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INTEGRATION OF SCIENCE, EDUCATION AND PRODUCTION IN THE CONDITIONS OF INNOVATIVE DEVELOPMENT OF KAZAKHSTAN

Annotation. *In modern conditions of human existence, it is necessary to generate a new type of human for whom the need for creativity, self-development and self-changing will become significant. People of postindustrial society will have to demonstrate the ability to design, to a greater extent than copy, constantly engage in self-education, because information environment requires a great deal of intellectual mobility. In the period of modernization of Kazakhstani economy improving the system of training personnel with higher professional education became actual issue.*

Innovative development of the country requires rebuilding of education system, and it is possible in terms of integration of science, education and production.

***Key words**: science, education, integration, innovation, human capital, values.*

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The main resource of modern society is information. If capital was a stimulating or limiting factor in the development of society in an industrial society, today in a post-industrial society this factor is knowledge. In an industrial society, it was possible to possess capital without being competent in the laws and mechanisms of its use. Nowadays, in a post-industrial society, the possession of an intellectual product does not give anything, first of all it is necessary to be able to use it. The ability to use an intellectual product with varying degrees of efficiency is formed in the process of education. It should also be taken into account that knowledge and information cannot, like material resources, be generated with guaranteed success as a result of economic coercion. A creative person capable of creating a unique intellectual product cannot be formed in a short time, using mobilization methods. The desire for new knowledge, from which the subject of the information society grows and develops, should be a strong personal motivation.

The interests and values corresponding to the creative personality are laid down from childhood, formed during the dialogue of generations, as well as through the influence of educational institutions. In modern conditions, education should have a completely different meaning. It should be a "basic" phenomenon. In the modern world, innovative education is becoming the most important requirement of the time. As noted by D. Bell, in a post-industrial society, "the main thing ... was the dominance of theoretical knowledge, the predominance of theory over empiricism

and the codification of knowledge into abstract sets of symbols that ... can be used to study a variety of spheres of experience" [1, p. 25].

Today we observe how in economically developed countries so much attention is paid to the problems of education: general strategy, financing, variability, continuity. Education is considered as an effective way to increase the human potential of society, and the importance of this process is justified not only by the economic benefits associated with overcoming the functional illiteracy of the population and acquiring the necessary qualifications by the workforce. The social effectiveness of education, which allows people to innovate in their lives and work, competently build relationships with other people, and actively participate in decision-making affecting their future, is strongly emphasized. First of all, among the expected learning outcomes is the development of internal activity of the individual. And this, in turn, forms a person's self-esteem and a sense of satisfaction, which enable an adult to carry out new projections of his personality on the environment, is thought to be a factor in the development of human capital. According to J. Dewey, the social effectiveness of education should not be reduced to direct and qualified performance of official duties, since its main components are certain human qualities - reasonable empathy, goodwill, the desire to make your internally meaningful experience useful and important for other people. Such results of education, according to the philosopher, can contribute to the growth, development and preservation of democracy [2, pp. 117-118].

Such an ethical principle turns out to be unattainable for the majority. Even in the developed countries of the modern world, these named ideal educational results have not yet been fully achieved. This is explained by the fact that the European educational model, aimed primarily at the formation of a "knowledgeable person", has an ethical neutrality. But in an environment of economic and social stability, the axiological insufficiency of the current model of education can be compensated by the basic values and axioms of culture that remain in society (national idea, national symbols, age-old traditions, family values, healthy lifestyle).

Modern education should form a picture of the world that ensures the orientation of the individual in various life situations, including in a situation of uncertainty. It is necessary to recognize that the human environment is changing significantly today. The information environment is dominant, and social and industrial acquire a different meaning in a person's life than before. We are witnessing how modern man is facing a future that is so unknown that it is difficult to predict the development of both natural and social processes.

The processes taking place in the modern conditions of human existence, i.e. in the information society, will entail the formation of a new type of person for whom the need for creativity, self-development and self-change will acquire, if not dominant, then certainly significant. A person of a post-industrial society will have to demonstrate the ability to design rather than copy, constantly engage in self-education, since the information environment requires great intellectual mobility.

The essence of education in modern society is reduced to the versatile development of personality and the realization of the personal potential of the younger generation. The reforms and modernizations taking place today in all spheres of life of our society - science, politics, economy, culture, are aimed at restoring the personal principle in society. Knowledge, skills and abilities as human resources in modern concepts are considered not as the goals of education, but as its most important means that ensure the achievement of the main educational goal – the upbringing of an initiative, active person with a pronounced creative personality, a highly moral, free personality, a responsible citizen of a democratic society.

The current Law of the Republic of Kazakhstan "On Science" defines that the main activities of a higher educational institution are, in addition to educational, scientific, scientific-technical and innovative. In the period of modernization of the economy of Kazakhstan, an urgent problem is the improvement of the system of training personnel with higher professional education. The innovative development of the country requires the restructuring of the education system. This is due to the fact that it is necessary to restore material production, which requires new knowledge and skills in the conditions of scientific and technological progress. «Innovations are

unthinkable without qualified personnel trained by IT. A high-tech, knowledge-intensive economy is not able to develop itself, without the necessary productive funds, technologies, and, most importantly, an educated and highly qualified employee. The use of qualified personnel of the country means the increment of the social product, the creation of comfortable living conditions and development. A person with knowledge, skill, experience, means of production is able to use them to solve various tasks, engage in inventive or rationalization activities. He is the subject of innovation, organizes and implements the innovation process» [3, p. 74].

