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Dual system of education: yesterday and today

Abstract. *The article is devoted to the study of the system of dual education, which constitutes the basis of effective modern education. Its purpose is to identify the basis of dual education, to describe its structure and main components.*

The work is devoted to the study of the dual training system, clarification of its definition in the pedagogical literature, and a description of its structure. The article focuses on the research of foreign and domestic scientists, identifying the forms and methods of this training. During the study, the following methods were used: the method of participatory observation, the system method, the method of description, the method of analysis.

The novelty of the article lies in the fact that the work provides a critical understanding of research on the dual learning system; the essence of the method of the dual learning system is revealed, a detailed description of this process is given. In the given research scientific results were obtained; defined and refined the types and methods of the dual training system.

Keywords: *dual system, education, vocational education, training, specialists, theory, practice.*

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Introduction

The topic is relevant since the dual training system has been established all over the world. Even though this training system appeared in our country several years ago, this topic still arouses scientific interest from many domestic and foreign scientists. The dual system is one of the training systems, which is aimed at the practical application of the knowledge gained as a result of training in colleges and universities.

It is also worth noting that in our time, a gap between the theoretical knowledge that students receive in universities and the practical skills that future employers not only expect from them, but which will also contribute to the high competitiveness of the job applicant, is becoming more and more noticeable. Such shortcomings can be eliminated by the system of dual education,

which allows combining practical and theoretical training in the training of future specialists.

Formulation of the problem

Nowadays, the gap between the theoretical knowledge that students receive in universities and the practical skills that future employers not only expect from them, but which will also contribute to the high competitiveness of an applicant for a job, is becoming more noticeable.

Research objective: determine the components of the dual education system, its successful application both abroad and in the country.

Research methods:

- method of description;
- method of included observation;
- systemic method;
- method of critical analysis.

History

The elements of dual education in the early historical period were widespread in Arab, Asian and European countries in terms of apprenticeship according to the «master-apprentice» system, dual system of vocational education firstly appeared in Germany. German scientist and educator Georg Kerschensteiner, who influenced the formation of the European teacher movement abroad in the 19th-20th centuries, claimed that the main method of teaching young workers was legislatively adopted in pre-war Germany [1].

The father of the dual system of vocational education is considered Georg Kerschensteiner was a German teacher and from 1895 to 1919 he headed the Munich school city council and was involved in the popular reform of the school curriculum.

In the early 20th century in Munich, Kerschensteiner introduced a new, practice-oriented type of school that put the profession and its necessity at the center of attention. In the academic year 1900-1901, the first professional schools for butchers, pastry chefs, chimney sweeps, barbers and hairdressers were founded in Munich. They became an example of a new, professionally divided type of school that was supposed to complement vocational training.

Results / discussion

A radical transformation of the socio-cultural and economic space inevitably affects education, including vocational education. It is the new approach to the vocational education system that will ensure high-quality training of highly qualified specialists of the future.

Strict professional criteria also require an increase in the level of preparedness of qualified personnel in various areas of life. Currently, higher educational institutions feel an urgent need to solve the problem of modernization and reform of higher education. The introduction of a system of dual training of specialists opens up new additional prospects in increasing the effectiveness of vocational education.

Staffing in a particular industry should, in our opinion, be studied in qualitative and quantitative

aspects. We believe that it is necessary to focus on the qualitative aspect, and we will attempt to consider possible trajectories for improving the educational level of specialists, what conditions the dual education system meets.

The experience of developing educational systems in countries such as Sweden, Great Britain, Germany, Japan indicates the need to integrate the educational process and practice, which serves as the basis for high-quality training of qualified specialists [2, p.559]. Germany became the first country which used the principles of the dual education system (this system has been applied for more than 15 years). The educational process is implemented through a synthesis of work activities as a trainee (student) and the study of theory at the educational institution. In addition, there is a gradual increase in the complexity of training and practical tasks. This concept is called vocational education.

Although it is decentralized in Germany, it is structured according to a certain standard. Since 1981, Germany has had laws such as the Promotion of Vocational Education and Training (describes the regulations for planning and statistics on vocational education and training), the Youth Work Protection Act (substantiates protection measures for trainee youth), on vocational training» [3, p.171]. These laws passed in Germany are also an example of how the country cares about its workforce and the proper exploitation of youth labour.

In many countries, the situation is roughly the same when a certain innovation is introduced. But important details are not fully worked out.

Vocational training in Germany strictly follows the List of Occupations, which has now been reduced from 600 (as of 1971) to 380 occupations. The reduction in the number of professions has occurred through the integration of training in similar fields of work. It should be noted that the name of professions, the set of knowledge, skills and abilities required for students to master each profession, as well as the model curriculum and requirements for final attestation are developed and agreed upon by the Minister of Education and Science together with the Minister of a particular industry [4, p.149].

The documents developed provide a legal basis. They are legally binding. In addition, a state is trying to compensate the costs of the company for vocational education. The financial investment in the dual training system in Germany is approximately thirty billion euros. Most enterprises with dual education provide themselves with a qualified workforce that meets the specific requirements and demands of employers, which saves on the costs of finding, recruiting, and adapting employees.

The dual training system has several advantages. One of the most important advantage is to ensure a high percentage of employment of graduates of higher education since future specialists have the highest level of proximity to the requests of production managers. Each university is interested in its graduates being able to compete with graduates of other educational institutions; an even greater interest of the university may become the opportunity to produce specialists who not only compete with the same graduates, without work experience but also with the topic of professionals in their field, who do not yet have sufficiently high experience in the position being mastered. The introduction of the dual education system in higher education opens additional prospects for increasing the effectiveness of vocational education.

