

Problems of Forming Requirements to Training of Specialists for Industrial and Economic Complex

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Abstract— The article is devoted to the introduction of a new federal state educational standard. The basic requirements to the quality assurance of education are described. The requirements for the applied mechanisms for assessing the quality of educational activities and for training specialists should be determined both by an internal evaluation of the quality of programs and by an external evaluation within the framework of state accreditation, professional public accreditation, international accreditation. The paper considers the issues of adaptation of professional higher education programs to the requirements of professional standards.

Keywords— federal state educational standard; accreditation; higher education; quality assessment; professional standard

I. INTRODUCTION TO THE PROBLEM

Since June 1st, 2016 the use of professional standards has become mandatory in Russia. The Ministry of Labor of the Russian Federation has approved 1111 professional standards, 1055 professional standards (Fig. 1) have been brought into force so far. About 130 standards are in development. Changes in legislation and the use of professional standards led to the necessity to revise federal state educational standards. Now in order to prepare future workforce we have to take into consideration the requirements to education quality control, specified by the professional standards [1, 3–7, 12, 14, 17]. Thus, professional standard ensures cooperation between the industrial and economic complex and the system of education.

II. ANALYSIS OF PROFESSIONAL STANDARDS IN THE AREAS OF PROFESSIONAL ACTIVITIES

Professional standard consists of four sections. It contains general data, job functions description, characteristics of the generalized job functions and information on the organizations that developed professional standards. Different number of standards have been developed and implemented in each area of professional activity. The number of approved and implemented professional standards by areas of activities is shown in Table 1.

The paper is based on research carried out with the financial support of the grant of the Russian Science Foundation (Project No 14-38-00009). Peter the Great St. Petersburg Polytechnic University.

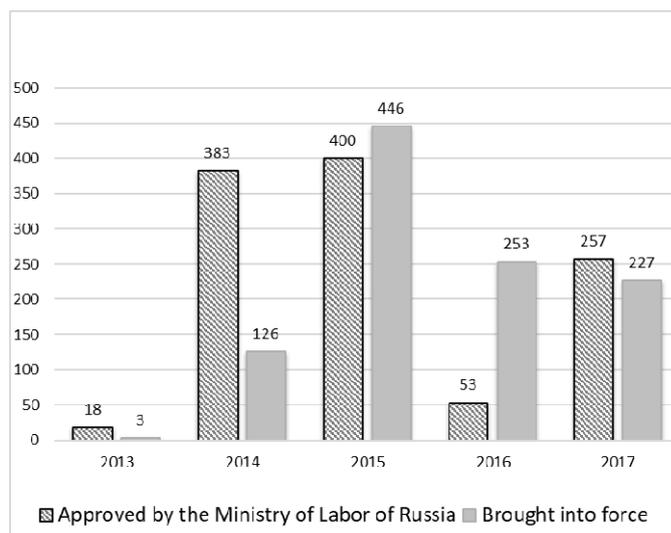


Fig. 1. The number of approved and implemented professional standards in 2013–2017

TABLE I. THE NUMBER OF THE APPROVED AND IMPLEMENTED PROFESSIONAL STANDARDS BY AREAS OF PROFESSIONAL ACTIVITIES

Area of professional activity	Number of professional standards
Aircraft engineering	15
Automotive engineering	21
Management, administrative and office activities	4
Architecture, design engineering, geodesics, topography and design	7
Nuclear industry	77
Wood-working and cellulose and paper industry, furniture production	59
Mining and conversion of coal, ore and other	4

Area of professional activity	Number of professional standards
mineral resources	
Oil and gas mining, refining and transportation	56
Public health service	20
Culture and Art	5
Consumer goods and textile industry	3
Forestry management and hunting	6
Metallurgical production	95
Security control	5
Education and science	5
Food industry, including beverages and tobacco production	1
Machinery and equipment manufacturing	8
Electrical, electronic and optical equipment production	12
Aerospace industry	51
Fish-breeding and fishing	21
Information and communication technologies	41
Agriculture	22
Services (trade, maintenance, repair, providing personal services, hospitality services, food services etc.)	22
End-to-end types of professional activities	186
Social services	12
Mass media, publishing and printing industry	13
Building and construction and housing and utility sector	134
Shipbuilding	27
Transport	52
Physical education and sport	11
Finance and Economics	34
Chemical and Chemical Technology production	17
Electric power industry	36
Law	1

The whole base of professional standards has been analyzed for the purpose of determining the demand for specialists in the area 27.0X.02 'Quality management'. In 18 out of 34 areas specialists in the area 27.0X.02 are required (Fig. 2).

