Modern features of interaction between employers and universities: Arctic aspect

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Abstract. The mission of Russian universities is to train highly qualified specialists for the labor market, to expand the intellectual potential for the development of the country, to provide the society with a constant flow-in of modern-minded and socially responsible young citizens. For this purpose, the state is constantly developing and introducing new forms of training of highly-qualified personnel. It also cooperate with employers in universities. In general, the article aims to compare the processes of higher school personnel training and the provision of employers with employees at the present time. The challenges posed to modern universities and the restrictions which universities face when solving them, in view of the northern specifics of training, are considered. The current topical forms of training implementation and cooperation of universities, enterprises, science and government are presented. As a result, the conclusions were drawn both about the opportunities and the threats related to the elimination of the “distance” between the structure and content of university training and the prospective personnel needs of both the Russian economy as a whole and the economy of the Arctic regions.

1. Introduction
Modern trends in the development of higher education in Russia are setting new and new tasks for universities. At the same time, universities, as before, should train highly qualified personnel, first of all, taking into account the requirements of professional communities and in fact be responsible for the further employment of graduates.

2. Research questions and discussion
The most important tasks in these conditions are:
1. Improving efficiency by means of labor market demand.

The state has a significant impact on changing the role of universities in the labor market, expanding the list of requirements for their activities.

First, the Ministry of Science and Higher Education of the Russian Federation annually assesses the effectiveness of educational institutions on 7 different indicators, one of which is “The proportion of graduates employed during the calendar year following the year of graduation in the total number of graduates who studied in educational programs of higher education” [1]. Thus, in 2017, the minimum threshold value of this indicator was 70%. Failure to comply with 4 of the 7 indicators of performance monitoring in most cases leads to the implementation of measures for state control (supervision) in the field of education over the activities of the organization and, consequently, to the possible deprivation of a university of accreditation (license).
This criterion implementation has certain difficulties, both objective and subjective ones. Young people often get their first education under the pressure of their parents, so after graduation from the university, they search for a proper education and often go to study again. According to specialists, modern applicants are characterized by a low level of self-determination in choosing a profession [2]. Not only applicants but also the state should be interested in students making a proper choice of professions because a motivated student, as a rule, is distinguished by a high level of academic performance, and then duly performs his labor functions. Thus, it is necessary to talk about the quality of career guidance activities at schools.

Ideally, the degree of acceleration of graduates’ preferences in the professional sphere and education should be as follows: the applicant has a clear idea of a particular organization, a particular workplace (profession, position), a specific educational institution, a specific direction of study [3]. It is assumed that the professional choice should be made on the basis of an applicant's assessment of his abilities and capabilities, the content of the profession, and the socio-economic situation [4].

Modern process of informatization, individualization of production and consumption is running not for the good of the achievement of the required level of employment either. This process is constantly making new demands for future university graduates in contrast to the times when the basis of the country economy was made up by mass production, when technology was not changed dynamically enough and the necessary skills which would be claimed by the employers in 5-10 year period had been determined.

Secondly - the requirement for cooperation between universities and enterprises regarding the determination of the content of graduate training and the assessment of its quality. Here we also face multidirectional trends. On the one hand, they require a graduate who possesses both hard-skills, i.e. professional knowledge and technical skills related to the activities performed, and soft-skills - social and psychological skills that allow you to be successful regardless the specifics of the activity: communication, leadership, team and public abilities, time management, erudite abilities, critical thinking, creativity, etc. On the other hand, they require a graduate who has specific training focused on specific hardware or software installed at a particular enterprise, i.e. it is necessary to prepare a student for a particular workplace.

Thus, we can conclude that modern business has not developed a universal approach to “young” personnel. There is a blurring of requirements for the competences of employees, and in general, the majority of Russian employers are not ready for an efficient interaction with universities. However, in general the breadth and depth of knowledge are required from university graduates.

Thirdly, the Ministry of Science and Higher Education of the Russian Federation forms the structure of the admission control figures (ACF) for training at educational organizations at the expense of the budget allocations of the federal budget. This process is inert and as a result the structure of ACF is changing slowly and does not always correspond to the transformation processes of regional labor markets. As a result, the regions sooner or later face the problem of staff shortage. The obvious consequences of this process is unreasonable wage growth for certain professions (when inviting ready-made specialists from other regions), and an obstacle to the implementation of investment projects. Thus, the personnel shortage goes beyond the problems of individual enterprises, and becomes a factor constraining the economic development of entire regions [5].

