

Development of a Strategic Model for the Formation of Professional Competencies of University Students

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ABSTRACT

The relevance of the research into the development of a strategic model for the formation of professional competencies of university students is due to the ever-increasing demands of the society and employers for graduates of universities. The consequence of high rates of introduction of informatization and robotization in all spheres of professional activity, on the one hand, and the sluggishness and conservatism of the higher education system, on the other hand, has been an increase in the "gap" between the level and the quality of professional competencies among graduates of institutions and those requirements which employers demand from them. It is quite obvious that the activity to correct this situation should be strategically oriented and based on the application of modeling, which was done by the authors of the article. The leading scientific method applicable within the framework of this study was the method of comparative analysis of the best practices of different countries on the formation of professional competencies among university students. In addition, the methods of sociological research on the theoretical and practical issues of planning and modeling the process of forming professional competencies of university students were used. The result of the research was a generalization of scientific and theoretical approaches to the definition of promising areas of activity for the strategic management of the formation of professional competencies of university students. In addition, the interrelationship of the main components, products of the professional activity of the graduate of the university and its professional competences has been determined, and the main elements of the strategic model for forming the professional competencies of university students are described. The scientific and practical significance of the research results is that with the help of this model the university can develop a strategic model for the formation of professional competencies of university students, adapted taking into account the specifics of certain areas of student education.

Keywords: professional competences, strategic model, educational standard, demand for graduates of universities

INTRODUCTION

The study of the issues of forming the professional competencies of university students in recent years has acquired special relevance both in most developed and developing countries [1, 2, 3, 4] and in the Russian Federation [5, 6,

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7, 8, 9, 10], in ties with the exacerbation of the needs of labor markets in qualified specialists that meet the requirements of employers and the challenges of the process of scientific and technological progress. These issues are studied by representatives of science and education, specialists in specific fields of professional activity, representatives of employers 'and individual companies' associations, propose their own practical solutions to the problems of closing gaps between how and what professional competencies are formed in higher education institutions and the demands that employers make.

In general, recently there has been a tendency to unite (integrate) various approaches, both in the theoretical substantiation of the methodological aspects of the evaluation, and in its practical implementation. In this case, the measurement materials of different approaches are combined in one toolbox and the interpretation of the evaluation results. An integrated approach to evaluation is determined by the need to implement one of the main principles of evaluation - the principle of completeness and the all-encompassing nature of the assessment, which is expressed by the fact that the organization of all types and forms of evaluation for all objects and elements of evaluation should be subordinated to a common goal - to achieve high quality of education and to solve tasks assigned to the higher school of modern society [11].

Integrative approach is close to us also. Of particular importance, in our opinion, this approach acquires in conditions of continuous professional education. In this context, it is necessary to consider the general principles and directions for monitoring the professional development of university students, that is, in a certain sense, to agree that we control and evaluate how we do this, why and in what ways monitoring is carried out at different educational levels. Defining the content, organizational and sense-forming principles of monitoring, the system as the most general principle of formation and evaluation of an integral professional personality (or rather, its foundations at the stage of training in college and university) can be distinguished as leading ones; complexity; predictability; the principle of inclusion in activities (including, in quasi-professional); the principle of development and correction; the principle of variability; the principle of an optimal combination of control and self-control [12].

In the context of the foregoing, let us outline the following, important for the further course of the work of the premise: - the process of assimilation can be controlled based on personal conditioning, taking into account individual characteristics; - mastering characterizes the training and learning ability, and is expressed in the strength of the appropriation of social and historical experience in the form of competencies, readiness to solve professional problems and problems; - knowledge assimilation is the initial stage in the formation of competence, determining the speed and accuracy of the formation of modes of action of different levels of generalization: skills, abilities, professional algorithms and in the final sense of competencies [13].

RESEARCH METHODOLOGY

The leading method in the study of this problem was a comparative analysis of the best practices of different countries on the formation of professional competencies among university students. The use of theoretical and empirical research methods, methods of factor analysis, expert assessments allowed the authors of the article to identify the most significant factors that must be taken into account when developing a strategic model for the formation of professional competencies of university students.

