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EDUCATIONAL PROGRAMS OF APPLIED BACHELOR'S DEGREE: MODERN LABOR MARKET REQUIREMENTS FOR PERSONNEL TRAINING

Currently, in the context of education modernization in the Republic of Kazakhstan, the problem of developing educational programs for applied bachelor's degree is becoming very urgent.

Based on the analysis of statistical data, the article discusses the need for their implementation and successful functioning in the Republic of Kazakhstan.

When analyzing the demand, it is necessary to take into account that the object of this analysis is the approximate ratio of supply and demand in the regional and republican labor markets for a particular specialty or profession, in which training is or will be conducted in a TVE organization.

The analysis of sociological studies of international and domestic labor market shows which specialties and professions are most in demand. They are associated with the following areas of activity: nanotechnology, high-tech engineering, biotechnology, sales and marketing, IT technology, services, logistics and transport, medicine, chemical industry, «clean» energy and environment.

Training in OPPB is carried out in the areas that combine groups of related professions, specialties and skill levels. The most in-demand areas are: business and management, metallurgy and metalworking, electrical engineering, construction, woodworking, textiles and clothing production, chemistry, physics and biology, printing, interior design, health and hygiene, food processing, agriculture, ecology and environmental protection environment, etc.

Keywords: bachelor's degree, applied bachelor's degree, educational program of applied bachelor's degree, pedagogical specialty, professional activity.

Introduction

In the context of modern development of society and technology, graduates of TVE (technical and vocational education) must have the skills and abilities that meet modern requirements of the labor market. Employers make high demands on their employees, dictated by the conditions for the development of modern economy, especially in the context of a pandemic [1]. Earlier only technical skills were required from middle-level specialists, but today it is necessary to have a certain theoretical base. Gradually, training of specialists in TVE organizations is approaching the level of higher education [2]. These two circumstances have led to the need for the introduction of applied bachelor's programs.

«Applied Bachelor» is a qualification awarded to a graduate who has completed basic educational program at the bachelor's level, who has competencies in solving technological problems in various spheres of social and economic activity, and is ready to start professional activity immediately after graduation from an educational institution [3].

The Applied Bachelor's program aims to integrate two components, theoretical and practical, within a single educational process. Consequently, curricula should be based on the needs of production. The needs of the labor market in modern Kazakhstan are extremely diverse, but employers agree on one thing: they need highly qualified personnel at all levels, from the level of a worker to the level of a research scientist [1].

It is assumed that graduates who have mastered the applied bachelor's program will become specialists with the skills of practical work in production and, at the same time, have undergone theoretical training at the level of higher education. Thus, the principle of partnership between TVE and the university, college and university is being implemented, where students can continue their education and become highly qualified specialists. At the same time, this will serve as an additional incentive to attract young people to the organization of TVE.

The essence of the applied baccalaureate is to raise the status of vocational education by equating some college specialties that meet innovative requirements with higher education. A number of sectors of the economy and types of economic activity have become so complicated that they require specialists capable of working with science-intensive, high technologies [2].

Materials and methods

The following research methods were used:

– descriptive method (analysis and synthesis, systematization and comparison of scientific and theoretical, educational and methodological literature on the research topic);

– socio-pedagogical method (observation, conversations with teachers);

– experimental (experimental search work, organization and conduct of pedagogical experiment).

The presented methods were used in the study and processing of scientific sources, modern achievements in the development of educational programs of applied bachelor's degree.

Human Resources Development Center JSC together with the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan [4] showed that the main goal is to determine the current situation in the republican and regional labor markets, changes in the need for specialists.

It was revealed that the payroll number of employees in the surveyed enterprises as of January 1, 2021 was 2 441.0 thousand people, the number of vacancies was 36 976 units. The share of vacancies in the headcount was 1.5 %.

Most of the vacancies were noted in the professional group of occupations «professional specialists» 8 322 units, their share amounted to 22.5 % of the total number of vacancies, «workers in industry, construction, transport and other related occupations» was 7 159 units. Free jobs in the professional group «operators of production equipment, assemblers and drivers» amounted to 5,756 units, «workers in the service and sales sectors» was 5,559 units.

The expected need for employees for the reporting period amounted to 12,080 people, their share in the payroll number of employees was 0.5 %.

During the current year, the most in demand are professional specialists making 2,710 people, workers in the service and sales sectors, their deficit was 2,360 and workers in industry, construction, transport and other related occupations was 2,314 people.

Employees in the field of administration are less in demand, i.e. 342 people.

The greatest need for qualified professionals is experienced by organizations in the field of public health and social services (574 people) and in industry (511 people).

In terms of types of economic activity, the largest number of vacancies was in industry, 11,087 units, and in the field of transport and storage 6,674 units, the smallest was in real estate transactions, 320 units.

