

MANAGEMENT BY THE INTERACTION OF VOCATIONAL EDUCATION WITH THE LABOR MARKET

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The relevance of the study is conditioned by the development of the regional market of educational services. Educational services of institutions of professional education are designed to meet the educational needs of the population, as well as the supply and demand of labor in the presence region. The purpose of the paper is to develop practical recommendations for the management by the interaction of vocational education with the labor market. The methodological basis of the study is the cluster approach, which allows considering the interaction of vocational education with the labor market as a system of coordinated actions of educational institutions, enterprises, regional authorities on training of competitive specialists. The study involves 400 teachers, 700 students, 100 employers who have identified specialties focused on the regional labor market; found areas of cooperation between vocational training institutions with enterprises of the industry; developed a questionnaire to assess by the employers common cultural and professional competencies of graduates of vocational education institutions. The main result of the study is to develop a regional labor market monitoring program. The significance of the results obtained is that the developed program stipulates the modernization of the content of educational services; organization of multi-level vocational education on the basis of fundamental knowledge and practice-oriented training; optimization of material and technical base of vocational education institutions; the relationship of traditional and innovative methods of vocational education; coupling of educational and professional standards; monitoring of employment of graduates of vocational education institutions.

Keywords: market of educational services, cooperation of vocational education with the labor market, monitoring of regional labor market

INTRODUCTION

The relevance of the study is conditioned by the development of the regional market of educational services. Educational services are understood as a set of purposefully

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created and offered opportunities to the population to acquire certain knowledge abilities and skills, to meet those or other educational needs (Oleshkov & Uvarov, 2006; Kalimullin, Khodyreva & Koinova-Zoellner, 2016). Educational services appear on the market in the form of goods, irrespective of sources of funding and forms of property of educational institution. Students consume educational services directly. Consumption by the student of educational services creates and develops human capital and brings personal income (Vasiliev *et al.*, 2006; Vlasova, Masalimova & Alamanov, 2016). The state uses these services through the inclusion of graduates of vocational education institutions in the socio-economic sphere. Consumption of educational services by the state provides a sustainable socio-economic development (Lunev, Pugacheva & Stukolova, 2014; Shaidullina *et al.*, 2015c; Gabdulchakov, Kusainov & Kalimullin, 2016). Companies, regardless of ownership, consume knowledge, skills and abilities of graduates of vocational education institutions. Consumption of educational services by the employer in the process of production of goods and services gives them direct revenue (Tatarinova, Shevtsova & Lunev, 2012; Shaidullina *et al.*, 2015a). Thus, the educational service of professional education institutions - is both a result of the training, educational, administrative activity, aimed at meeting the educational needs of the population, as well as the supply and demand of labor in the presence region. The market of educational services - is a specific kind of market, based on a variety of forms of property, arising and functioning alongside and in interaction with the labor market. The labor market determines the structure of demand for educational services, primarily due to the individualization of requirements for the quality of education and the labor force on the part of many equal employers. Innovative development of the real sector of the economy, improving the competitiveness of enterprises requires optimizing of staffing (Kirsanov, 2001; Shaidullina *et al.*, 2015b; Kalimullin & Dobrotvorskaya, 2016; Kalimullin & Islamova, 2016; Masalimova & Barinova, 2016). Qualified specialist, carrier of professional competencies, becomes a major source of innovation, providing increased productivity, reduction of energy spent and materials consumption, the use of high technology. Consequently, the market of educational services, formed by vocational training institutions aims to provide a competitiveness, general cultural and professional competency of the recipients of these services (Terentyeva *et al.*, 2016; Vlasova, Simonova & Soleymani, 2016; Masalimova & Benin, 2016). It requires the cooperation of vocational training with a regional labor market with a view to, first, forecasting staffing needs and planning of reproduction of the labor force. Second the maintenance of the population, vocational educational institutions and employers with timely and accurate information about supply and demand of labor. The purpose of the paper is to develop practical recommendations for the management by the interaction of vocational education with the labor market.

RESEARCH METHODOLOGY

The methodological basis of the study is the cluster approach, which allows us to consider the interaction of vocational education with the labor market as a system of coordinated actions of educational institutions, enterprises, regional authorities in training of competitive specialists (Lunev *et al.*, 2016). Such an understanding of the interaction of vocational education with the labor market allows allocating three directions. First – ways how to match demand for relevant experts and supply of jobs. The second is ways to address the changing requirements of employers to the quality of vocational education. Third - formats of employers' participation in the management of vocational education in order to achieve compliance with the supply and demand for labor. It is obvious that these areas of cooperation can be either institutionalized (i.e. functionally embodied in the regulations of activity of entities of the labor market and vocational training), and not institutionalized (i.e. episodically implemented in the framework of the informal interaction of entities). This necessitates the need to develop the monitoring program of the regional labor markets and educational services with the aim of harmonizing the interests of production and vocational training. The subject of our study is the monitoring of the regional labor market. During the research the following methods were used: theoretical (analysis, synthesis, generalization and systematization); sociological (observation, interviews, and questionnaires).

