Practice-oriented approach implementation in vocational education

IOP Conf. Series: Materials Science and Engineering **483** (2019) 012003 doi:10.1088/1757-899X/483/1/012003

Practice-oriented approach implementation in vocational education

Zh V Smirnova[1], O I Vaganova[1], D A Loshkareva[2], Konyaeva E A[3], M N Gladkova[4]

[1]Minin Nizhny Novgorod State Pedagogical University, ul. Ulyanova,1, Nizhny Novgorod, 603004, Russia
[2] Nizhny Novgorod State University of Architecture and Civil Engineering, Ilyinskaya str., 65, Nizhny Novgorod, 653950, Russia
[3]South Ural State Humanitarian and Pedagogical University, Lenina 69, Chelyabinsk, Chelyabinsk Oblast, 454080 Russian Federation
[4] Tyumen Higher Military Engineering Command School named Marshal Engineering Troops A.I. Proshlyakova, Ministry of Defense of the Russian Federation, L. Tolstoy str., 1, 625001, Tyumen, Russia

Abstract. The article is devoted to consideration of a practice-oriented approach implementation in a higher educational institution. The essence of this approach and possibility of its implementation in bachelors' training is revealed. If the selected methods are introduced into practice students' training will be more successful. Method of specific situations (case-study); educational games; project method that fully meets the requirements of the competence approach are under consideration. As a result of the analysis of bachelors' final qualifying works inNizhny Novgorod State Pedagogical University named after Kozma Minin (major «Vocational training in industry)» for 2016-2017, the authors showed their compliance with the requirements of the Federal State Educational Standard. It is very significant for students who are going to work in various fields of industries. This justifies the need to use practice-oriented approach in training, which helps to teach graduates to be ready for professional activity.

1 Introduction

With the changing needs of the modern labor market, the state and society as a whole, there has been a change in the educational paradigm, leading to global transformations in the field of higher education. Competence-based approach, designed to train a mobile, creative, competent graduate who is able to solve emerging problems in a non-standard way has become an integral part of the learning process. Professionalism of future bachelors, in accordance with the requirements of the new Federal State Educational Standard, should be formed in conditions as close as possible to the future field of activity, that is, there should be enough practice in the students' life to improve their skills and more quickly adapt to the real work process in the future. Therefore, there is a need to use a practice-oriented approach. The use of practice-oriented methods in the classroom is becoming increasingly relevant. The main task of the teacher is not to transfer a certain amount of knowledge and skills, but to prepare the student in such a way that he can put into practice the obtained theoretical knowledge and be ready for certain types of activities.

2 Methodology

The framework of competence-based approach forms the need for student autonomy. In teaching pedagogical disciplines, it is especially important that future university graduate feels confident in his actions and is ready for the successful implementation of certain types of activities. And in order for the student to maximize their capabilities, it is necessary to build his practical skills using practice-oriented approach. The practice-oriented approach is an approach aimed at bringing the activities of the educational organization closer to the needs of real life, allowing you to create conditions for the

purposeful training of students to be the competitive. According to P. Obraztsov and T. Dmitriyenko, the introduction of a practice-oriented approach should contribute to the formation of students' personal qualities that are important for their future professional activity, as well as knowledge and skills that will ensure that they perform their professional duties successfully. These authors consider it necessary to update the content of education by enhancing its practical orientation. However it is impossible to achievewithout studying theoretical basics [4]. The development of this issue can be found in works of V.S. Bezrukova, A.A. Kirsanov, N.E. Kuznetsova, O.S. Zaitseva, E.N. Ilina, E.I. Meshcheryakova.

We have presented an analysis of the graduation qualification thesis of bachelors in 2016-2017. We divided them into 2 groups.Sample size - more than 100 works. The study allowed determining the compliance of these final works with the requirements of the Federal State Educational Standard on their practical orientation. Among the evaluation criteria were also highlighted the professional competencies and the development of specific activities and proposals for a certain problem.

Among practice-oriented methods successfully implemented in higher educational institutions, we have identified method of specific situations (case-study); educational games and project method.

3 Results and discussions

R.A. Azhimullaeva speaks about practical focus of education as one of the fundamental didactic principles. According to her, the teacher pays great attention to the connection between theory and practice and brings the learning environment to future professional conditions [1].

E.I. Meshcheryakova believes that the use of a practice-oriented approach is a sequence of targeted pedagogical procedures, operations and techniques that together constitute an integrated didactic system, realizing which the students have professionally significant qualities and competencies necessary for successful implementation of professional activities [2].

It is important to note some signs of practice-oriented learning:

- use of problem-based learning methods, project method;
- organization of training in a group, in a team [3];
- integration of academic courses in such a way as to create a holistic view of the future professional field of activity among students [4].

From this it follows that the essence and the main idea of practice-oriented learning is to create such conditions for future bachelors in which they can get work experience, acquire necessary competences and become prepared for real professional activity, having skills of productive thinking, interaction with each other, critical thinking, solving complex problems based on the analysis of production situations.

As the leading pedagogical principles we selected the following:

- focus on practical training;
- taking into account the needs of the labor market;
- consideration of the requirements of the competence approach [5];
- focus on the competitiveness of the future bachelor [6].