The application of methods of sociological research on the theoretical and practical problems of planning and modeling the process of forming the professional competencies of university students made it possible to identify the main trends in these processes, identify the key trends, the influence of which can become decisive in the coming years.

LITERATURE REVIEW

Studies of the pedagogical potential of vocational education in the individual and personal development of students and ways of realizing this potential: studies on the problems of shaping the reflective thinking of the future specialist, problems of professional knowledge and its interpretation J.S. Bruner [14], H. Gardner [15], J. Piaget [16], and others.

Most often, competencies are understood as knowledge, skills and abilities in the professional sphere of activity, previous experience in a similar position. At the same time, the majority of authors adheres to a broader approach in understanding this concept. So V.A. Fedorov [17] argues that competence in its scope is wider than knowledge and includes it in its scope - it is an identifiable and measurable system of knowledge, skills and abilities necessary to satisfactorily meet standard requirements and resolve typical problem situations in professional activity in accordance with the provided authority.

Another researcher L.V. Lvov [13] proposes to use the concept of "the pace of the formation of professional competences (competence)" in order to assess the effectiveness of implementing measures to form professional competencies of university students, understanding the individual psycho-physiological characteristics of the

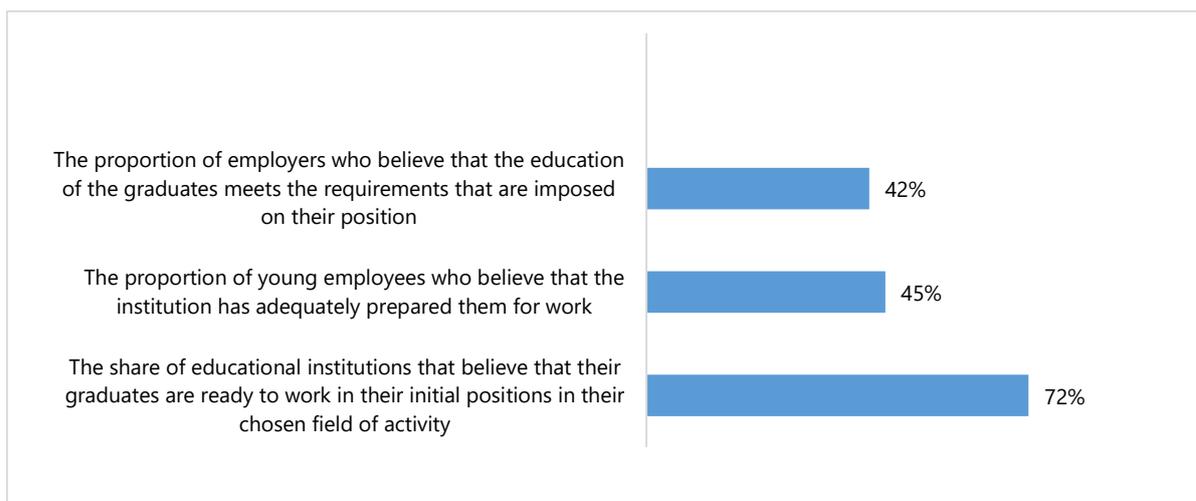


Figure 1. Correlation of answers of representatives of higher education institutions, their graduates and employers on the preparedness of graduates for professional activities
Compiled by the authors according to studies by McKinsey, 2014 [18]

learner; - the ability to assimilate a certain number of competences (knowledge, skills, abilities and generalized methods of educational and professional activities) per unit time; - ensuring the ability to satisfactorily meet standard requirements and resolve typical problem situations.

Let's consider further modern practices of forming professional competencies of university students, on the basis of which author's recommendations on the development of a strategic model for the formation of professional competencies of university students will be formulated.