The greatest expected need for personnel is noted in industry (3,426 people), and in the wholesale and retail trade; repair of cars and motorcycles (2,062 people), in the field of administrative and support services (1,378 people), in construction

(930 people). The total share of these types of economic activities in the total expected need for workers was 64.5 %.

At enterprises and organizations with private ownership, the expected need for workers for 2021 was 9,116 people, of which 3,080 people in industry, in the wholesale and retail trade; repair of cars and motorcycles was 1,463 people, in the field of administrative and support services was 1,322 people.

At enterprises and organizations with the state form of ownership, the greatest need falls on the sphere of health care and social services for the population (343 people). Their share in the total expected demand for workers at state-owned enterprises was 35.0 %.

In terms of regions, the largest number of job vacancies as of January 1, 2021 was in the following regions: Nur-Sultan city – 7 191 units, Almaty city – 6 241 units, Karaganda region - 3 090 units. In Nur-Sultan, the majority of vacancies were formed in the field of healthcare and social services of the population (1,483 units), in Almaty – in the field of wholesale and retail trade; repair of cars and motorcycles (1,866 units), in the Karaganda region - in the industry (1,097 units).

From the above data, it can be seen that there is a shortage of technical workers with an average qualification level in the country. Therefore, it is necessary to focus on the availability and prompt response of TVE to changes in the needs of employers in personnel [5].

According to the World Bank (2019) [2], the labor market in Kazakhstan has grown, and in comparison with the international standard, Kazakhstan has a relatively lower unemployment rate. According to the official data of the Statistical Agency of the Republic of Kazakhstan, the unemployment rate has decreased over the past three years.

The education system must train personnel who, together with theoretical knowledge, will acquire the necessary skills for quick adaptation in real production conditions. At present, a unified system for assessing the quality of education in TVE organizations has not been developed, which does not allow for a full-fledged monitoring of the results of educational activities of TVE organizations [6].

Private sector studies in OECD countries and Kazakhstan summarize that employers are not completely satisfied with the quality of education of VET graduates [7]. For example, half of the employers surveyed indicated that an inadequately educated workforce is a major constraint for relatively large organizations, and the percentage of such workers is significantly higher compared to OECD and Central Asian countries.

As the main external and internal factors that determine the development trends of TVE in general, and the system of applied bachelor's degree, in particular, one can single out [2]:

1 External factors: (1) the process of globalization of national economies, which increases the requirements for the mobility of labor resources and, accordingly, changes in approaches to personnel training; (2) the formation of sets of new professions, mainly on the basis of new technologies that require qualitatively new approaches to the organization of the educational process; (3) acceleration of the process of obsolescence of professional knowledge, which requires constant professional development of employees; (4) structural changes in the economy, increasing the role and importance of new industries related to ecology, alternative energy, medicine, nanotechnology, digital technologies and genetic engineering; (5) the formation of an international educational space and, as a consequence, the internationalization of the TVE system; (6) a demographic crisis of a bilateral nature, expressed in the continuing demographic explosion in developing countries and the deepening process of population aging in developed countries; (7) the threat of the emergence of economic crises on a global and regional scale, and the associated threat of unemployment, especially among young people.

2 Internal factors: (1) lack of demand for graduates of TVE; (2) the existing practice of preference for specialists with higher education, including for the performance of production tasks intended for mid-level specialists; (3) the inability of the TVE system to make the transition to a new model of education based on a competence-based approach in a short time; (4) the lack of qualified teaching and engineering-teaching personnel who are able to work effectively in the new conditions; (5) inconsistency of material, technical and information resources of educational institutions with modern requirements for personnel training; (6) measures taken by the state to regulate the sphere of personnel training, including through the adoption and implementation of state programs.

Significant negative factors that can serve as a serious obstacle to the implementation of applied bachelor's programs are: (1) low status of technical and vocational education in society; (2) an ineffective youth career guidance system that does not meet modern requirements; (3) lack of efficiently operating vocational guidance centers, including those working with high school students; (4) the inability of the majority of TVE organizations to respond flexibly to changes in the requirements of the republican and regional labor market [2].

For the successful implementation of the applied baccalaureate system, it is also necessary to develop and implement into practice, a system for determining and predicting the need for personnel in the context of specific professions, which will allow focusing on the real needs of the labor market.

The main guidelines for improving the training of highly qualified personnel are the activation and active participation of employers in the personnel training system.

Main obstacles: (1) lack of flexibility in changing curricula, which does not encourage employers to participate in this process. The training system is highly regulated by the current model curricula and programs, so that colleges are not able to make changes in curricula without consequences; (2) the question of partnerships between enterprises and educational institutions in the form of co-financing of targeted training and a trust management system remains open; (3) thirdly, it is necessary to resolve the issue of taxation of the amount that the enterprise, corporation, employer are ready to send for targeted education and training. For example, in the USA and Germany this figure is 5 percent, in Luxembourg and Spain - 10 percent, in the countries of Central and Eastern Europe - up to 10 percent [8]; (4) an important element is professional standards, which are, in fact, the terms of reference of the business to determine the quality of personnel training.