RESULTS

The main result of the study is a program for monitoring of the regional labor market. The purpose of monitoring is the study of the structure of demand and supply of labor (labor services) in the regional labor market. Achieving goals involves analysis of staffing needs of enterprises and their development trends. Information sources of such analysis include: 1) the applications of enterprises for training, 2) applications of the regional employment service, 3) employers' reviews on professional activity of graduates, 4) the records of meetings of the Coordinating Councils of sector educational clusters, 5) analytical material of the regional Chamber of Commerce, participation in its outreach sessions, scientific and technical exhibitions and conferences, 6) polls of leading specialists of enterprises on technical and technological support, professional standards, 7) surveys of teachers and students of vocational schools on organization of industrial practical training in enterprises.

The results of monitoring of the regional labor market leads to the conclusion that modern businesses require workers and specialists of different levels of training that are capable of self-development, self-learning, self-production activities, development of new technologies, new high-tech equipment, striving for professional growth. This leads to the following tasks' solving: 1) modernization of the content of educational services; 2) optimization of the material and technical base of vocational education institutions, ensuring the effectiveness of practice-oriented part of the

educational curricula; 3) The relationship of traditional and innovative methods of vocational education; 4) providing coupling of educational and professional standards; 5) monitoring of employment of graduates of vocational education institutions.

The solution of the task on the modernization of the content of educational services led to the definition of areas of training (specialties) of professional education focused on the regional labor market. The study involved 400 teachers and 700 students of Tula State University and 100 employers of Tula Region. During the survey of teachers, students, employers the direction of training (specialty) of vocational training were identified (see. Table 1).

TABLE 1: AREAS OF TRAINING OF PROFESSIONAL EDUCATION FOCUSED ON THE REGIONAL LABOR MARKET

Areas of training of higher professional education	Areas of training of secondary vocational education	Areas of professional education focused on training of personnel
Information Security	Information security of automated systems	The operator of electronic and computing machinery
Ballistics and hydroaerodynamics	Special machines and devices	Turner-miller; The operator of machine tools with program management; Setter of machine tools and manipulators with program management
engineering	Mechanical engineering Technology	Turner-miller; The operator of machine tools with program management; Setter of machine tools and manipulators with program management
	Welding production	Electric welder on automatic and semi-automatic machines
Operation of transport and technological machines and systems	Maintenance and repair of motor transport	Turner-miller; Mechanic on car repairs; Car driver
	Technical operation of hoisting-and-transport, building, road machines and equipment (by industry)	Turner- miller; The mechanic on repair of road-building machinery and tractors
Automation of technological processes and production	Automation of technological processes and manufactures (on branches)	The operator of electronic and computing machinery; Turner- miller; The operator of machine tools with program management; Setter of machine tools and manipulators with program management; The operator of automatic and semi-automatic lines of machines and installations; Electrician for automation means and devices of technological equipment
Software Engineering	Programming in computer systems	The operator of electronic and computing machinery
Information Systems and Technology	Computer systems and complexes	The operator of electronic and computing machinery

From Table 1, it can be concluded that the complexity of professional activities, causes multi-level vocational training of specialists and workers on the basis of fundamental knowledge and practice-oriented training. For businesses important is the end result of vocational training, i.e. what kinds of professional activity can perform graduate.

Solution of the task on optimization of the material and technical base of vocational education institutions, ensuring the effectiveness of practice-oriented part of the educational curricula, provides for making of special agreements on cooperation with enterprises. Conversations with teachers and employers allowed defining the obligations of enterprises in the framework of such agreements. This is participation in 1) improving the material and technical base of vocational education institutions, repair and maintenance of equipment installed in educational and industrial laboratories and workshops; 2) provision of educational process with tools, instrumentation, technical documentation, information about the achievements of domestic and foreign science and technology, best practices in organization of labor of specialists and working professionals the relevant industry.

Solution of the task in connection with traditional and innovative methods of vocational education provides, firstly, sending of enterprises' specialists in the institutions of vocational training to carry out theoretical and practical training; scientific advising in course and the design and final qualifying works; participation in the public evaluation committees. Secondly, the creation in enterprises of conditions required for students' industrial practice with the use of modern equipment and technologies. Third, the application of enterprises for qualified personnel's training. For example, in the application of the Tula Regional Union of Employers for 2009, which includes more than 500 industrial enterprises and organizations of the region, the following range of professional activity of future specialists is determined: participation in the management of automated control systems; work in electronic document management systems; automated preparation of design and technological documentation; automated development of cutting tools and tooling; commissioning and maintenance of machine tools with CNC and machining centers; automated processing of parts; KIP operations; protection of computerized information systems. Tula Regional Union of Employers has identified an annual requirement for 70-80 specialists of bachelor's level. Such graduates are planned to use in the following positions: technologist, metrology specialist, site master, adjuster of instrumentation, Electrician for automation means and devices of technological equipment, the operator of machine tools with program management, adjuster of machine tools and manipulators with program management. Analysis of employers' applications makes it possible to determine the direction of development of vocational education institutions to form their infrastructure, to design professional educational curricula at various levels.

