

# CREATION OF COMPETENCIES AT UNIVERSITIES IN CONJUNCTION WITH THE LABOR MARKET AND QUALITY OF LIFE: RUSSIAN CASE

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## ABSTRACT

*Currently, the Russian labor market is facing a complex of problems with employment of graduates of educational institutions and obstacles to labor mobility of workers. The research gap is associated with unification of competencies acquired in the process of learning, with professional requirements and demands from employers. The aim of the study is to develop a system for standardizing competencies of employees aimed at developing the relationship between the Russian education system and the labor market. The authors investigate the need for integrated standardization of both educational activities and labor activities. The result of the study is the project of a system for standardizing the competencies of employees.*

**Keywords:** Labor Market, Post-Industrial Society, Competence, Standardization

## INTRODUCTION

In recent years, the problem of ensuring a relationship between the education system and requirements of the labor market has become increasingly urgent. This relationship shall be manifested in adaptation of the education system to the increasingly dynamic needs of the labor market. In this context, the role of cross-cutting skills, which are necessary for integration of an employee into the labor market, increases.

The dynamics of scientific and technological progress, the large-scale spread of digitalization in all spheres of the economy and public life have necessitated lifelong education for adults, which must adapt to the needs of the increasingly mobile labor market. Under the conditions of globalization and modernization, the modern society determines the need for introduction and improvement of lifelong education in order to increase the competitiveness of workers in the labor market.

Today, about a half of all adults receive additional education every year in various forms in order to meet the requirements dictated by changes in the professional field and development of technologies that can affect people's quality of life one way or another.

At the present stage of development of our country, the problems of reforming the Russian education system and updating both the systems of higher and additional education for adults are becoming relevant. The development of the relationship between the system of higher education, the system of additional education for adults and the labor market is a prerequisite for

ensuring employment of the population as well as providing the Russian economy with highly qualified personnel.

The problematics of ensuring the relationship between the education system and the labor market attracts the attention of researchers.

Lauder H. and Mayhew K. study the theoretical aspects of interaction of the higher education system and the labor market abroad (Lauder, 2020).

Szreder M. studies the current problems of ensuring the employment of graduates in the Polish labor market, paying attention to the regional characteristics of the labor market (Szreder, 2018).

Sanderson M. also directs the vector of attention to the issues of interaction between the education system and the labor market, as well as meeting the needs of the labor market (Sanderson, 2007).

Wronowska G. studies the problem of over-education in the modern labor market, also paying attention to the issues of return on education (Wronowska, 2017).

So, the problem of interaction between the education system and the labor market is of particular relevance today.

## METHODOLOGY

The concept of a “knowledge society”, first considered by the American sociologist D. Bell as representative of the post-industrial society, is a stage in the historical evolution of human civilization, gradually replacing the industrial society. The widespread use of information technologies due to their low cost results in, on the one hand, general facilitation of communication, and on the other hand, a set of new problems caused by an information overload.

The main feature of the post-industrial society is considered to be the service-based economy. Indeed, most workers in the post-industrial society are involved in creation, processing and dissemination of information in the service sector. A post-industrial society is an information society where functional professions (programmers, managers, economists, lawyers, teachers, doctors, bank employees, insurance agents, marketing specialists, psychologists, etc.) that are acquired through higher education prevail in relation to professions that are directly related to production.

The transition from the information society with the information economy to the knowledge society based on knowledge leads to serious consequences, both cultural and pedagogical: globalization of education, increased competition between universities, increased investment in education and research and competition for these investments. It is well known that any process of social change from the past to the present time has been based on progress in the field of knowledge. However, the novelty of the knowledge society is determined, on the one hand, by the speed of knowledge renewal, by the fact that the volume of knowledge doubles every five years, and, on the other hand, by the nature of knowledge, the driving force that determines social, economic and cultural changes that go far beyond the world of information technologies (Westfield, 2019).

