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R.A.Baizholova, A.N.Ramashova

L.N.Gumilyov Eurasian National University, Astana
(E-mail: rgul.ksu@mail.ru)

Peculiarities of innovative personnel potential formation of the Republic of Kazakhstan in the development of integration processes

The necessity of the study of innovative human resource capacity issues, revealed his particular form, shows the role of training to a new level, for the successful implementation of the State program of industrial-innovative development of Kazakhstan for 2015–2019 years, in line with international standards, the formation of innovative human resource capacity. The authors examined the current state of development of training for the innovation economy of Kazakhstan, thus noting that training in the education system of Kazakhstan meets the requirements of innovation management in conditions of innovative development of the economy, having solved the narrow task of improving the internal organization of the education system to the labor market and the real economy. In the article the structure of the institution of continuous education and comprehensive training center that will prepare highly qualified specialists of the world level on the basis of educational process in science and industry.

Key words: innovative frames, integration, production, personnel, programs, professional qualification, the labor market, investment, resource, labor.

The current state of formation and development of human resources is to ensure the economy of Kazakhstan, on the one hand, affect those characteristics and trends, the inertia of the action which manifests itself from the time of a planned, command-administrative forms of social and economic development, and on the other hand — in turn, displays new trends in the implementation of the policy of industrial-innovative development in times of global and sub-regional economic integration processes.

To a large extent similar to the inconsistency of old traditions and new trends defines the problem of «backwardness» of the system of education and training from the dynamic changing needs of innovation-oriented economy.

Reflected in the recommendations of the World Bank, resulting from the Report on the results of the analysis SPFIID (State program of forced industrial and innovative development) 2014 and SPIID (State program of industrial and innovative development) — 2019, and according to which «in relation to human resources and skills should be given particular attention to the following factors: communication, to meet the needs of the private sector in the work power, and the role of the private sector in improving the programs used by educational institutions; vocational training, and development of transmission technology, as well as the vital social and emotional skills that can help staff to respond to various unforeseen requirements of the labor market» [1; 6].

The program of the new five-year issues of staffing has found a more complete reflection. In particular, according to experts of the World Bank, «Program 2015–2019 includes a number of elements, which have a beneficial effect on long-term goals in the area of employment, increase labor mobility, and promote investment and further reform of the system of vocational education.

However, experts say, it does not forget about the higher education system, as well as better take into account the demand for labor from the private sector. Skills development is designated as one of the priorities of competitiveness, but it has received little attention to such important aspects as the relevance of the proposed qualifications needs of specific industries. Advent market professionals of a higher level of qualification and to enhance innovation capacity of the country can hardly be achieved without the involvement of the higher education system. According to reform of the labor markets by improving the quality and relevance of higher education which can and should be part of government programs.

The problem is to strengthen the relationships between supply (by educational institutions) and demand (from employers, operating in various sectors of the economy), as well as to coordinate the activities of ministries, which often seek to implement their own programs and are little interested in collaboration with other departments.

The newly introduced model of specialized secondary education can be a good start, but in order to ensure the preparation of educational institutions of various opportunities and alternatives, not only theoretical but also practical training of students, the organizations should be supported properly. Moreover, it should

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more actively promote and actively encourage ministry cooperation and implementation of joint programs of different departments, since the activities in this field requires a lot of effort and time-consuming [1; 35].

It makes sense to emphasize that this problem has long comprehensibility in the domestic scientific and expert community that the special relevance of formation of personnel potential gains in terms of the strategy of accelerated industrial-innovative modernization and the transition from the «raw material» of the economy, priority development of high-tech industries. This is due to the need to modernize the education system, based on an analysis of the existing potential, the strategic tasks, as well as the achievements of the best international practices in this area [2].

In Kazakhstan, the education system is developing in the context of market modifications due to social and economic conditions of development of society, and this new reality has an intense effect on the development of education. At the same time, experts note that up to 40% of the gross national product of most developed countries receives through effective system of education. Experts estimate that one dollar spent in the education system gives 3–6 dollars in profits [3].

All this imposes certain requirements for the improvement of training methods in the education system of Kazakhstan as the main and the main link in the chain of training in accordance with the requirements of dynamic time management innovation in terms of innovative development of the economy.

The complexity of this task is determined by the need to take into consideration in mutually agreed mode of internal improvement and improving external linkages with other socio-economic subsystems.