The labor market imposes different requirements than before for the training of personnel in the system of higher professional education. Today, competent personnel who are able to work effectively and manage in new socio-economic conditions are becoming in demand all over the world. In the process of their preparation, the focus on personality and competence plays a major role.

Such specialists are able to take a broader look at the changes taking place and grasp the essence, competent individuals have the creative potential of self-development. Such individuals are responsible for the decision made, will be able to determine goals based on their own value orientations. For them, the work itself is a value, and they are capable of high-quality implementation of their professional activities.

Innovativeness is the ability to improve, to create something new in your profession. The development of innovation takes place in the space of the entire world civilization, while a decisive role in this process belongs to higher education, which has the opportunity to create prerequisites for the individual, focusing on patterns, to find his place, learn to transform traditions, to see the future.

A number of universities in our country have the necessary resources (material and technical, experimental, information base, experienced teachers) to implement such a task.

Joint cooperation between enterprises and universities can be built in different directions: both in research and in the field of personnel training. The development and maintenance of these ties can become a mechanism for the economic

strengthening of the position of the enterprise itself in the market and its entry to a new level in terms of quality indicators of production, as well as the university in terms of financial assistance from the enterprise and the opening of new areas of research in solving production and technical problems.

Currently, the integration of education, science and production should be considered as one of the most important priorities aimed at training highly qualified specialists who meet the needs of the labor market in the conditions of the development of an innovative economy.

The integration of education, science and production is the joint use of the potential of educational, scientific and industrial organizations in mutual interests. First of all, in the areas of training, advanced training and retraining of personnel, as well as conducting joint scientific research, implementing scientific developments, etc. These integration processes cover a wide range of different areas of activity and manifest themselves in a variety of forms. The rapid development of the means of communication gives information a unique position in society. It began to have a direct impact on all spheres of economic and spiritual activity of a person, turned into an international means of interaction and mutual influence of states, industries, firms and even individual specialists. There is a high level of interaction between science, education and production, since the media here are often the same persons, specialists using a single information environment. Integration processes between the activities under consideration, firstly, are economical and efficient, secondly, accelerate scientific and technological progress, and thirdly, allow rational use of the intellectual potential of science and higher education not only of an individual country, but also of the world community as a whole. Generalization, analysis and use of this experience can bring huge benefits to all participants in this process.

In Kazakhstan, as part of the work on the integration of science and education between the research institutes of the Ministry of Education and Science and the Al-Farabi Kazakh National University, a project is being implemented to integrate science and education in joint master's and doctoral degree programs. This integration of science and education is an important factor ensuring, on the one hand, the influx

of personnel to scientific organizations, on the other - improving the quality of the educational process by attracting leading scientists to teaching, as well as increasing the level of research conducted both in scientific organizations and at the university.

The project started in the summer of 2014. For the first time, research institutes take a direct and direct part in the selection of candidates for admission to the master's degree and PhD, having the opportunity to thoroughly communicate with future undergraduates and doctoral students in advance, to find out their scientific interests and potential opportunities.

1. Using the comprehensive advisory methodological assistance of KazNU, the Institutes themselves developed curricula, filling the modules of professional training of specialists with elective disciplines that are focused on the state educational standards approved by the Ministry of Education and Science, but are directly related to the relevant and most promising areas of scientific research of each Institute.

2. All the doctoral studies of the Institutes, without exception, are aimed at ensuring that doctoral students are included in research projects of the Research Institute from the very first weeks of training. The topics of not only doctoral, but also master's theses are related to those scientific programs and projects that are implemented in Institutes.

3. In accordance with the General Agreement signed on July 23, 2014 between the Research Institute and KazNU, the Institutes, with the support of the methodological bureaus of the University faculties, gained experience in drawing up flexible, competence-oriented curricula, combining this principle with the broad possibilities of several learning paths within a particular specialty.

4. Institutes have started using their scientific journals, as well as "Izvestiya NAS RK", collective monographs, collections of conference materials for the publication of scientific papers of undergraduates and doctoral students.

5. In fact, the educational programs of master's and doctoral studies of Institutes represent a new model of integration of advanced domestic science and the best achievements of university Post-Graduate education, which is based on a

combination of scientific achievements and experience of Institutes and modern, innovative educational technologies of KazNU.

6. When determining the topics of master's and doctoral dissertations, research institutes of the KN MES RK proceed, by definition, from their own scientific directions and priorities. The purpose of this approach is to involve undergraduates and doctoral students of the Research Institute in real research within the framework of grant, contractual and other research projects of the Institutes. This is the main idea laid down by the leadership of the Ministry of Education and Science of the Republic of Kazakhstan in the integration project.

In general, the project has proved its realism.

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