The speed of introduction, dissemination and use of information and communication technologies (Barykin, 2021) is the most important aspect of the knowledge society. The speed, in fact, is backgrounded by many transformations in specific components of the industrial society that shall not be overlooked. Moreover, following the rapid development of information and communication technologies (Barykin, 2021), the corresponding development of other components of the knowledge society is required.

Mikkonen I. believes that the large-scale dissemination of information and communication technologies has contributed to the spread of the Western culture all over the world in the form of the values of the market economy. Accordingly, modern institutions differ

from all previous forms of the social order only in their dynamism, the extent to which they undermine traditional habits and customs, and their global impact (Mikkonen, 2019).

Information is a commercial product the value of which is determined by its potential for transformation into knowledge. Knowledge is a flexible combination of structured experience, values, contextual information and expert understanding that provides a basis for evaluating and incorporating new experiences and information (Barykin, 2021). It originates and is applied in the minds of those who possess the knowledge. In modern organizations, the concept of knowledge management is often embedded not only in documents or repositories, but also in organizational procedures, processes, practices and norms (Graczyk, 2019).

Knowledge is an essential component of the modern economy, an element of an organizational nature, on the basis of which our social reality is organized in accordance with our knowledge. At the same time, it forms the basis of social power, which comes after other sources that have marked the development of human society: violence (force) and wealth (money). Knowledge is disseminated through the education system.

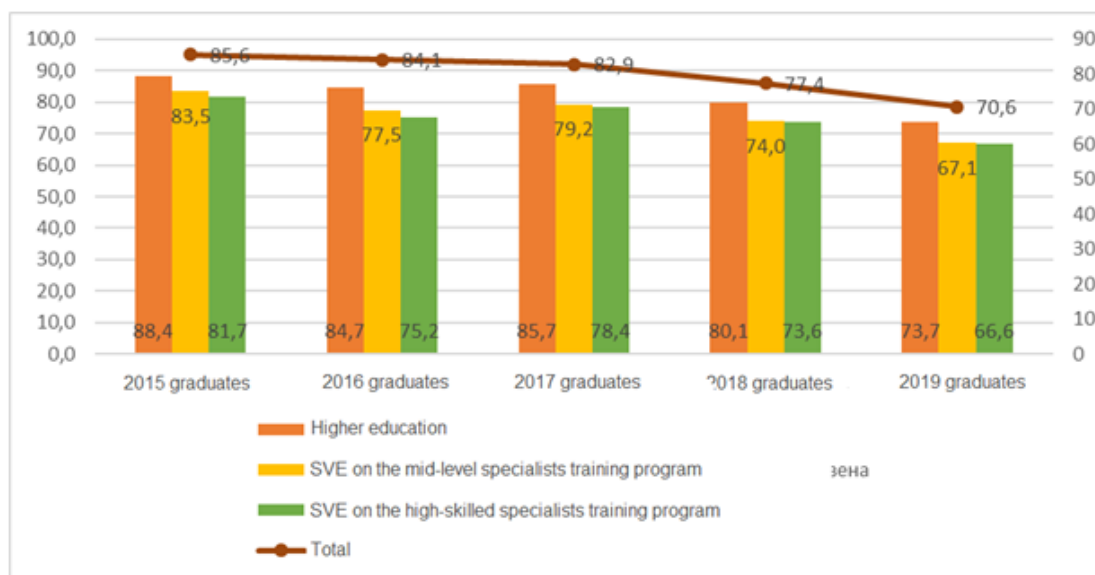
Education as a concept, starting with the etymological meaning of the term, derived from the Latin word “*educō*” which means “to educate”, can be viewed as a process that includes development of the individual’s intelligence, emotionality, will, the general ability to learn and to transform the world as a whole. The main goal of education, as a purely social activity, is to create and transfer a certain life experience to a human subject, who is thus involved in the mechanism of systematic and conscious influence in accordance with collective and individual goals and ideals.

Today, there is a gap between Russia and many foreign countries in terms of attracting and retaining talents: students en masse strive to receive education in European, American universities, and in recent years foreign students are massively attracted by China. To close this gap, further investment needs to be supported in the Russian education and training system in general, and in research and development and information and communication technologies in particular. The role of universities is to create the knowledge-based society in Russia and to develop key social and economic aspects of its functioning.