RESULTS

To develop a set of measures to form a strategic model for the formation of professional competencies of university students, the authors of the article first of all carried out a study of the current state of the level of preparation of university students, assessed on the basis of their employment after completion of training. Based on the McKinsey survey, around the world approximately 75 million graduates of educational institutions experience employment problems. A survey of representatives of educational institutions, graduates and employers was held in Brazil, Germany, India, Mexico, Morocco, Saudi Arabia, Turkey, the United Kingdom and the United States. As a result of the study, average assessments of the degree of satisfaction of employers, university graduates and the educational institutions themselves with the quality of student training were determined (**Figure 1**).

As can be seen from the data in **Figure 1**, the assessment by higher education institutions of degree of readiness of the graduates in professional activity more than 1,5 exceed the marks which are put down by employers (75% against 42%). At the same time estimates of graduates were much closer to estimates of employers - only 45% of young employees consider that the higher education institution has adequately prepared them for work.

The authors' study of the best practices of solving this problem has made it possible to identify the most effective way - to upgrade the qualifications of the university teachers themselves, to develop practical skills that they can then transfer to students.

Another way is to increase the intensity of interaction and systematic cooperation between employers and teachers. In particular, successful practices of such interaction in the field of training management accounting specialists are in the CIMA (Chartered Institute of Management Accountants). The basis of the business model of this institute is the professional suitability and career prospects for students and members of CIMA Proceeding from those competences which employers expect from qualified specialists of management accounting the new training program of CIMA and the new system of assessment which is precisely determining the level of mastering these competences have been developed. This curriculum is based on a large-scale study conducted by CIMA among more than 200 organizations in 13 countries in Asia, Africa, Europe and the US [18]. In addition, the staff of this institute conducted a survey of 3000 respondents around the world. Employers identified the most important qualities of financial professionals: this knowledge of the basics of accounting and finance, enterprise, skills of working with people and leadership characteristics. The results of the survey became an important reference point in the development of the contents of the curriculum.

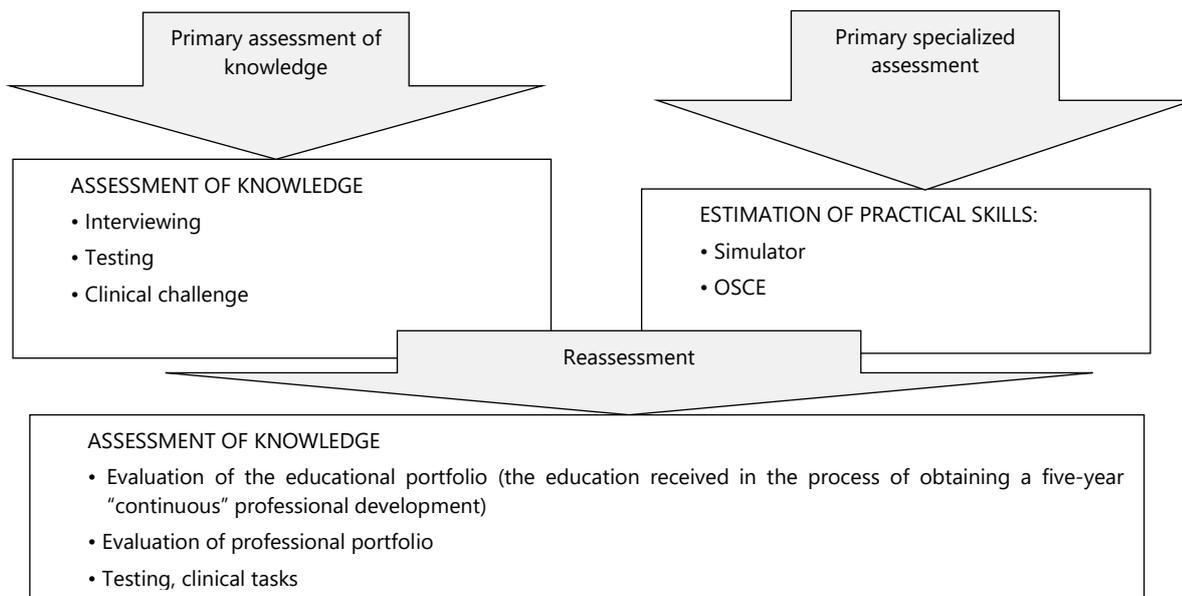


Figure 2. A model for assessing the knowledge and skills of applicants by the National Medical Chamber

