for a worthy salary and possible implementation of their creative ambitions.

Transition to per capita financing (money at a higher education institution is brought by a student) turned each student in the carrier of financial resources. In the conditions of insufficient financing of the higher school the educational policy of a higher education institution is formed proceeding from the principle: maximum increase in the students' contingent and minimization of expelling. Such an educational policy does not promote improving the training quality.

Increasing the prestige of the engineering profession is urgent. Nowadays the training share in the sphere of engineering and technologies in the total number of students in the EU countries makes 36%, in Russia 30,6%, in China 32%, in India 31%, in Kazakhstan at the level of 19% [2]. It is reasonable to increase the amount of the state order for technical trajectories of training, to increase the threshold point of the entrants, as well as the standard rates of training financing in knowledge-intensive technical specialties, in particular geology and investigation, geophysical methods of search and investigation.

In the conditions of globalization the importance of the country is determined not so much by mineral raw material resources as by its economy competitiveness which level depends on the development of the knowledge-intensive and high-tech production and rates of its innovating. The decisive factor in providing this is the expanded reproduction

of knowledge, inconceivable without higher education. Budget costs for education is not a burden for the state but the investment into a person, the most profitable to the society in the long term.

Famous classic of political economy A. Smith wrote: "A person who got education owing to great work and time can be equated to one of the expensive machines". As American scientist E. Kohn determined, between expenses for education and growth of the national income per capita there is a close correlation. About 20% of the USA economy growth are reached by increasing the level of education and qualification of the population.

In current trends there is reflected the increased value of higher education and recognition of the high role of universities in the economy forward development. The world is at the stage of transition to the sixth technological way today. In the number of leaders there will be countries which timely reached this stage. The state program of industrial-innovative development (SPIID) assumes the high-tech post-industrial society with the developed intellectual potential. In the present world there is affirmed the thesis: education is the first link in the chain leading to developing high technologies.

The competitive strategy of Kazakhstan in the context of Strategy-2050 shall be based on developing the scientific and educational capacity of the country. Unfortunately, this potential does not completely conforms to the requirements of the knowledge-intensive economy. Competitive line items of Kazakhstan in the world economy are still rather low. There is no due demand for intelligence. Products are not quite competitive, they do not contain a lot of science intensity and technological effectiveness.

The process of globalization, despite its objectivity, represents the most complicated transformation of the world system in which there is a danger of selecting the unified and simplifying integration models. The Bologna Process which Kazakhstan joined in 2010 is an example of the integration vector of globalization. It required considerable changes in the educational policy [7].

Despite a number of the contradictory moments, the Bologna Process is considered as a capability to speak one "educational" language and as an effective factor of the national education systems rapprochement on the basis of mutual dialogue. The ability to think of general categories and to operate with close value systems permits to build the common space of higher education as the space of understanding.

The expanded autonomy of higher education institutions in forming educational programs and selecting technologies of training is fixed legislatively. The expansion of the degree of freedom assumes the increased requirements to the higher education quality and the need for its objective confirmation. It makes necessary carrying out a systematic monitoring of the efficiency of higher education institutions activities. In this aspect a special role is assigned to independent accreditation of higher education institutions and educational programs. Since 2017 there will be performed transition from the state certification of higher education institutions to accreditation. It provides developing the effective system of education quality assurance including internal and external control.

The point of intersection of higher education institutions and employers interests becomes independent accreditation of educational organizations and educational programs [8]. Accreditation permits to estimate the activities of higher education institutions not only in the context of quality assurance, but also from the line item of satisfaction of all interested consumers of educational services (students, employers). It becomes the working tool demanded for and attractive to various target audiences. In the course of accreditation higher education institutions reveal strong points of the activities and get competitive advantages in the education market. The revealed weak points permit a higher education institution to correct the educational policy and to make strategically correct decisions for training popular specialists. The procedure of accreditation forces the business community to become not only a customer but also an appraiser of the quality of educational services (knowledge, abilities and professional competences).

The processes of globalization are capable to work in the multi-vector directions. The active market rhetoric, expansion of the paid sector of higher education and the academic autonomy of higher education institutions negatively influence the quality. There is leveled the most important thesis of higher education as a public benefit to please the market conditions.. It is not necessary to be guided blindly by the western samples without considering the Kazakhstan realities.

The universities, realizing innovative education, shall train specialists who alongside with a clear civic stand and modern outlook have profound knowledge and professional competences adequate to the developing

new technological way and conforming to the requirements of dynamically changing economy.

The effectiveness of the undertaken reforms depends on the accurate statement of the criterion functions and scientifically based methodology of step-by-step upgrading the higher school in the direction of quality assurance and competitiveness. It is necessary to bring the level of budget financing of the higher school to the Central European standard rates, to provide measures for increasing the social status of the high school teachers, developing the conditions for the fixed growth of their professional competence.

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