An important indicator of effectiveness of the education system and its compliance with requirements of the labor market is employment of graduates of educational institutions. The issue of efficiency of employment of graduates in the labor market has always aroused particular interest in the scientific and professional environment, and especially at the state level. The way the transition from school to work takes place determines the quality of the future workforce preparing to replace the existing one. In the current situation of a highly volatile and dynamic labor market, as well as increased competition, students strive to equally prioritize both the successful graduation from a university and the high-quality employment, maximizing their labor potential. To accomplish both tasks, continuous improvement of competencies and skills is required, as well as additional training and other ways to improve the components of the labor potential. Such trend and increased motivation on the part of young specialists is explained by tightening of the selection criteria and demands and requirements of employers.

The state is one of the most interested parties in employment of graduates, since the success of employment indicates the high-quality and correct distribution of the budget in the field of education and targeted investment spending. As a result, it is expected that positive effects will become apparent in the form of high-quality labor force, an increase in consumer spending and the export of Russian goods, and a sufficient amount of tax collections.

Figure 1 illustrates the level of employment of graduates in years 2015 - 2019. It shows the proportion of graduates who became employed the next year after graduation.



**FIGURE 1**  
**EMPLOYMENT RATE OF GRADUATES IN YEARS 2015 - 2019, %**

In 2016, 85.6% of all 2015 graduates were employed. Here, 88.4% of graduates who received higher education, 83.5% of graduates who received secondary vocational education under the mid-level specialists training programs, and 81.7% graduates who received secondary vocational education under the skilled workers training programs, were employed.

In 2017, 84.1 % of all 2016 graduates were employed. Here, 84.7 % of graduates who received higher education, 77.5 % of graduates who received secondary vocational education under the mid-level specialists training programs, and 75.2 % graduates who received secondary vocational education under the skilled workers training programs, were employed.

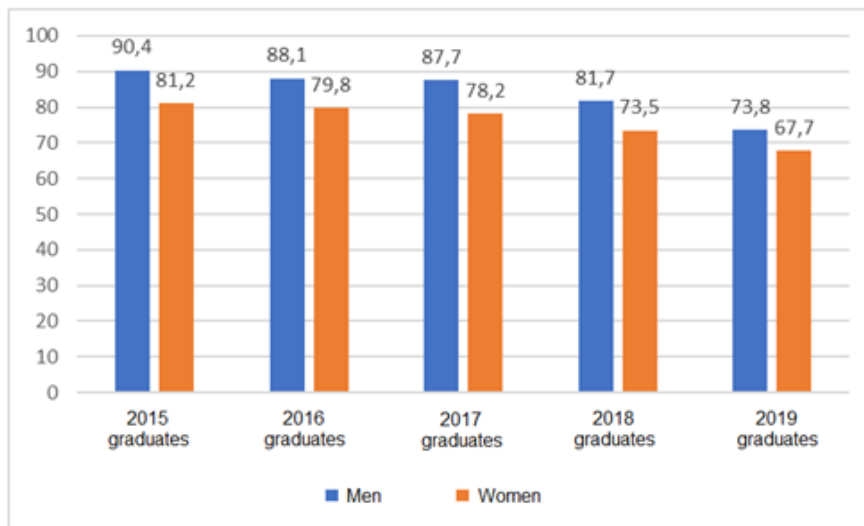
In 2018, 82.9 % of all 2017 graduates were employed. Here, 85.7 % of graduates who received higher education, 79.2 % of graduates who received secondary vocational education under the mid-level specialists training programs, and 78.4 % graduates who received secondary vocational education under the skilled workers training programs, were employed.

In 2019, 77.4 % of all 2018 graduates were employed. Here, 80.1 % of graduates who received higher education, 74.0 % of graduates who received secondary vocational education under the mid-level specialists training programs, and 73.6 % graduates who received secondary vocational education under the skilled workers training programs, were employed.