As a positive example at the regional level, one can cite an exam for doctors who are candidates for the status of “Moscow doctor”. For the first time a voluntary exam for them was held at the end of September 2017. Evaluation of applicants by an independent commission included a clinical examination consisting of a theoretical and practical part. Particular attention was paid to assessing the practical skills of applicants, their ability to work under stressful conditions. At the end of the evaluation of applicants, they had to answer ticket questions regarding the symptoms of illnesses, as well as the procedures for receiving patients. Such methods of independent assessment of the level of professional preparedness of doctors can be used during the preparation of future medical staff in universities. In this case, the educational programs themselves will be developed taking into account the final result - the students’ readiness for passing an independent exam [19].

In fact, this example illustrates the practical implementation of the idea of integrating the process of training medical personnel and their independent evaluation by the professional community, proposed by the National Medical Chamber (**Figure 2**).

As can be seen from the data in **Figure 2**, when assessing applicants for the confirmation of professional qualifications, the National Medical Chamber uses the following forms and methods of evaluation:

- Portfolio assessment (interview) - allows the members of the examination committee to evaluate the portfolio of the evaluated competitor, containing information on education and professional experience / achievements, and, if necessary, to conduct an interview;
- testing - allows through an automated system (at random) to form an individual list of issues from the Unified Federal Database of Control and Measuring Materials;
- Clinical task - an automated system of control or hearing by the examination board of a solution of a specific task by the applicant with the possibility of discussing it;
- OSCE - an objective structured clinical examination (OSCE) allows trained examiners to assess the competitor’s knowledge on standardized scales based on the principles of objectivity and standardization;
- Simulator - checking practical skills on the simulator, evaluating the actions of the applicant in an automatic mode or an examination board.

In industry, there is also a positive experience of professionally-public and state regulation of the training system, including with a view to reducing territorial socio-economic imbalances [20].

In general, it can be concluded that when forming a strategic model for the formation of professional competencies for university students, it is important to take into account the already established practice of assessing professional qualifications in the business environment, on the one hand, and on the other, to comply with the requirements of federal educational standards.

In the opinion of A. V. Krasheninnikova [21] when forming a strategic model for the formation of professional competencies of university students, it is necessary to determine the components of professional activity, products