In other words, a new trend has to be a systematic approach to building human capacity that allows taking into account the totality of both internal and external factors of development.

Moreover, some experts say the cluster approach, believing that the purpose of educational cluster is to improve the functioning of the education market, by maximizing the use of internal and external factors of its development.

Thus, the purpose of education cluster is revealed in his mission as an innovative form of integration of science and education to solve complex problems in the course of pedagogical training and development of the younger generation, training of competent professionals, providing educational services to interested consumers.

In this regard, the Education Cluster should enable continuous «immersion» students in the scope of their future professional activity, allows us to study, synthesize and accumulate best practices, operational test the achievements of science, update and summarize the organization and content of vocational training. In the education cluster open perspective specialties, introducing new subjects and modern learning technology, it is possible to select the higher education systems. The advantages of the cluster are the quality of the educational sciences, continuity, availability, competitiveness of education [3].

As is known to all of Kazakhstan began the integration process of the formation of the infrastructure of science, universities and businesses. In particular, an innovative educational cluster is carried out on the basis of «Nazarbayev University» in two directions: the first — is the transfer and commercialization of technology through the dissemination of the results of their own research to the market; and second — to attract businesses, including foreign ones, to create a scientific units, pilot plants, high-tech companies in the industrial area of the university.

Also in the leading universities of the country it is possible the feasibility of establishing these educational clusters:

– Medical Education Cluster at the medical universities;

– Technical educational cluster on the basis of technical universities;

– Economic Education Cluster — based on T. Ryskulov Kazakh Economic University, and others.

Deep integration of education, science and industry should be implemented in the leading regional universities in the country, which is an effective form of realization of competitive advantages for social and economic development of the region as a whole.

In this case, according to the local experts, the strategic partnership of the cluster type as opposed to the usual cooperation of universities and enterprises should be based on the following principles:

– Complexity — cooperation is carried out in several directions; the balance of the contributions of the parties is determined by the complex, making it easier to reach agreements and is an indicator of mutual confidence and reliability of the strategic partnership;

– Long-term — cooperation on the basis of long-term strategic partnership agreement;

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– Institutional, reflected in the fact that regulatory and methodological framework, mechanisms and forms of the partnership, and so on which are regulated with legal documents; infrastructure entities; long-term programs of activities; the presence of general government, etc.

Scientific and educational institutions in the clusters have a number of important features that determine the competitiveness of the industry. First of all, it is about the development and implementation of new technologies, education and training of employees, consulting firms in different areas, joint use of innovative infrastructure (technological parks, business incubators, centers of collective use of equipment, technology transfer centers, and others.) accumulation and transmission of knowledge between the firms in the cluster.

Implementing these features educational and scientific institutions have access to research funding by private companies implement paid educational programs for employees of firms in the cluster, improve educational programs in order to comply with modern needs, organize students to practice and internships in enterprises cluster, attracted to the educational process practitioners from participating enterprises cluster, as well as improve skills of employees of universities based companies - cluster members.

After the formation of the cluster model of education based on the principles of unity of research, scientific, innovative and educational processes can be achieved the following objectives:

– Improving the efficiency and quality of education;

– Training of highly qualified personnel in order employers and effective use for their intended purpose;

– The creation of large programs and projects, educational, economic, social and technological nature, the intensification of scientific research and innovation, as well as ensuring conditions and opportunities for their realization;

– More efficient use of intellectual, material and information resources in training and research in priority areas of education, science, culture, art and the social sphere.

In the education cluster in partnership of educational institutions, employers and executive authorities, sharing of scientific, educational, industrial, resource and infrastructure capacity, attracting administrative resources achieved socio-economic development of the territory.

At the same time, expansion of the sector of innovative breakthrough should be associated primarily with the development of industries and markets high-tech products. Knowledge-intensive markets are the markets of products of the fifth and higher technological structures. The core of the fifth technological order makes the electronics industry, computers, fiber-optic technology, software, telecommunications, robotics, information services. Now there is the industrial development of the sixth technological order, the core of which includes nano electronics, genetic engineering, interactive multimedia information systems, high-temperature superconductivity, space technology, etc. You must accept the fact that any reform of education — is, above all, the reform of its context that is the most difficult task that the educational standard is an instrument of reform and development of education, and therefore the priority is necessary to adopt the following measures:

1. The education system should be implemented principles of corporate governance and autonomy of universities through the creation of innovation — education clusters, which should: — have the right to the final examination when awarding academic titles of associate professor and professor; enjoy the priority right to participate in national and international programs; — receive assistance from the state and local authorities in the organization of technoparks, business — centers; state receive targeted subsidies for the expansion of training in an accredited future specialties and so on. Graduates of educational clusters have graduated from accredited profession should enjoy the right to an extraordinary provision of employment services of the population. In this system, and a second-rate university diplomas naturally cease to be in demand.