In 2020, 70.6 % of all 2019 graduates were employed. Here, 73.7 % of graduates who received higher education, 67.1 % of graduates who received secondary vocational education under the mid-level specialists training programs, and 66.6 % graduates who received secondary vocational education under the skilled workers training programs, were employed.

Thus, every year there is a decrease in the level of employment of graduates from the last year. And a particularly sharp decrease in the level of employment of graduates is observed in 2020, when the situation on the labor market was complicated as a result of the Covid-19 pandemic. It should be noted that the maximum level of employment is consistently demonstrated by graduates who have received higher education, and the minimum level of employment is demonstrated by graduates who have received secondary vocational education under the programs of skilled workers training.

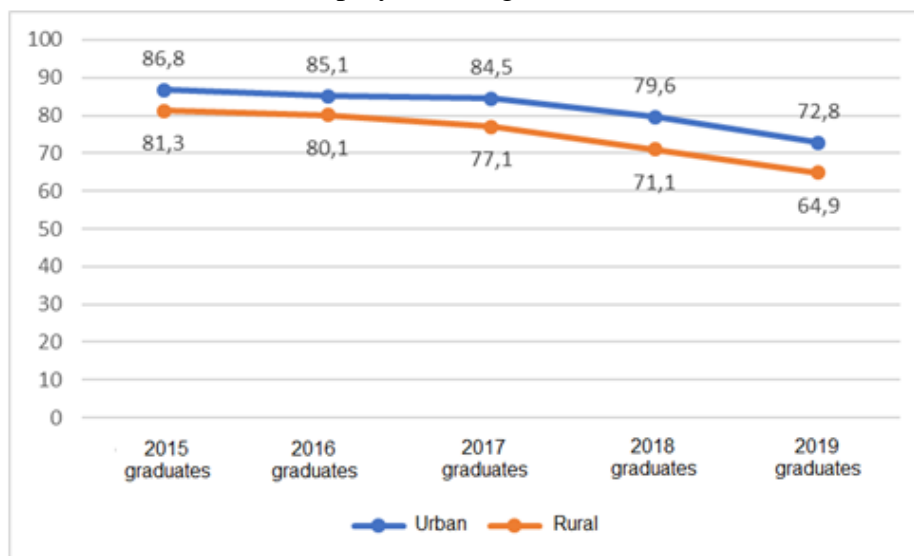
Figure 2 shows the level of employment of graduates by gender.



**FIGURE 2**  
**EMPLOYMENT RATE OF GRADUATES IN YEARS 2015 - 2019 BY GENDER, %**

The employment rate of male graduates is consistently higher than that of female graduates. So, for example, in 2016, 90.4% of male graduates from 2015 and 81.2% of female graduates from 2015 were employed. In 2017, 88.1% of male graduates from 2016 and 79.8% of female graduates from 2016 were employed. In 2018, 87.7% of male graduates from 2017 and 78.2% of female graduates from 2017 were employed. In 2019, 81.7% of male graduates from 2018 and 73.5% of female graduates from 2018 were employed. Finally, in 2020, 73.8% of male graduates from 2015 and 67.7% of female graduates from 2019 were employed.

Figure 3 shows the level of employment of graduates in urban and rural areas.



**FIGURE 3**  
**EMPLOYMENT RATE OF GRADUATES IN YEARS 2015 - 2019 BY TERRITORY, %**

In cities, there is a consistently higher level of employment of graduates than in rural areas. Thus, in 2016, 86.8% of 2015 graduates in cities and 81.3% of 2015 graduates in rural areas were employed. In 2017, 85.1% of 2016 graduates in cities and 80.1% of 2016 graduates in rural areas were employed. In 2018, 84.5% of 2017 graduates in cities and 77.1% of 2017 graduates in rural areas were employed. In 2019, 79.6% of 2018 graduates in cities and 71.1% of 2018 graduates in rural areas were employed. In 2020, 72.8% of 2019 graduates in cities and 64.9% of 2019 graduates in rural areas were employed. Thus, during the study period, the

differentiation between urban and rural areas in terms of the employment rate of graduates has been increasing.