It should be noted that the process under consideration for individual territories may have more serious consequences. For example, the regions of the Russian Arctic are the most vulnerable to various political and economic decisions that influence the formation of regional labor markets and are directly dependent on demographic process. Thus, from 1990 to 2014, the population of the regions belonging to the Arctic zone of the Russian Federation decreased by 19%. At the same time, the population of the Russian Federation decreased by 1.35%, i.e. the regions under consideration are characterized by a rapid decline in population compared with the country as a whole. In general, the regions of the Arctic zone demonstrate a much higher migration loss than a natural one.

At the same time, the most mobile, young population possessing useful skills leaves for the regions having more comfortable living conditions. Migration loss of the youth also intensifies a natural
population loss as the proportion of the childbearing population declines. This leads to population ageing, a reduction in the proportion of the working population and accordingly a slowdown in economic growth [6]. Thus, the ability to meet the economic needs of enterprises in the labor force, as in the case of the Arctic regions, is characterized, on the one hand, by employment difficulties and on the other hand, by a shortage of labor force. In social process it is characterized by the increase of the unemployment rate, a widening gap in citizens' incomes, the decrease of the share of middle layer and the overall decline of the population standard of living.

Moreover, due to the fact that the production structure of the Russian Arctic regions is dominated by the share of industries associated with the extraction and processing of mineral resources, graduates of technical and engineering training courses are in great demand among employers. However, due to the fact that the subject of labor is a mineral, the quality, depth and processing of which varies in different enterprises, so the technologies used are also very diverse. Therefore, it becomes more and more difficult to prepare a universal student, suitable for a particular workplace. Professional standards in a variety of engineering and technical fields (for example, Mining) are not available yet.

The admission control figures of arctic universities demonstrate the prevalence of technical areas, but in order to be enrolled, students in most cases have to pass an exam in Physics. And here another “weak spot” manifests itself: due to complexity and other reasons, school leavers are not eager to choose this exam as a final, and those who do it purposefully seek to enter central universities.

All this leads to a weakening of the development opportunities that have been preserved in the Arctic regions, and forces the authorities to develop their solutions in even more extreme conditions [7].

Summing up the considered above processes it should be noted that the requirements imposed by the state do not contribute fully to the solution of the problem of graduates' employment. Except for some cases the university system continues to act “by inertia” with the whole variety of often remote functions.

2. The motive to cooperate with employers

To overcome the inertia of Russian universities the state offers new forms of implementation of personnel quality training and cooperation with employers:

- Professional standards in educational practice. A professional standard is a characteristic of the qualifications required from an employee to carry out a certain type of activity, including the performance of a certain labor function. (This concept appeared in the Labor Code at the end of 2012) By the beginning of 2017, active work had been carried out to update and bring the federal state educational standards of higher education (FSES HE) into line with the requirements of current legislation and professional standards. More than 150 FSES HE have been approved, more than 400 drafts of FSES HE have been prepared to ensure the inclusion of professional standards in the educational process. 204 FSES projects have been examined by the relevant professional qualification councils.

- A new mechanism for targeted admission and training. The main objective of the targeted admission to higher institutions was to provide the regions with necessary specialists. However, due to the fact that targeted admission is carried out within the framework of the established quota on the basis of a targeted admission agreement, there appeared a “loophole” due to which regional authorities, municipal organizations, enterprises with state property share could direct universities to educate at the state expense those applicants who were considered to be “necessary”, and not those who would be more motivated to enter a specific area of training. Since 2017 the mechanism of targeted admission, training and the possibility of concluding a tripartite agreement on targeted admission and training between the university, the customer and the applicant has been accomplished. The responsibility is to be fixed between all three parties. An essential novelty for a graduate is a mandatory three-year working off at the enterprise. Otherwise the graduate has to pay a fine to enterprise.

- Basic departments - opportunities and barriers. The basic department is an educational platform located on the territory of the enterprise - a partner of the university. This platform makes it possible to
combine external resources (labor and material) and resources of the university in order to improve the quality of educational process. The main advantage of the basic department is the approach of the educational process to the needs of a particular organization. The first basic departments appeared in Russia in the early 2000s, they were created on the basis of scientific organizations engaged in the educational process. In 2013, it became possible to arrange them in real business enterprises for the implementation of practice-oriented training.

However, today the opening of basic departments in third-party organizations face many administrative barriers. In 2019, the Ministry of Science and Higher Education plans to remove most of these restrictions and introduce a special approach to the licensing of educational activity of those educational organizations which create basic units (their locations will not be indicated in the license): the possibility of licensing such structural units in part of the university will be authorized. It will remove the excess requirements for the basic units in terms of the need to implement the educational program at these platforms in full. It will also be allowed to involve in managing some basic departments the employees of the organizations on the basis of which the platforms are created.