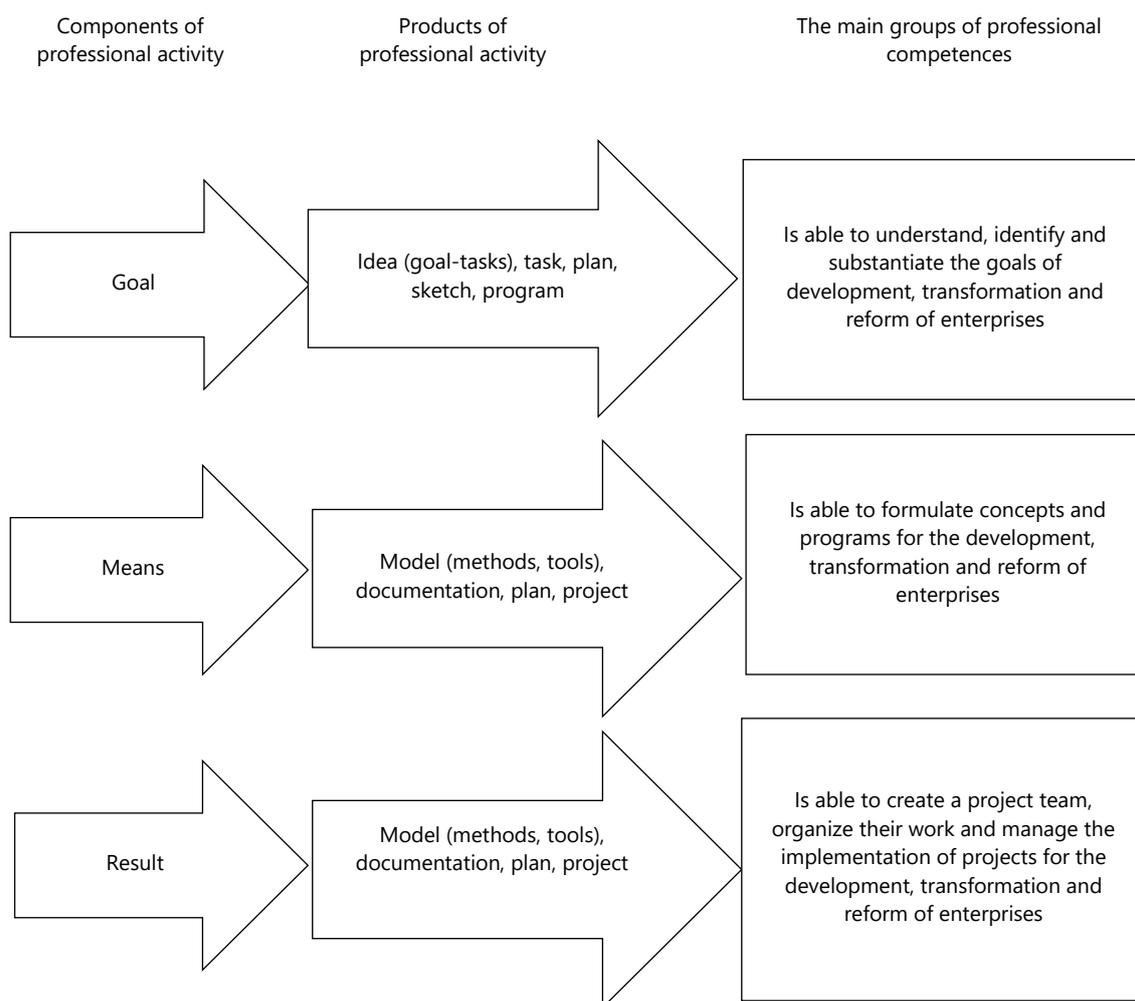


Figure 3. Interrelation of components and products of professional activity of the graduate of the university and its professional competences (compiled by the authors of the article)

of professional activity and the main groups of professional competencies. The authors of the article developing this approach suggest to represent the interrelation of components and products of the professional activity of the graduate of the university and its professional competencies in the form of the following scheme (**Figure 3**).

As a result of the definition of components, products of the professional activity of the graduate of the university and its professional competencies, the university can develop a scientifically grounded strategic model for the formation of professional competencies of university students. According to the authors of the article, such a model should be based on the availability of clear indicators of students' mastery of professional qualifications, starting from the first months of study at the university. In addition, an effective system of adaptation of first-year students to work within the framework of the university, applied educational technologies, etc. should be ensured. For this, it is recommended to use the mechanism of current and intermediate attestations of students (**Figure 4**).

Achieving the strategic goals of the model shown in **Figure 4** is to ensure the demand for graduates of higher educational institutions in the regional and national labor market for the selected type of professional activity (training area) is possible only if professional competencies are defined correctly in the development of the educational program [22]. In accordance with the new (adopted since 2017) federal educational standards, the right to choose professional competencies from an exemplary educational program or their independent formulation is now fixed in the Russian system of higher education for the universities themselves.