We can conclude that there is a high level of youth unemployment and the presence of age discrimination; graduates experience specific difficulties in finding a job due to the lack of work experience. Also, age discrimination leads to the fact that graduates are often forced to find jobs in positions that are distinguished by low wages. The specified problems of employment of graduates indicate the need to transform the Russian education system.

## RESULTS

Today, we can talk about a paradigm shift that has taken place in the education system: the labor market requires workers with certain qualifications, and the education system is adapting to these requirements. Thus, the education system functions in accordance with the marketing principle of meeting the demand. Such paradigm change shows that the education system operates in the market, and also assumes that the market determines the content of education.

In modern conditions, the functioning of the education system is determined by a complex of interrelated factors.

The first group of factors affecting the functioning of the education system includes the labor market and its institutions.

The second group of factors includes the characteristics of the work activity, which are provided by:

- Professions existing on the labor market, determined by employers on the basis of tasks and job responsibilities;
- The skills and competencies necessary to carry out labor activities in the profession;
- A system of qualification levels characterizing the organizational skills, responsibility and autonomy of an individual in relation to the others, as well as the ability of an individual to accumulate knowledge and competencies established by the labor market;
- Occupational standards, which contain information on the requirements for skills and competencies of representatives of the profession. In developed countries, detailed occupational standards have been established for all professions, which are updated every few years to meet the requirements arising from technological developments.

The third group of factors affecting the functioning of the education system includes:

- Educational and training (qualification) programs which must meet the requirements of occupational standards. The new paradigm of functioning of the education system does not allow teachers to develop educational and qualification programs at their own discretion or within the framework of academic autonomy, if the programs are not based on the current or forecast demand of the labor market.

- Educational institutions where the educational process is carried out, consisting of such chain links as teaching or learning, self-assessment, assessment of study outcomes, confirmation of assessment, certification of qualifications obtained as a result of successful completion of this process. Currently, the educational process must finish with obtaining a certificate of education, which is necessary for the formal recognition of qualifications and learning outcomes.

The fourth group of factors determining the functioning of the education system includes tools for ensuring the quality of the education system. Such tools include:

- Accreditation of an educational institution, confirming that it is able to offer education at the promised level;
- Accreditation of the training/qualification program in accordance with occupational standards and requirements for the quality of training.

Thus, in modern conditions, the transparency of the education system, the compliance of educational services with the requirements for the quality of education, and the compliance of

the content of educational programs with the current requirements of the labor market are necessary. In this regard, we can talk about reasonability of creating a system of registers, which allows achieving the listed characteristics. The registers should be used to monitor the study and training courses at the higher or pre-university level. The role of registers will be relevant when discussing the recognition of a student's or a graduate's qualifications in the context of academic mobility or interstate labor mobility. This registry and monitoring system includes:

- A set of occupational standards;
- A national qualification register;
- A register of students;
- A register of graduates;
- A register of educational service providers;
- monitoring the quality of education through audit or accreditation of institutions providing educational services.

Such transparency of the education system ensures its credibility for applicants, students and employers. If it is accompanied by a register of employment opportunities for graduates of various educational institutions, this will lead to fair assessment of education.

One can say that creation of a system of occupational, qualification and educational standards integrated with each other will optimize the process of recognition of a student's or an employee's qualifications, thereby ensuring academic and labor mobility. The authors could consider regulated professions as an example of qualification standardization taking into account that such professions involve the standardization of curricula: the list of disciplines, the duration of teaching of the disciplines, the duration of practical training, the minimum qualification level of teachers and the teaching regime.

The economic experience of the past 30 years has proven that rejection of current market standards led to the fact that products and companies producing them are automatically excluded from the market. Thus, in any industry market certain standards exist, the observance of which is necessary for successful operation in the market. This requirement is also relevant for the vocational education and training system (Boulware, 2019).

Today the world education market has a multi-billion dollar turnover. Accordingly, in order to attract customers (students) in this market, it is necessary to form the following elements:

- A system of occupational standards consistent with the world practices;
- A system of qualifications in which the learning outcomes are defined in terms of knowledge, skills, responsibility and autonomy of a qualified person;
- An international education standard that sets requirements for the quality of education and the hierarchy of fields of study.