- Network forms of implementation of educational programs. The use of the network form of the implementation of educational programs was established by the Federal Law of December 29, 2012 No. 273-FZ “On Education in the Russian Federation”. The network form is a form of training with the usage of the resources of several organizations engaged in educational activities, including foreign ones, and also, if necessary, using the resources of other organizations.

The network form is used to improve the quality of education, to expand students' access to modern educational technologies and teaching aids, to provide students with the opportunity to choose various training profiles and specializations, thorough studying at training courses, subjects, disciplines, modules, formation of relevant competencies, improvement of professional competencies through learning and mastering the experience of leading educational organizations, more efficient use of existing education resources, increasing the competitiveness of graduates of educational organizations in the Russian and international educational services and labor markets.

Within the framework of other organizations resources usage there are the following models of network form management: the model of inclusion of modules of educational programs of other institutions carrying out educational activity; an individual choice model; "university-enterprise" model; model ‘‘base organization - academic institution - enterprise’’.

- Reforms in higher education.

Active reform of higher education in Russia began in the early 1990s from the “universatisation” of higher education, when the number of universities increased from 46 to 312 [8]. In the early 2000s the government implemented a number of programs aimed at strengthening research activity at universities, besides the creation of research and educational centers to meet the innovative needs of the economy was initiated, but the centers failed to perform this function in the absence of any innovative market. The educational reforms of the XXI century, aimed at shifting the Russian economy to an innovative path of development, resulted in the elite universities grouping and in the optimization of higher education in the provinces as a result of some directives. Thus, at present, higher education in Russia is represented by various groups of universities. Such federal universities as Moscow State University and St. Petersburg State University are traditionally in top. 10 federal universities have been established and are functioning in Russia. Their purpose is to implement the state policy for shifting the Russian economy to an innovative path of development. At the same time the process of merger, integration and liquidation of a number of higher educational institutions began.

As a result, federal scientific and educational growth points located in the Russian Arctic are North-Eastern Federal University named after M.K. Ammosov (NEFU) and Northern (Arctic) Federal University after M.V. Lomonosov (N(Ar)FU). According to rating Arctic schools occupy middle or lower positions. Thus, according to the “University of Higher Education Institutions” Expert ”- 2018”, NEFU takes the 34th position, and NArFU – 83th (in 2016 it was not even in the TOP-100).

The mission of implementing the priority directions of the development of science, engineering and technology, scientific and personnel supply of the needs of economic and social sectors was assigned
to the group of “national research universities”. 29 higher educational institutions of Moscow, St. Petersburg and other cities of Russia received this status. Geographically, none of the national research universities is located in the Arctic zone of the Russian Federation.

A new vector in the process of modernization of Russian higher education was the launch of Project 5-100. In accordance with the regulations of the Russian Federation President Decree No. 599 “On Measures for Implementing State Policy in the Field of Education and Science”, on May 5, 2013 the work on Project 5-100 intended for 7 years began. The winners of the selection for a state support were 21 Russian universities. The project aimed to maximize the competitive position of a group of leading Russian universities in the global market of educational services and research programs. The project to improve the competitiveness of leading Russian universities among the world's leading research and education centers is designed to help with building up a research potential and strengthen their competitive position in the global market of educational services. Geographically, none of these universities is located in the Arctic zone of the Russian Federation. It should be noted that most of the above universities conduct training in the areas which are in great demand in the Arctic. They conduct their research in the Arctic, but graduates do not seek to fill personnel wants in northern enterprises.

A new wave of reforms in higher education (2016) resulted in creating so called flagship universities. In 2016 and 2017 the Ministry of Education and Science of the Russian Federation made a competitive selection of projects for the development of educational institutions of higher education aimed at creating flagship universities for the purpose of social and economic development of the subjects of the Russian Federation and meeting the needs of the regions for highly qualified personnel and, accordingly, forming a group of competitive regional universities. At the meeting of the Council for the implementation of flagship universities development programs in May 2016, 11 development programs for the period up to 2020 were approved. In April 17, 2017 in the Ministry of Education and Science of the Russian Federation, the results of the second competitive selection program for the development of flagship universities were summed up. According to the results of the competitive selection, two groups of universities were selected: 8 winning universities were to obtain federal funding for implementing the development program, and 14 winning universities were to be financially supported for their development programs by the region, together with methodological assistance and consulting from the Ministry. Of all 33 flagship universities in the territory of the Russian Arctic, only one is operating - Murmansk Arctic State University (MASU).