2. An integral part of public education, and science and technology policy should be to promote the strengthening of scientific and technological potential of the regions, which is due to close contact with the local production, can be more effective and viable. Therefore it is necessary to create educational clusters on the basis of regional and inter-regional universities and research organizations. Education and science in the region should be built on the basis of the requirements of local industry and agriculture, as well as the specific socio-economic and environmental problems. Regional educational clusters have also become centers of innovation.

3. Pay special attention to the development of infrastructure in the regions associated with the creation and development of industrial and economic, innovation and export processing zones in particular peculiar developing their feasibility studies and taking into account the peculiarities of budget financing. The result

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will be to create a competitive, export-oriented and import substitution zone, where there will be new technologies, products and services in the field of information technology.

4. Develop and adopt a new Law «On the State Education Standards». State educational standards should reflect not only the basic requirements of the state to the level of knowledge and skills of students in the educational process and the choice of teaching methods, the formation of moral attitudes and moral values of students of different grade levels, but also contain a description of the learning objectives, structure of subjects and methods of assessment, tailored to the needs of industrialization based on innovation.

5. It is recommended to develop a national program «Staffing Modernization of Kazakhstan for 2014–2020», which should contain the relevant sections relating to the development of systems of education, upbringing and education of the population in the context of the forced industrial — innovation development of the country. The state program should be given a special place on increasing the role of the innovative management of the new economy. Particular attention should be paid to the quality of human resources and its spirit of innovation. From this perspective, it should be stated that in the country, particularly in regions not yet formed a human resources corresponding to 5–6 technological structures [3].

With regard to the internal problems of the education system of Kazakhstan President Nursultan Nazarbayev regularly put the problem to be solved Kazakh universities. It is primarily the task of providing education to the world standards, to the diplomas of universities of Kazakhstan were adhered by the world. Thus, the ultimate goal is the need to form a personnel reserve for technology-intensive enterprises. According to Kazakh experts W. Bayzhomartov, E. Sagindikov, D. Tabachnikova and T. Nurbosynov, practical solution of this problem could be a model educational institution integrated continuous education that would prepare national technical personnel (Fig.).

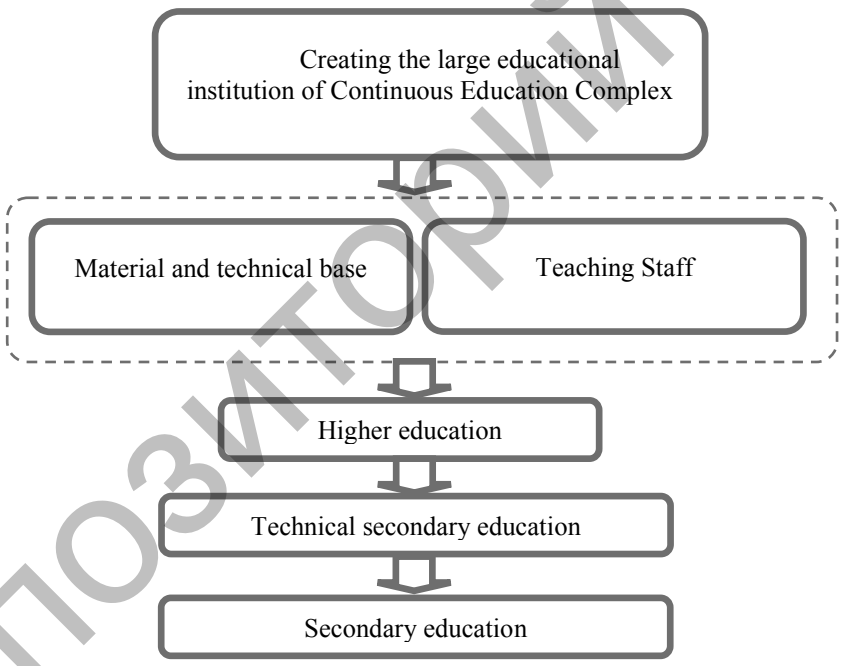

Figure. Structure of the institution of continuous education complex (Source: [4])

These experts are considering in terms of training for the mining, oil and gas and metallurgical industries, although, in our opinion, the issue is much broader sectored coverage in terms of formation of an innovative economy. This school allows for a single material and technical base with a single teaching staff to train highly qualified personnel of technical specialties all professional levels and become active on the effectiveness of the training center (CT).