The quality of education is ensured through inclusion of national educational institutions in the registers of educational institutions and regular audits of the quality of education. Thus, the authors can talk about the need for integrated standardization of both educational activities and labor activities.

Taxonomy acts as a common element capable of uniting various standards, that is, a system with the use of which the decomposition of system elements is carried out.

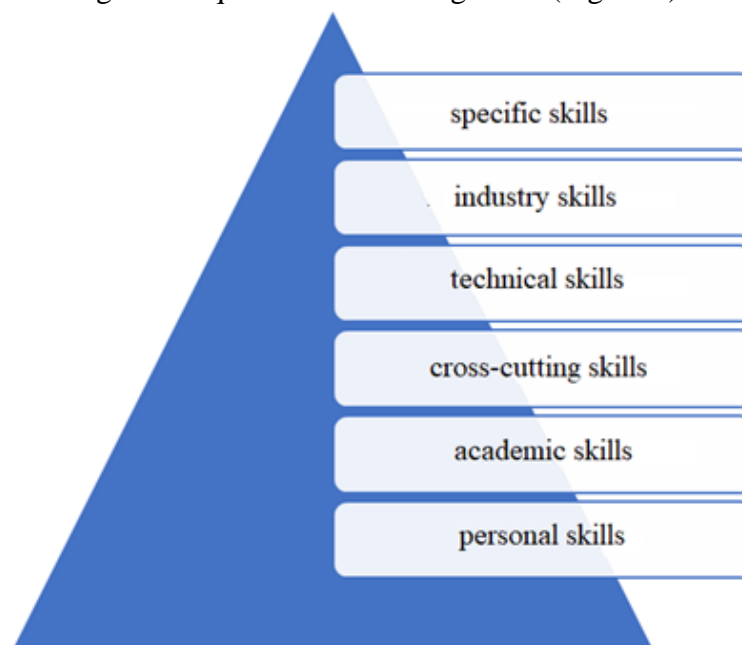
When analyzing foreign occupational standards, one can notice that they can be broken down into components called groups: main groups, then main subgroups, minor and single groups. Each group is characterized by its own tasks and responsibilities, more general for the «higher» groups and more specific for the «lower» groups. Finally, one can say that a profession is a set of tasks and responsibilities assigned to each of the groups of which it consists (Global Commission on the Future of Work, 2019).

It can be assumed that training in any specialization requires a sum of general disciplines, starting with the general areas up to the specialization level. The curriculum becomes a sum of disciplines representing each domain, and at the same time, for example,

connects specializations from the same detailed subject area. Disciplines taught within the framework of training can lead to development of key competencies or additional competencies in students.

Fundamental and basic disciplines support the future education in a specific profession, they ensure stability and sustainability of a professional career. It is preferable that fundamental and basic disciplines make up about 50% of a person's professional training. The tasks and responsibilities of a group of professions lead to the disciplines associated with that group. Thus, on a single basis consisting of the basic and fundamental disciplines, it is possible to form several different educational paths that lead to obtaining of professions from the selected group. On the same basis consisting of the basic and fundamental disciplines, the main areas of study can be changed, they can be alternated throughout a person's life. In addition, specialized disciplines in the field of professional specialization are added to the base; any set of such disciplines can result in obtaining one profession from the group. In the future, as a part of his/her career, an employee can, after receiving additional education, change the occupational group, if this will help him/her grow and develop on a personal and professional level.