The solution of the task on providing the coupling of educational and professional standards led to the identification of employers' requirements for the content of vocational education: the formation of students' abilities to make decisions and take responsibility for them; work in a team; adapt quickly to the conditions of frequent changes in the production technology. The efficiency of coupling of educational and professional standards increases with the following conditions: 1) the organization of industrial practice of students on the equipment, existing in modern industries; 2) establishment of a mechanism of independent assessment of the quality of vocational education; 3) generation of a target training of specialists and workers for specific companies.

Solution of the task on monitoring the employment of graduates provides employers' questionnaires about each employed student. The questionnaires are developed taking into account the specifics of a particular profession and are aimed at evaluation of formation of common cultural and professional competences. To evaluate the general cultural competences of graduates it is suggested to note the level of 1) general intellectual abilities (analytical skills, ability to generalize, predict their decisions, remembering, learning, acquisition of new knowledge, their position's argumentation); 2) personal qualities (good manners, sociability, discipline, tolerance, self-criticism, the response to the head notes, diligence, self-confidence, determination to success, ambition, self-development and self-improvement, professional growth, the priority of a healthy lifestyle); 3) social skills (creativity, invention, innovation, solution of non-standard professional tasks, teamwork, expression of responsibility for the quality of the work fulfilled).

Assessment of professional competences depends on the particular specialty. For example, for the specialty "Automation of technological processes and manufactures (on branches)" are evaluated: 1) the level of theoretical training in the field of knowledge of the mathematical apparatus; Informatics and Information Technology; Electrical and Electronic Engineering; metrology; 2) the level of practical training in the field of (a) automated development of design documentation, technical documentation, control programs for machine tools with program management; (b) service of universal equipment, including machine tools with programming control; (c) the manufacture of parts on the universal equipment; (d) implementation of control and measurement operations; (e) knowledge of professional terminology; (f) independent work and effective solutions to problems of professional activity; (g) the development of new types of computer-aided engineering equipment; (h) professional culture.

After conducting of the questionnaires the analysis of the questionnaires for each specialty is done separately. The results are summarized and discussed together with representatives of companies - the customers. The result of monitoring of graduates' employment is the development of specific measures to modernize the content of educational services; optimization of material and technical base of

vocational education institutions; the interconnection of traditional and innovative methods of vocational education; coupling of educational and professional standards.

DISCUSSIONS

Managing the interaction of vocational education with the labor market is the subject of many studies. The greatest attention is paid to the following issues: 1) assessing the quality of vocational training (Subetto, 2002; Selezneva, 2002); 2) development of integrated educational training curricula for specialists' training (Gorin, Nelyudov & Svistunov, 2010; Lunev & Pugacheva, 2014; Lunev, Pugacheva & Terentyeva, 2014; Lenskaya, 2015; Protas, 2013); 3) the content of vocational education (Lednev, 1989; Zhurakovsky, 1997; Melenitsek, 2007; Loschilova, 2014); 4) the design of the curriculum on specialty and cross-cutting curriculum of training courses on specialty (Morgunov *et al.*, 2001; Saurenko, 2009); 5) organization and activities of sector educational clusters (Lunev *et al.*, 2016); 6) state policy in the field of modernization of vocational education under the state order for training of specialists (Akhmetov *et al.*, 2016); 7) the positioning of vocational education as a tool for socio-economic development of the region (Lunev, Pugachova & Stukolova, 2014; Ivanov *et al.*, 2016; Pugacheva *et al.*, 2016); 8) strategies for the development of educational services in the regions (Terentyeva *et al.*, 2016); 9) mechanisms of anti-corruption policy in the universities in conditions of social partnership with companies (Zamaletdinov *et al.*, 2016); 10) managerial features of professional education in the region (Pugacheva *et al.*, 2016; Kamasheva *et al.*, 2016). However, the effectiveness of vocational training cooperation with the labor market increases, if a legally fixed mechanism of integration of regional markets with educational services and jobs is provided. It is also updated the purpose of the study.

CONCLUSION AND RECOMMENDATIONS

Practical recommendations for the management by the interaction of vocational education with the labor market include, firstly, the development of the regional labor market monitoring program. The results obtained in the course of implementation of the program, cause the modernization of the content of educational services; organization of multi-level vocational training on the basis of fundamental knowledge and practice-oriented training; optimization of material and technical base of vocational education institutions; the relationship of traditional and innovative methods of vocational education; coupling of educational and professional standards; monitoring of employment of vocational education institutions' graduates. Second, the efficiency of managing the interaction of vocational education with the labor market increases in conditions of: (a) the definition of specialties focused on the regional labor market, and determination the areas of cooperation of vocational training institutions with enterprises of the

industry; (b) evaluation by employers of common cultural and professional competencies of graduates of vocational education institutions.

The study results allow outlining the prospects for further research of the problems that are associated with the development of the regional market monitoring program of educational services; identifying national models of interaction between vocational education and industry interests. Paper Submissions may be helpful for leaders and teachers of vocational education institutions; Staff of training and retraining centers in the selection and structuring of the content for professional development of the teaching staff of vocational education institutions.

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