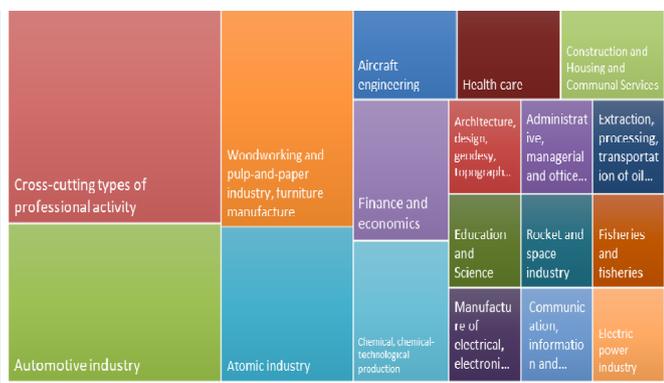


Fig. 2. The results of the analysis by the areas of professional activities for the 'Quality management' field of education

III. FEDERAL STATE EDUCATIONAL STANDARDS ANALYSIS

The universities face the challenge of training qualified personnel for the industrial and economic complex, which will correspond to the competences prescribed in the professional standard [2, 6–11]. The universities conduct educational activities on the basis of Federal standards. Modernization of the structure of the Federal State Educational Standard 3 ++ is reflected in section 5 Requirements for the results of the program development. It contains universal competencies and general professional competences. Professional competencies now define an approximate basic educational program. Also, the Federal state educational standard 3 ++ determines the level of education. The Federal state educational standard 3 ++ contains a new section 8 – requirements to ensure the quality of education (Fig. 3).

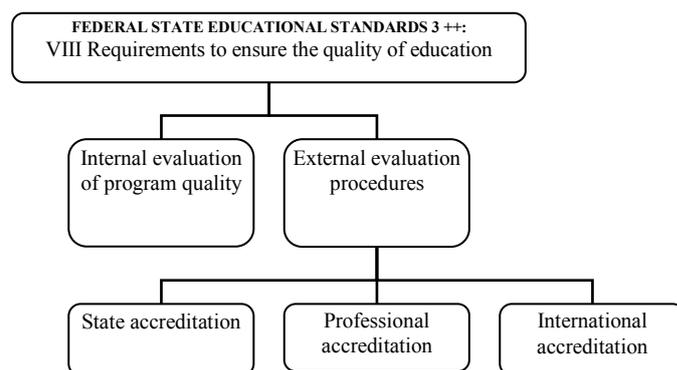


Fig. 3. Requirements to ensure the quality of education

IV. PROBLEMS OF FORMATION OF REQUIREMENTS IN THE TRAINING OF SPECIALISTS

The main problem of the development, approval and introduction of new Federal state educational standards 3 ++ is the issues of adapting professional higher education programs to the requirements of professional standards. Another problem is the timing of the agreement. Since today the Federal state educational standards 3 ++ have not yet been approved, but professional standards are already in place. The next important point in writing an approximate basic educational program is the competent formation of requirements. So, for example, when drawing up an approximate basic educational program in the direction of "Quality Management", it is necessary to take into account the specifics of training in 18 areas of activity in the program. Moreover, professional standards are constantly revised and new ones are approved. Therefore, today's approval, approval and implementation procedures require substantial refinement [13, 15]. At the same time, it is necessary to take into account the fact that universities are faced with the task of passing state accreditation procedures.

V. CONCLUSION

Lately, there have been significant changes in labor legislation, which touched on the issues of training. These changes require higher education institutions to switch to the new federal state educational standards for higher education, to update the basic and additional professional educational programs of professionals taking into account the requirements of the relevant professional standards.

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