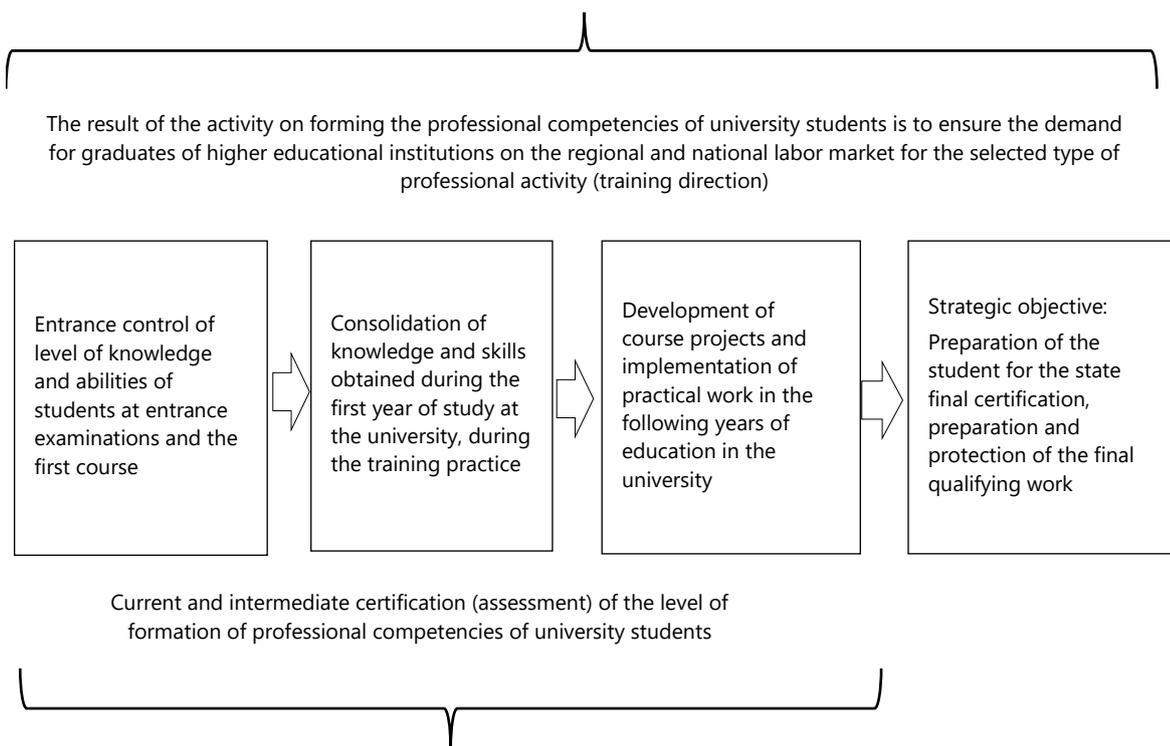


Figure 4. Strategic model for the formation of professional competencies of university students (compiled by the authors of the article)

DISCUSSIONS

Thus, according to the results of a study conducted by the authors of the article, a number of generalizations can be made: the features of the formation of professional competence of university students directly depend on the success of the socio-psychological and organizational adaptation of first-year students to work within the university and the speed of their inclusion in the educational process, identifying themselves as a future specialist in a specific field of professional activity, technological development of the educational process on the basis of using business simulations and business incubators, as well as competently and efficiently organized production and undergraduate students practice in the workplace.

In contrast to the existing research in the field of strategic management of the formation of professional competencies of university students, including H., Folmer & T. Jeppesen [23] and J. Polzer [24], the authors of this article have already raised similar questions [25, 26], and within the framework of this article - the rationale for this activity in the Russian Federation based on taking into account the established practice of assessing professional qualifications in the business environment and, on the other hand, fulfilling the requirements of Russian federal educational standards.

One of the main directions of pedagogical measurements is the reorientation of them to the interdisciplinarity and polyprofessionality inherent in the modern educational space. At the same time integration is considered not as a sum of parts and their mechanical connection, but as a qualitatively new result, a new systemic and holistic education.

CONCLUSION

At the end of this article, it should be noted that when developing a strategic model for the formation of professional competencies for university students, it is necessary to use not only scientific and methodological, but also statistical, sociological research, to apply methods of peer review. This will identify "gaps" in assessing the level of preparedness of university students for professional work, and, consequently, their relevance to the labor market. It will also be possible to determine the reasons for the appearance of such "gaps" in the estimates of educational organizations, employers and graduates, to determine the reasons for their appearance, as well as the likely measures to minimize or completely eliminate them.

A clear definition of the strategic objectives of the formation of professional competencies of university students, the development of a set of interrelated measures, the continuous monitoring of their implementation on the basis of assessing the indicators of the formation of these competencies in university students are the main components of the strategic model for the formation of professional competencies of university students developed by the authors of the article and tested in educational organizations, in which they work.

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