This will allow the CT to prepare highly qualified specialists of the world level on the basis of educational process with science and industry, and will allow for training and skills development, to carry out research projects which are able to provide an innovative breakthrough in the country's economy. Priority is also a strong focus on the preservation and reproduction of the scientific elite [4].

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It must be borne in mind, and this trend as the process of commercialization of education. In particular, I. Krachkovskaya notes that universities in most countries are a key element not only of education but also research system. But in the era of the formation of the knowledge economy limited budgetary resources were not sufficient to fully fund education, «lifelong learning» of all willing and able for such training, to provide the required labor market individualization of educational programs to enhance the role of educational institutions in the innovative development of the economy [5; 52].

At the same time, Kazakhstan desire to integrate into the education market environment has led to the over-commercialization sphere of training of specialists for the economy, with a decrease in their quality level and structural imbalances of trades and professions.

In this regard, and in terms of improving the management of human capital in higher and vocational education should seek a «middle ground» between the formation of human capital and effective commercialization of the education market.

In terms of active formation of the «new economy» and increased competition in global markets, especially high-tech, it is important the integration of science and education in a single complex. Taking into account international experience and institutional features of the national scientific and educational complex in this area, according to L. Hochberg, whales and G. T. Kuznetsova, the political will guide the country, aimed not only to changes in budget priorities and improve its fiscal policy but holding fairly tough policy to reform the complex.

The most rational approach to the further institutional development of science and education, according to the aforementioned authors — the creation of conditions for the emergence of a lineup of various integrated structures to ensure a high level and advanced nature of training, retraining and advanced training of specialists in the promising areas of science and technology, improving quality Education and research efficiency.

This sequence of actions should, in the opinion of these authors, be: the formulation of national goals related to the development of scientific and educational complex — the choice of the most effective forms of integration — creating the conditions for their emergence and development — clarifying the legal framework [6; 127].

Kazakhstan scientists and experts in the field of education also raise the question of integration of science and education. In particular, the development of innovative activity in the country is directly linked to the state of fundamental and applied science and commercial, scientific and technical developments. The most valuable knowledge is becoming creative thinking, the ability to process knowledge, render new solutions, technologies and innovations. This requires new methods, new forms of teaching, new experts. We know that the country is not able to develop knowledge in the XXI century is doomed to failure. We must form a personnel reserve for the high-tech and knowledge-intensive industries of the future. Without the innovation of education and creative managers and modern ambitious, in a new way, we cannot create a new economy. At the same time, in his opinion, the prioritization should be: first — education, science, the second and the third — an innovative economy [3].

I think that the priorities are, in principle, it is logical, especially when you consider that until now the priorities were set exactly the opposite, and yet remain so: innovative economy, education and science. This defines the backlog of Education and Science of the more queries economy rapidly develops in an innovative way.

The main reasons for the need to integrate science and education, is associated primarily with the creation of an effective system of fundamental science through cooperation of scientists of higher educational institutions and research institutions, conservation of leading scientific schools, improving the quality of education, the development of new forms of organization learning process.

The current state of integration of science and higher education in Kazakhstan is characterized by various forms of joint activities of universities and research institutes. First of all — this co-operation agreements in the field of basic and applied research, development and implementation of research projects and programs, training and manufacturing practices in laboratories and experimental farms Research Institute, attracting leading scientists of the Research Institute for the training sessions, management practice, students and diploma works, joint training of doctoral students and undergraduates, lecturing at leading universities of the country.

As international experience shows, scientists are not divided only by researchers and teachers. As a rule, and those and others involved in science, and teaching, working in a common scientific and educational center, is a university with a network of research institutions.

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Quite a new element relating to the financing of university research is a system of grants, which is regarded today as the basis for selective support of small, but the most capable teams and individual scientists. It also serves as a social and scientific recognition of artists and projects, contributes to the independence of the selection of subjects of research provides an opportunity to further the search for solutions of fundamental problems. Enough well established competitive system of funding research projects through the Foundation for Science of Kazakhstan.