Partnerships between enterprises of potential employers and TVE organizations facilitate the use of elements of a dual system in the educational process, which implies the organization and conduct of industrial training in vocational training centers, where students undergo vocational training directly at the workplace, gaining skills and competencies in real production conditions.

One of the key problems is the low level of investment in the development of the TVE system on the part of corporations and organizations representing the interests of employers [2].

Training programs should be aimed at the formation of certain competencies through the transfer of integrated knowledge, skills and abilities to the student. It is necessary to provide for an increase in the volume and duration of industrial practice, obtaining appropriate certificates (including obtaining a working specialty in this area of study), obtaining work permits.

It should be noted that technologies are updated on average every 3 years, every 5 to five years – this is a new technological cycle, scientists note that this process has been accelerating over the past decade [9]. Accordingly, educational organizations should have flexibility and the ability to change the content of programs [2].

In the process of developing and implementing applied bachelor's programs, it is necessary to use international experience in the implementation of similar programs and recommendations developed by the ILO (International Labor Organization) [8]. For example, in most countries participating in the Turin Process, a modular system of organizing the educational process in vocational education prevails. This approach involves the development of a system of professional

modules for teaching certain competencies, practical skills and abilities (Modules of Employable Skills), which will effectively combine the theoretical and practical components of the educational process [5]. Thus, the provision of a combination of fundamentality and practice-orientedness of a modular educational program is achieved by integration of all its constituent elements.

The modular principle of organizing the educational process allows varying types and kinds of educational technologies, and use such forms of education as evening or distance learning [5]. At the same time, it is possible to increase the volume of the practical component by 2–3 times, in comparison with the classical system of vocational education functioning in the Republic. Thus, the practical orientation of the educational process is achieved in three ways: (1) in conditions that simulate the conditions of real production (simulators, training stands, etc.); (2) in conditions as close as possible to the conditions of real production (training workshops, training grounds); (3) directly at the operating enterprise.

Results and its discussion

In order to ensure the implementation of educational programs for applied bachelor's degree, providing theoretical training and mastering applied skills, NJSC «Holding» Kassipkor» held a Republican seminar on March 13, 2018 on the topic «Implementation of the applied bachelor's degree: problems and solutions» [10].

The following issues were discussed: conceptual approaches and principles of applied bachelor's degree in the Republic of Kazakhstan, Finland's experience in developing applied bachelor's programs, the use of guidelines in the development of educational programs for applied bachelor's degree, the European Credit System for Professional Education (ECVET) as a technical basis for the transfer and accumulation of credit units, experience the development of an applied bachelor's program and an algorithm for the implementation of integrated educational programs of an applied bachelor's degree, the interface of TVE and higher education programs and the interaction of colleges, universities and enterprises and modern labor market requirements for training in educational programs of an applied bachelor's degree. ways to ensure the continuity of the content of multi-stage professional training in the light of the National Qualifications Framework [11], topical issues of regulatory support for the functioning of TVE organizations within the framework of the implementation of applied bachelor's programs, practical recommendations for the development of educational programs for applied bachelor's degree.

The experiment was started on the basis of order of June 26, 2018 № 305 of the Ministry of Education and Science of the Republic of Kazakhstan «On the introduction of applied bachelor's degree in organizations of technical and professional, post-secondary, higher education in the experimental mode»,

according to which it was necessary to experimentally introduce bachelor's degree. The experimental program was compiled on the basis of methodological recommendations developed by Talap NJSC (formerly Kasipkor Holding NJSC) [12].

Conclusions

When analyzing the demand, it is necessary to take into account that the object of this analysis is the approximate ratio of supply and demand in the regional and Republic's labor markets for a particular specialty or profession, in which training is or will be conducted in a TVET organization.

An analysis of sociological studies of the international and domestic labor market shows that the most in demand are specialties and professions associated with the following areas of activity: nanotechnology, high-tech engineering, biotechnology, sales and marketing, IT technologies, services and maintenance, logistics and transport, medicine, chemical industry, clean energy and ecology.

The training in OPPB is carried out in areas that unite groups of related professions, specialties and skill levels. The most demanded areas in which training for OPPB is conducted (excluding specialization) are: business and management, metallurgy and metalworking, electrical engineering, construction, woodworking, textiles and clothing production, chemistry, physics and biology, printing, interior design, healthcare and hygiene, food processing, agriculture, ecology and environmental protection, etc.