The system for standardization of competencies proposed for design includes such an important element as skills. Skills are the core of the learning outcomes. The essence of the modern vocational education and training is represented by the learning outcomes, i.e. what a person can really do with the knowledge and skills acquired in the process of learning and vocational training. Within the framework of the proposed system for standardization of competencies, it is proposed to rank competencies into basic, fundamental, skills related to the professional area. It can be assumed that a representative of a certain profession possesses different types of skills and competencies, some of which are specific to this profession, while others are useful for other professions or for solving problems in a company or within a team (what we call personal skills). In the United States, in 2015, the National Academy of Engineering developed a skills model as the basis for developing international programs. It was concluded that a future engineer requires the following skills (Figure 4):



**FIGURE 4**  
**A DEVELOPED MODEL OF AN ENGINEER'S SKILLS (BASED ON THE DATA (ASALI, 2020))**

Personal and academic skills (levels 1 and 2) are the core skills. Cross-cutting skills assigned to level 3 represent skills required for a given level of job performance. Industry skills



assigned to level 5 are specific to each industry. Finally, specific skills (level 6) include managerial and workplace-specific skills.

In comparison with this system, the competence standardization system proposed for design is focused on the tasks and responsibilities of employees, on the areas of training and the hierarchy of skills and competencies of employees in accordance with the taxonomic model.

## DISCUSSION

In the process of learning, a person must acquire key or, as they have been called recently, academic competencies. Part of these competencies are cross-cutting competencies that are in high demand by the labor market in the new context of technology development and dynamics of the work and the environment associated with it. Thus, we can say that each person has his own life path, where he/she chooses when to move from one skill level to another, or chooses different periods of time for qualification, retraining, specialization, informal learning.

At the same time, it is necessary to form a relationship between professions, skills and competencies, qualifications and skill levels within the framework of the competence standardization system. Such a connection between the labor market, represented by such elements as professions, labor duties, labor tasks, qualifications of workers, and the education market, represented by such elements as skill levels, learning outcomes, curricula, will allow to quickly meet the labor market needs for specialists with the necessary qualifications and accelerate employment of graduates.

From the authors' points of view, in the system proposed for design, the main group of competencies indicates the level of qualifications of an employee, while the rest of the groups of competencies fall under taxonomic systems. Thus, a method is created for developing training/qualification programs that meet the current demands of the labor market, are expressed in work tasks and responsibilities and are completed with modern skills and specific learning outcomes that are useful for an employee.

## CONCLUSION

Today, there is a significant paradigm shift occurred in the world and in most national education systems. The essence of this paradigm shift is that the labor market requires workers with certain qualifications, and the education system must adapt to these requirements. But the education system often lags behind the market requirements, does not respond to them quickly enough, which leads to imbalances in supply and demand in the labor market. In particular, the Russian labor market is experiencing problems with employment of graduates, and the level of youth unemployment is growing.

The system of competence standardization proposed for design assumes the differentiation of an employee's competencies into several groups. The main group of competencies indicates the level of qualifications of an employee, while the rest of the groups of competencies fall under taxonomic systems. Thus, a method is created for developing training/qualification programs that meet the current demands of the labor market, are expressed in work tasks and responsibilities and are completed with modern skills and specific learning outcomes that are useful for an employee.

The labor market can be related to the education market if the competency standardization system fulfills its original objectives and receives further support at the European and local levels. The curriculum developed on the basis of the hierarchy of workers' skills and competencies, starting with general skills and then moving on to specific ones, depending on a country or a region, an industry, an activity, a qualification level, will allow the education system to quickly adapt to the rapidly changing labor market requirements.

Thus, a system of employees' competencies is being created, built in accordance with the model of international standards. In this system, the skills and competencies of employees are ranked according to skill levels and groups.

It is possible to scale the competence standardization system from the Russian Federation level to the EAEU level. In such case, the system shall consist of two parts:

- First, a common part at the EAEU level for development of union programs for the main (basic) fundamental levels related to professional areas;
- Second, a specific part, implemented through national educational programs, for development of specific occupational areas.

Thus, the competency standardization system becomes a tool for establishing the minimum sets of skills and competencies necessary for recognition of qualifications (about 70-75% of those competencies that an applicant has in his/her portfolio when applying for a job), which are supplemented at the local level with another set determined by the specifics of qualifications in the respective region and educational organization (about 25-30%). Thus, we can talk about internationalization, mobility, innovation and support for youth employment opportunities in the common labor market of the EAEU.

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