The activity of such universities is aimed at the socio-economic development of the Russian Federation subjects, including through the creation of university research and innovation centers, centers of attraction for talents and change leaders, as well as technological and social development of towns and regions [9]. As a result, flagship universities should become regional coordinators of the interaction of processes “education - production - science - regional community”.

When carrying out planning and forecasting the production needs of the region in personnel, the flagship universities will be able to respond to serious structural and quantitative changes in terms of staffing promptly. Therefore, in addition to interaction with enterprises, feedback with the authorities and educational system regarding possible transformation of the state request should be provided.

Aiming to improve the quality of recruits flagship universities establish and support schools specialized in some areas, participate in educational guidance at various levels, enforce early career development programs. Thus flagship universities will be able not only to shape a recruit contingent motivated to enter a higher institution, but also to orient young people in choosing a profession and proper areas of study.

Providing professional self-determination of a student when mastering his or her educational program flagship universities through the design and implementation of an individual training path will be able to improve the degree of compliance of training results with the needs of employers. And the involvement of students in the system of practical and project-oriented training will improve the practicality of education, develop students' competence that will allow them to adapt to a particular enterprise, get closer to the real economy and strengthen the development of their soft skills.
By creating centers for the scientific research and development in priority research areas for the region, universities will ensure close cooperation in fundamental and applied research with other scientific and educational centers and will be able to have a significant impact on the regional development of production technologies.

Forming and developing the system of reproduction of highly qualified scientific, pedagogical and managerial personnel, universities will help with preserving motivated and promising young people in the region, forming personnel potential for the successful intensive development of the regional economy.

By developing and introducing new forms of vocational guidance and social motivation, flagship universities will create conditions for preserving intellectual and creative young people in the region. In close cooperation with authorities, enterprises and organizations (including public ones) and involving all the inhabitants of the region in the process of creating the most comfortable environment, large-scale projects for designing public spaces can be implemented [10].

3. Conclusions
In our opinion, the listed forms of training implementation carry the potential for bringing the university system and the employer community closer together. But at the same time, due to the fact that in the Russian Arctic the processes related to improving the efficiency of human capital are more vulnerable, in some cases, universities will have to operate in conditions of increased uncertainty and instability (see table 1).

| University objectives | Forms of training implementation | Possibility of universities and employers convergence | Arctic instability factors |
|-----------------------|---------------------------------|-----------------------------------------------------|---------------------------|
| Responsibility for graduate employment | Targeted admission and targeted training | A tripartite agreement, according to which, after graduation, students will be required to work for three years with the employer who sent them to the university. The employer can influence the preparation of the student, participating in the formation of the educational program and organizing practice. | The lack of a long-term forecast of staffing needs in the regions, also because of the fact that only separate subdivisions are located in the regions, and the head organization is located outside the northern region. The quality of graduate education may not suit the enterprise (low student's achievement, significant changes in technology at the enterprise) |
| Practical component of education | Creating basic departments. Network forms of implementation of educational programs | Obtaining professional skills, work experience in specialty and on the equipment of a potential during the training process. Doing a course paper, final qualifying and other types of papers on topics relevant to the enterprise. Involvement in project activities. | |

Table 1. Opportunities and threats of universities and employers convergence
Low level of self-determination of applicants  
Introduction of professional standards into practical training  
Development and strengthening of the career guidance system. The structure of the professional standard correlates with a specific job function and skill level and therefore is projected into the requirements of educational standards. A potential employee will be able to assess the compliance of the competences obtained as a result of education with the requirements of the labor market and the employer. The lack of motivation of young people to work in difficult geographical and climatic conditions. The lack of professional standards in important areas of economic activity in the Russian Arctic.

Structure of ACF (admission control figures) and social processes in the regions  
Projects in higher education. Flagship Universities  
The coordination of policies on the distribution of ACF depending on industry specifics. Precise strategy of education development in the region. Actualization of universities activity to staff the priority development areas of the region. The university becomes a regional center for the implementation of social programs and projects. It is included in investment projects. The lack of a unified methodology for developing forecasts of the staffing needs of the region. The lack of staffing strategies in most regions of the Russian Arctic. When determining the need for personnel, employers get a true picture only for a short-term period, the main method of data collection is a sociological survey, which does not involve all the employers in the region. The executive authorities of the RF subjects lack the information from the employers implementing investment projects for the development of the Russian Arctic. This information is necessary to identify the need for labor resources with a view to their advanced training.

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