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NATIONAL SYSTEM OF QUALIFICATIONS AS A MECHANISM FOR ENSURING AN INTEGRATED APPROACH TO THE DEVELOPMENT OF HUMAN CAPACITY IN THE YENISEI SIBERIA

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ABSTRACT

Formation and development of the centralized national system of qualifications has become a burning issue in the Russian Federation. This is due to a number of essential reasons, which include globalization of the economy, specifying of universal competencies being in demand in the labor market, the existing gap between university curricula and professional standards requirements.

The article aims at presenting a review of the relationship between the Russian national qualifications system, its evaluation of labor competencies, activity of universities and representatives of the labor market.

The case for the Yenisei Siberia project is used to present the relevance of the problem of a high demand for highly skilled cadres to achieve the strategic goals of economic development of Krasnoyarsk Krai – one of the most promising regions in Russia. The main question of the article is the potential benefit of the national system of qualifications development and evaluation being under implementation now for "the Yenisei Siberia" project success.

The research methods used are both qualitative and quantitative and include literature review, statistics, data analysis, processing of the received results, including phenomenological description, poll.

The practical significance of the research is in the development of approaches to implementing a formula for success in the needs analyses and specifying the training methods to make the cadres ready to work in high-tech industries of the modern economy.

The findings have shown that the system under research implementation can make an opportunity to increase labor productivity and improve the structure of the GDP. Another result is the substantiation of the chance to save on selection and training of cadres as well as rising effectiveness and efficiency of the corporate labor relations.

Therefore, introduction of professional standards into the companies' activities is the major component of the national system of qualifications, the new professional requirements for cadres. As for the relations of the industry with universities, the introduction of professional standards is seen as a technological process to harmonize and strengthen the ties of higher educational institutions and the labor market.

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Thus, universities aim to train the so-called "transfessionals", those with broad vision and wide range of competences making them able to adapt to the fourth industrial revolution, and using digital technologies.

**Keywords:** national system of qualifications, labor market, labor competence, transfessional, university training.

**INTRODUCTION**

The Economic Forum 2018 in Krasnoyarsk presented one of the most ambitious project of modern Russia — “The Yenisei Siberia" project. It aims at combining the potentials of Krasnoyarsk krai, Khakassia and Tyva Republics, which are closely linked together by a shared history, long-term good-neighborly relations and one river, the mighty Yenisei. These territories do not compete, but complement each other in a powerful energy production, well-developed aluminium industry, growing coal industry and integrated transport network. In his speech, the Governor of the Krasnoyarsk krai stressed that the regions have everything needed to make the backbone of the Eastern vector of Russia: they occupy an important geopolitical position and have all the prerequisites to become a bearing region of Russia in the East. In addition, promising industrial potential, major research and educational complexes define powerful development trends [1].

**METHODS AND MATERIALS**

The specialized literature and open publications review has shown that the agricultural area of the territories is very extensive, and 112 million hectares, making 5% of the total RF territory, the resident population is 7.4 million people. Thus, the "Yenisei Siberia" includes 15 investment and infrastructure projects, which should contribute to the balanced development of the whole territory of Siberia. The Investment project capacity is over 500 billion rubles. The project involves developing the Northern deposits of the Krasnoyarsk krai, creation and renovation of transport infrastructure including increasing gold extraction, building of enterprises producing aluminium of high redistribution, building warehouses and sorting centers, launch of multimodal transport ways. All this enhance solving social tasks, increase regional industrial production scale [2]. Realization of large-scale investment projects will require the involvement of a large number of cadres well qualified in various fields. Creating more than 70,000 new jobs will become not only an opportunity but also a challenge for the training system.

The key objective of the "Yenisei Siberia" Corporation is creating favorable conditions for the territory socio-economic development, promoting integrated advancement of the participating regions the investment project. The challenge for Government and business is to transform the investments into tangible benefits for residents of the territories: infrastructure development, new jobs creation, increased tax revenues, as well as growth of real incomes of the population. Development Corporation is not to become a single coordinating body of the project, where the on-line platform serves as a tool for comprehensive support of the investment projects, loyalty to legislative and infrastructure limitations clear implementation of project management methodologies. The mechanisms for the involvement of small and medium-sized businesses, scientific-educational complexes will provide projects with reliable suppliers of goods and services, thus creating a multiplier effect on the economy of the regions. The anticipated effects of the project are the following: more than 12 thousand new jobs, about 10% growth in industrial production and about 15 percent growth in tax revenues. Among the most important tasks of the Development Corporation of the Yenisei Siberia is development and implementation of measures for staffing participating companies and organizations of the project.

**RESULTS**

The research has found that the priority of the Krasnoyarsk krai as a part of the Yenisei Siberia is innovation development in the framework of cluster economy. The processing of substantial commodity stocks and other areas included in the conglomerate, demand highly qualified personnel from different areas of the labor market attracted from different Russian regions and the Yenisei Siberia in the first place. However, considering the challenges and dynamics of the labor market for the period 2005-2017 timeframe the publications indicate that the structure of employment has changed for the last 12 years. Trade has occupied the leading positions, whereas manufacturing ceased to be the biggest sector of the economy.

The analysis of the employment structure has revealed a relative increase in the number of specialists of the highest qualification, executives and service employees, alongside with strong relative decline in unqualified, low qualified workers, especially, agricultural workers. The reason for the decrease in production was identified as the main reduction of high-performance jobs, but reducing the volume of production and decrease of workforce to trade and services. Actually, it means the decrease or loss in qualifications necessary for the Yenisei Siberia development.