As noted by G.A. Tyryginoy, the development of the educational program in this case should take place not only in the audience, but also in real professional conditions.

The possibilities of practice-oriented approach in the teaching of disciplines in higher educational institutions are revealed with the help of special methods. We have identified the following:

- the method of specific situations (case-study);
- didactic games;
- project method [7].

Building a practice-oriented learning process based on data from the methods will allow the future bachelors to come as close as possible to their profession, and will enable them to build a holistic learning process [8].

Content for students using the case method is presented in the form of small problems, and students acquire knowledge and necessary skills in the process of active work to develop solutions. The distinctive features of the case method are:

- the teacher's creation of a problem situation based on facts from real life [9];
- the ability to find an alternative solution [10];
- the possibility of group evaluation of decisions;
- organization of an individual approach to each student, taking into account his needs [11];
- providing the learner with freedom in learning;
- the formation of the students' skills in working with information [12].

The use of cases allows students to develop skills in analysis and critical thinking, to combine theory and practice, to articulate their point of view clearly [13]. In addition, the case method fully meets the requirements of the competence-based approach of student self-development of knowledge.

Students gain the skill of self-presentation in the process of presenting their answer to the task, learn to formulate questions and answer arguments [14].

Business game (development of real future professional activity through game imitation, recreation of basic types of behavior). During the game, students also perform activities that are close to professional ones. Students analyze them and find alternative solutions [15]. So students gain experience in finding effective ways to solve problems or out of difficult situations. As a result, the assimilation of social and professional experience is activated and the conditions are created for the actualization and transformation of knowledge and skills acquired in the process of learning that are associated with future professional activities [16].

Students can prepare essays, reports, after which a discussion is organized. Here the project method can be used, which successfully helps to implement a practice-oriented approach [17].

The theme of the project for a student should be close for the better development of his general and professional skills, creative thinking [18]. At the stage of developing and organizing a project implementation plan, students, with the help of a teacher, set a goal, draw up an action plan, determine sources of information and distribute functions among working groups, choose the form of project presentation [19].

At the project implementation stage, students select and structure the material in accordance with the plan, prepare for the presentation [20].

The project presentation stage is characterized by the presentation of the work carried out within the project. Students learn to build their ideas logically, to present them in a short form, to speak in public [21].

Next is the stage at which the evaluation and analysis of results is important. Discussing the results, the disadvantages and advantages of the project work are revealed [22]. The teacher sums up, summarizes the results and gives final assessment of the project [23].

Speaking about practice-oriented approach at the university, it is necessary to note such an obligatory element as final qualification works, which, according to the basic requirement of the Federal State Educational Standard, should have practical orientation.

We have presented the analysis of the final qualification works of bachelors in 2016-2017. We divided them into 2 groups. Criteria for evaluating the work was practical orientation to a specific problem existing in an organization or industry, the development of specific measures and proposals to solve the problem, possession of professional competencies. The list of current problems studied by students in the framework of final qualifying works is quite wide and varied.

In the students' works of the second group, attention was paid to the marketing analysis of specific enterprises, which includes:

- study of the demand for products, markets;
- assessment of the competitiveness of products and finding ways to improve its level;
- assessment of production efficiency.

Students were offered recommendations to improve the performance of enterprises:

- the organizational structure of the marketing service has been developed. The first group of students developed a provision “On the service of marketing”, as well as job descriptions for the head of the marketing service and specialists on the basis of current legislation. Also, students were engaged in identifying the shortcomings of legislation in various fields and offered options for their completion and improvement of laws.

Student developments and proposals help companies and enterprises to develop, and this means that the activities of students have real practical benefits.

As a result, 91% of the students' work respond the above criteria, since the defence of the graduation qualification thesis passed on the assessment of "good" and "excellent". At the same time 87% of the students' work of the first group and 63% of the students' work of the second group received practical implementation. As a result of project activities, students develop the necessary practical skills, working with various sources of information, independently choosing the content relevant to them, compile a presentation, logically build their speech. Thanks to this method, it is easier for students to master these or other competencies.

4 Conclusion

The use of practice-oriented technologies is very important for students to acquire demanded competences because students\ adaptation to real working conditions depends on practice. The result of using practice-oriented approach in training is a bachelor who is able to effectively apply his practical competences in practice. The essence of the practice-oriented approach is to approximate the conditions of an educational institution to professional ones in order to shape the competitiveness of future professionals through gaining work experience and acquiring the necessary competencies. Practice-oriented approach successfully complements competence-based approach, thereby creating an environment for the formation of independent, mobile, productive students.

The study proves the fact that graduates have a sufficiently high proficiency not only in theoretical material, but also in practical skills for solving professional problems, as well as in-depth and comprehensive knowledge of the training profile.

Practice-oriented approach reflects basic processes of the modernization of education, where the basis is training of competent bachelors able to quickly adapt to the conditions of specific practical activities.