The development and implementation of an applied bachelor's program in Kazakhstan's colleges will allow solving the following main tasks: the need to graduate specialists with skills to work in the knowledge economy system; bridging the gap between higher educational institutions and TVE organizations on the issue of training personnel corresponding to the demands and needs of the labor market; ensuring the relationship between education and the needs of production in highly qualified personnel; assistance in solving problems of employment without harming the economy and without burdening the state sphere of social security; ensuring the transition of training from the "subject-knowledge approach" to the «modular-competence approach», when the emphasis is transferred from the content to the result.

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ОБРАЗОВАТЕЛЬНЫЕ ПРОГРАММЫ ПРИКЛАДНОГО БАКАЛАВРИАТА: СОВРЕМЕННЫЕ ТРЕБОВАНИЯ РЫНКА ТРУДА ДЛЯ ПОДГОТОВКИ КАДРОВ

В настоящее время в условиях модернизации образования в Республике Казахстан весьма актуальной становится проблема разработки образовательных программ прикладного бакалавриата.

В статье на основе анализа статистических данных рассматривается необходимость внедрения и успешного функционирования ОППБ в Республике Казахстан.

При проведении анализа востребованности необходимо учитывать, что объектом данного анализа является примерное соотношение спроса и предложения на региональном и республиканском рынках труда по определенной специальности или профессии, по которым ведется или будет вестись обучение в организации ТПО.

Анализ социологических исследований международного и внутреннего рынка труда показывает, какие специальности и профессии являются наиболее востребованными. Они связаны со следующими сферами деятельности: нанотехнологии, высокотехнологические инженерные работы, биотехнологии, продажи и маркетинг, IT-технологии, услуги и обслуживание, логистика и транспорт, медицина, химическая промышленность, «чистая» энергетика и экология.

Подготовка по ОППБ ведется по направлениям, объединяющим группы смежных профессий, специальностей и уровней квалификации. Наиболее востребованными направлениями являются: бизнес и управление, металлургия и металлообработка, электротехника, строительство, деревообработка, текстиль и производство одежды, химия, физика и биология, печатное дело, дизайн интерьера, здравоохранение и гигиена, пищевая промышленность, сельское хозяйство, экология и охрана окружающей среды и т.д.

Ключевые слова: бакалавриат, прикладной бакалавриат, образовательная программа прикладного бакалавриата, педагогическая специальность, профессиональная деятельность.

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ҚОЛДАНБАЛЫ БАКАЛАВРИАТТЫҢ БІЛІМ БЕРУ БАҒДАРЛАМАЛАРЫ: КАДРЛАРДЫ ДАЯРЛАУҒА АРНАЛҒАН ЗАМАНАУИ ЕҢБЕК НАРЫҒЫНЫҢ ТАЛАПТАРЫ

Қазіргі уақытта Қазақстан Республикасында білім беруді жаңғырту жағдайында қолданбалы бакалавриат үшін білім беру бағдарламаларын әзірлеу мәселесі өте өзекті болып отыр.

Бұл мақалада, статистикалық мәліметтерді талдау негізінде, Қазақстан Республикасында ҚБББ енгізу қажеттілігі және оның сәтті жұмыс істеуі қарастырылады.

Сұранысқа талдау жүргізу кезінде ТжҚБ ұйымында оқыту жүргізілетін немесе жүргізілетін белгілі бір мамандық немесе кәсіп бойынша өңірлік және республикалық еңбек нарықтарындағы сұраныс пен ұсыныстың шамамен арақатынасы осы талдаудың объектісі болып табылатынын ескеру қажет.

Халықаралық және ішкі еңбек нарығындағы әлеуметтанулық зерттеулерді талдау қай мамандықтар мен кәсіптердің сұранысқа ие екенін көрсетеді. Олар келесі қызмет салаларымен байланысты: нанотехнологиялар, жоғары технологиялық инженерлік жұмыстар, биотехнологиялар, сату және маркетинг, IT-технологиялар, қызметтер және қызмет көрсету, логистика және көлік, медицина, химия өнеркәсібі, «таза» энергетика және экология.

ҚБ ББ бойынша дайындық аралас кәсіптер, мамандықтар және біліктілік деңгейлері топтарын біріктіретін бағыттар бойынша жүргізіледі. Ең сұранысқа ие бағыттар: бизнес және басқару, металлургия және металл өңдеу, электротехника, құрылыс, ағаш өңдеу, тоқыма және киім өндірісі, химия, физика және биология, баспа ісі, интерьер дизайн, денсаулық сақтау және гигиена, тамақ өнеркәсібі, ауыл шаруашылығы, экология және қоршаған ортаны қорғау және т.б.

Кілтіті сөздер: бакалавриат, қолданбалы бакалавриат, қолданбалы бакалавриаттың білім беру бағдарламасы, педагогикалық мамандық, кәсіби қызмет.

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