Introduction of innovative forms of integration of science and education, as shown by international experience, enhances the effectiveness of research. The ultimate goal of the integration of science and education in Kazakhstan should be the staffing of the national innovation system and the economy as a whole. The main areas to achieve this goal are:

– Improving education and training of scientific and technical personnel with advanced knowledge on the level of the latest achievements of science and technology and practical experience in scientific research, obtained in the process of learning;

– Attract and retain talented young people in science and education;

– More efficient use of budget funds, personnel, information and material resources of research institutions and universities in conducting basic and applied research and training of scientists;- Intensification of the relationship with the business sector of the economy and corporate science and the commercialization of research and development and technology transfer in the real economy [7].

One of the most effective methods of education is its integration with science and industry. This integration provides a synergistic effect and intensifies the development of all components of the triad. Unfortunately, in Kazakhstan the process of integration of science, education and industry is insufficiently developed. Today in the republic is actively in the process of corporatization of scientific organizations with very vague objectives in terms of the needs of scientific development, the commercialization of universities, which contributes to, rather, competition rather than cooperation and integration.

Particularly acute at the present stage becomes insufficient orientation of the teaching staff in the innovative development of the country and their adaptation to market realities of science and economy. The current system of education in Kazakhstan, sells mostly traditional model of education that focuses on mastering subject-disciplinary knowledge. Meanwhile, in the new environment specialist should focus not on what is needed today, and that will be in demand tomorrow.

Of course, considered here the main features of the modern trends in the formation and development of innovation-oriented human resource capacity are dynamic, which involves the application to the analysis and management of these processes, a systematic approach that takes into account the diversity of internal and external factors influence.

This is especially important, in our view; in the current circumstances is not so much a world of economic globalization, but, as with the light of current and prospective neighbors' realities of Eurasian integration.

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Р.А.Байжолова, А.Н.Рамашова

Интеграциялық үдерістерді дамыту жағдайында Қазақстан Республикасында кадрлық әлеуетті инновациялық қалыптастыру ерекшеліктері

Мақалада кадрлық әлеуетті инновациялық қалыптастыру қажеттілігі зерттеліп, оның негізгі ерекшеліктері анықталды. Қазақстан Республикасының 2015–2019 жылдарға арналған Индустриялық-инновациялық даму мемлекеттік бағдарламасы табысты жүзеге асуы үшін, елімізде сапалы, халықаралық стандарттарға сай инновациялық кадрлық әлеуеттің рөлі артқаны көрсетілді. Авторлар Қазақстанның инновациялық экономикасы үшін кадрлар даярлаудың қазіргі жүйесін қарастырды. Экономиканың инновациялық дамуында кадрларды даярлау инновациялық менеджмент пен Қазақстанның білім жүйесінің сәйкес екендігі анықталды. Еңбек нарығы мен нақты экономика қажеттіліктері үшін білім беру жүйесін жетілдіру жолдары шешілді. Мақалада кадрлар даярлау орталығы мен үздіксіз кешенді білім беру оқу орны ұсынылды. Оқу процесінің интеграциясында, ғылым мен өндірістің ықпалдасуы негізінде, әлемдік деңгейде жоғары білікті маман даярлау мүмкіндігі туындағаны айқын болды.

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Особенности формирования инновационного кадрового потенциала Республики Казахстан в условиях развития интеграционных процессов

В статье обосновывается необходимость исследования инновационной проблематики кадрового потенциала для успешной реализации Государственной программы индустриально-инновационного развития Республики Казахстан на 2015–2019 гг., раскрываются особенности формирования, показывается роль подготовки кадров на качественно новом уровне, соответствующем международным стандартам. Авторы рассмотрели современное состояние развития системы подготовки кадров для инновационной экономики Казахстана, отметив, что подготовка кадров в системе образования Казахстана соответствует требованиям инновационного менеджмента в условиях инновационного развития экономики, решены узкие задачи совершенствования внутренней организации системы образования в соответствии с требованиями рынка труда и реальной экономики. В статье предложена структура учебного заведения непрерывного комплексного образования и центра подготовки кадров, которая позволит подготавливать высококвалифицированных специалистов мирового уровня на основе интеграции учебного процесса с наукой и производством.

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