References

[1] Fedorov A A, Paputkova G A, Ilaltdinova E Y, Filchenkova I F, Solovev M Y Model for employer-sponsored education of teachers: Opportunities and challenges (2017) Man in India 97 (11) 101-114

[2] Garina E P, Kuznetsov V P, Egorova A O, Romanovskaya E V, Garin A P 2017 Practice in the application of the production system tools at the enterprise during mastering of new products *Contributions to Economics* **9783319606958** 105-112

[3] Garina E P, Kuznetsov V P, Romanovskaya E V, Andryashina N S, Efremova A D 2018 Research and generalization of design practice of industrial product development (by the example of domestic automotive industry) *Quality* **(S2)** 135-140

[4] Iltaldinova E Yu, Filchenkova I F, Frolova S V 2017 Peculiarities of the organization of postgraduate support of graduates of the targeted training program in the context of supporting the life cycle of the teacher's profession *Vestnik of Minin University* **3 (20)** 2

[5] Ilyashenko L K, Prokhorova M P, Vaganova O I, Smirnova Z V, Aleshugina E A 2018 Managerial preparation of engineers with eyes of students *International Journal of Mechanical Engineering and Technology* **9 (4)** 1080-1087

[6] Ilyashenko L K, Smirnova Z V, Vaganova O I, Prokhorova M P, Abramova N S 2018 The role of network interaction in the professional training of future engineers *International Journal of Mechanical Engineering and Technology* **9 (4)** 1097-1105

[7] Ilyashenko L K, Vaganova O I, Smirnova Z V, Gruzdeva M L, Chanchina A V 2018 Structure

and content of the electronic school-methodical complex on the discipline "mechanics of soils, foundations and foundations" *International Journal of Mechanical Engineering and Technology* **9 (4)** 1088-1096

[8] Kutepov M M, Vaganova, O I, Trutanova A V 2017 Possibilities of health-saving technologies in the formation of a healthy lifestyle *Baltic Humanitarian Journal* **6(3)** 210-213

[9] Kuznetsov V P, Romanovskaya E V, Egorova A O, Andryashina N S, Kozlova E P 2018 Approaches to developing a new product in the car building industry *Advances in Intelligent Systems and Computing* **622** 494-501

[10] L K Ilyashenko 2018 Pedagogical Conditions of Formation of Communicative Competence of Future Engineers in the Process of Studying Humanitarian Disciplines *International Journal of Civil Engineering and Technology* **9(3)** 607-616

[11] Markova S M, Sedykh E P, Tsyplakova S A, Polunin V Y 2017 Perspective Trends of Development of Professional Pedagogics as a Science *In International conference on Humans as an Object of Study by Modern Science* 129-135

[12] Smirnova Zh V, Krasikova O G 2018 Modern tools and technologies for assessing learning outcomes *Vestnik of Minin University* Vol 6 **3** 9

[13] Potashnik Y S, Garina E P, Romanovskaya E V, Garin A P, Tsymbalov S D 2018 Determining the value of own investment capital of industrial enterprises *Advances in Intelligent Systems and Computing* **622** 170-178

[14] Smirnova Zh V, Mukhina M V, Kutepova L I, Kutepov M M, Vaganova O I 2018 Organization of the research activities of service majors trainees *Advances in Intelligent Systems and Computing* **622** 187-193

[15] Smirnova ZH V, Gruzdeva M L, Krasikova O G 2017 Open electronic courses in the educational activities of the university *Vestnik of Minin University* **4(21)** 3

[16] Prokhorova M P, Semchenko A A 2018 Involving of trainees-future teachers of professional training in project activities in the discipline *Vestnik of Minin University* vol. 6 **2** 6

[17] Tsyplakova S A, Grishanova M N, Korovina E A, Somova N M 2016 Theoretical bases of designing of educational systems *Azimuth of Scientific Research: Pedagogy and Psychology* Vol. 5 **1 (14)** 131-133

[18] Vaganova O I, Koldina M I, Trutanova A V 2017 Development content of professional pedagogical education in the conditions of realization of competence approach *Baltic Humanitarian Journal* T 6 **2 (19)** 97-99

[19] Vaganova O I, Smirnova ZH V Trutanova A V 2017 Organization of research activities of bachelor of professional education in electronic form *Azimuth of Scientific Research: Pedagogy and Psychology* **6(3)** 239-241

[20] Yashin S N, Yashina N I, Ogorodova M V, Smirnova Z V, Kuznetsova S N, Paradeeva I N 2017 On the methodology for integrated assessment of insurance companies' financial status *Man in India* **97 (9)** 37-42

[21] Bicheva I B, Filatova O M 2017 Formation of the teacher-leader in the educational process of the university *Vestnik of Minin University* **3 (20)** 5

[22] Bogorodskaya O V, Golubeva O V, Gruzdeva M L, Tolsteneva A A, Smirnova Z V 2018 Experience of approbation and introduction of the model of management of students' Independent work in the university *Advances in Intelligent Systems and Computing* **622** 387-397

[23] Bulaeva M N, Vaganova O I, Koldina M I, Lapshova A V, Khizhnyi A V 2017 Preparation of Bachelors of Professional Training Using MOODLE *In International conference on Humans as an Object of Study by Modern Science* 406-411