The personnel problem also relates to demographic characteristics. According to the new forecast of the Ministry of economic development, for five years from 2016-2020 the number of the active population of the Russian Federation (men aged 16-59 years, women aged 16-54 years) will decline by about 3 million people. In the medium term, the workforce would decrease from 72.2 million in 2016 to 71.7 million in 2020. The working age population can drop from 83.7 million to 80.6 million [3], [4]. The question about the ways and places to get high-qualified cadres remains open. Another issue is the level of qualifications relevant for achieving the strategic goals of the country's socio-economic development in general, and the success of the project Yenisei Siberia in particular.

As for the specialists with higher education, today the following high reputed scientific and academic institutions have become suppliers of young professionals for Krasnoyarsk krai: the Siberian State University of Science and Technology after Academician Reshetnev, the Siberian Federal University, the Universities of Tomsk city and Novosibirsk.

At the same time, high skilled workers need special training to acquire and train the competencies required to perform certain types of work. Awareness in the need to improve training in order to meet the ongoing changes in international practice have led the Council on strategic development and priority projects under the RF President (from October 25, 2016 no 9) to approval the so called Passport for the priority project "Education" in "preparing highly qualified specialists and cadres to meet modern standards and advanced technologies" ("working cadres for advanced technologies") [5]. The aim of this project is to create a competitive system of secondary vocational
The survey of employers of Krasnoyarsk krai (200 people) aimed at revealing their attitude to implementation of the national qualifications system, has found that the majority (69.5%, 139 people) welcomed the introduction professional standards in Russia. 30 people (15%) cannot connect the positive effects the economy's dependence with the introduction of the National Qualification system, while 26 people (13%) are against such innovation, considering that other tools exist to assess the level of qualification. The rest (2.5%) are aware of the need to introduce the system, but urged to consider the experience of the employers and not jump to conclusions.

Obvious are gaps between the requirements of the employer the necessary competences, in which companies have a need here and now and the quality of training of specialists represented on the labor market, whose competence model was developed around five years ago.

CONCLUSION

So, what are the expectations from the introduction of the National system of Qualifications in the part of human resources development and an effective recruiting in realization of the Yenisei Siberia project tasks? First, we treat it as a tool to identify the correspondence of existing knowledge and skills to professional standards, i.e. to a certain threshold that can be the starting point to improvement the employee qualification and rising their competitiveness and confidence the employer in their personnel. Confirmation and recognition of qualifications, irrespective of its receipt would be sought-after specialist, competent in profession, but not having the required level of education. As for building a career, we foresee an increase in opportunities for professional development, recognition of the achievements of staff and as a result, just wait ... We expect to use the target point, the nature of the time and cost of vocational education and training among young people.

Key limitations in the form of crisis mistrust the new system may be misunderstanding of university graduates of the need to pass a qualification examination. It will lead to additional costs, both in material terms (pay for certification), and psychologically. Lack of professional experience of young people, fear of change among professionals, the conservatism of the thinking of educators, students, employers indicate the need to reconsider work among the population. Overcoming inertia and high trajectory of development will lead to new ways of thinking in all members of the labor market.

Today the strategy is determined not by time itself, but by the challenges that time makes. In addition, University can unite the employer and the job seeker in the labor market today being now in the situation of transition to internationalization, innovation, project activities, digitalization and should become one of the major drivers of economic development.

All forces today are aimed at the success of the project, which can only be achieved in the daily work, aimed at capacity building. So, the purpose of the competition “Leaders of the Yenisei Siberia” is finding, development and support of qualified residents of regions-participants of the Yenisei Siberia through implementation of major investment projects. Participants will have the opportunity to get acquainted with the most active specialists and managers of the project. Within the passing stages of the competition the participants will receive a comprehensive assessment of their skills and abilities, recommendations for individual educational program, an individual card of the competencies will be trained and get a chance at an individual offer on employment.
OPTIMIZATION OF THE LEARNING PROCESS ON ADAPTIVE TRAINING COMPLEXES

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ABSTRACT

The article deals with the approach to solving the problem of optimization of the educational process using adaptive training complexes. During the analysis of the subject area it was found that there is no detailed and formalized model of the learning process with the use of training complexes. For this reason, it is also difficult to set and solve the problem of optimizing the learning process. Therefore, the authors propose the necessary mathematical support to formalize the learning process at the training complexes. The presented model includes a description of the psychophysical parameters of the student, which allows to adapt the learning process to the individual characteristics of the person, to improve the efficiency of learning in General. The article proposes an approach to optimizing the process based on the solution of multi-criteria problem, as the criteria selected time and quality of training, as well as the cost of its organization. The results of scientific research presented in the article are universal and can be used in the further study, organization and optimization of learning processes in various subject areas.

Keywords: adaptive training complexes, the learning process, formalization, formulation of the optimization problem

INTRODUCTION

At modern industrial enterprises, the information systems and complexes, aimed at developing the necessary competencies for interaction of personnel with the environment in regular and emergency situations, are becoming increasingly widespread. A special place among them is occupied by adaptive training complexes (ATC). They have already proved their effectiveness in training and attestation of personnel at industrial, transport, medical and other enterprises; however, from the point of view of mathematical modeling, quite a lot of unexplored aspects remain in this area.

The application of training complexes allows mastering both the necessary theoretical knowledge with high efficiency, and also developing practical skills, accelerating the process of mastering professional and universal competencies due to the use of modern information technologies and visualization tools. We must note that the use of