Under the dual system, both educational institutions and industrial enterprises, firms, and organizations are involved in education. The programs of the dual education system integrate theoretical knowledge and innovations tested in practice. The meaningful meaning of transforming the traditional education system into a dual one is that in dual education, students acquire knowledge simultaneously in two educational institutions: universities, academies, institutes - the theoretical part, and in production - the practical part. The dual education system, as a distinctive characteristic from the traditional one, presupposes an alternation of theory and practice during the period of study, which leads to high results, the effectiveness of the use of the acquired knowledge, skills, and abilities [5, p.174].

The greatest effect when using the dual education system can be achieved provided

that the groups of students are not large, on the contrary, the smaller the group, the more effective training, especially in terms of practical training in production. Financing can become a certain problem of the dual education system, but these issues are resolved exclusively at the government level. To solve this problem, we can also try to borrow from countries in Europe and Asia, where the dual approach has already been tried and implemented.

In recent decades, the dual education system has become appropriate in the field of information technology due to the constant modernization of the training of highly qualified specialists.

According to Schmidt H., Alex L. [6], practical experience in the implementation of the dual education system in Germany shows that most of the areas for training future specialists are regulated by an agreement between social partners, regions, and the state. The training of specialists in one profile or another is based on the requests and requirements of the personnel market, which allows young people to be provided with professional mobility and competitiveness. The period of study varies up to 3 years.

Trainees (apprentices) who undergo practical training at the enterprise receive a salary. The system is funded by the state and enterprises. The competence of the state is training at an enterprise, and the competence of the region includes training at a professional university. The enterprise fully provides the training process with modern equipment that meets the technical requirements. Large enterprises and organizations can afford training in their laboratories and workshops, small ones – in the workplace.

The initial stage of training is directly related to the passage of industrial practice, and, as a result, a graduate of a higher educational institution can demonstrate to a potential employer many years of practical experience in the chosen professional profile.

A student who is studying with dual system is the most independent financially because he has a salary already during the period of study. However, it is necessary to note that a student

who spend less time for studying theory than those who studied in the traditional vocational education system.

Currently, many universities in Russia and Kazakhstan have begun to move to a dual education system. As an example, we can consider the Pavlodar Innovative Eurasian University, which since 1997 has transferred the training of students of the economic direction to the dual training system. Undoubtedly, this was preceded by a lot of work, it is simply impossible to introduce a dual system without preparation.

In 2012, the process of introducing dual education forms began in Kazakhstan. There were identified sectors that need personnel such as agriculture, transport, metallurgy, and mechanical engineering, oil and gas, and chemical production. Also, there were identified educational institutions where students can be trained with dual education. Today, Kazakhstan has made significant progress in implementing the plan. The country has established an organization that leads and coordinates the work in this direction (the department of methodology of dual education system), developed model curricula and educational programmes for specialties, the novelty of which lies in the fact that more than 40-50 per cent of training time is allocated for industrial practice. With the support of the Federal Ministry of Economic Cooperation and Development of the Federal Republic of Germany to implement dual education in the Republic of Kazakhstan [7, p.287].

There have been introduced Law of the Republic of Kazakhstan dated February 17, 2012 “On Amendments and Additions to the Labor Code of the Republic of Kazakhstan” on the formation of a national qualification system for the Labor Code of the Republic of Kazakhstan; National Qualifications Framework; Industry qualification framework; Professional standard; The rules for assessing the level of professional training and confirmation of qualifications.

The National Qualifications Framework (NQF) is a national qualifications framework for skilled labor market workers, education, and professionals. After the adoption of this document, a new system of certification and transfer of qualifications started to develop in

Kazakhstan. A special feature of the National Qualifications Framework of Kazakhstan is that it is an integral part of the National Qualifications Framework, corresponds to the European Qualifications Framework at eight levels across the country and is based on learning outcomes. Sectoral employers and employers’ associations are involved in the development of professional standards.

The intensive processes of structural changes occurring in the economy of the Republic of Kazakhstan have led to the highest demand for specialists of a new generation, who should successfully implement these processes based on the current historical, economic, and political situation in the country. Practice, economic interests, intensive ways of development, in which our country is moving, should dictate the goals, methods and content of vocational education [8, p.6].

The analysis of the world experience of dual education system creates preconditions for the implementation of its most effective aspects in the TVE system of Kazakhstan. An introduction of Kazakh model of dual education will contribute to the solution of the following tasks:

- determining the need for personnel (the market itself regulates the need for personnel).

The main principle of the dual system is the signing of an agreement with the company for practical training. At the same time, enterprises are guided by their needs; the issue of employment of graduates is largely resolved (many students remain to work in the same enterprises where they have got a practical training);

New training system was implemented thanks to partnership, the convergence of educational organizations, employers, and educational authorities.

An important innovation is the certification of graduates, future specialists. Previously, the qualifications of a young specialist - a graduate were confirmed by the commission for the final certification of educational organizations. Today, by the Law of the Republic of Kazakhstan «On Education», the procedure for assigning qualifications to graduates is separated from the educational process. Since 2012, in accordance with the instructions of the Head of State, work

has begun in Kazakhstan to transfer this function to a competitive environment, to employers' associations. Today, three certification centers have been established in tourism, mining and oil and gas industries.

Thus, the dual training system is an innovative type of organization of targeted vocational training, which presupposes coordinated interaction between the educational and production spheres for training specialists.

The idea of dual learning takes on its real practical contours. The interaction of education with business, subjects of labor markets is one of the components of the modern model, which is in demand by society.

Conclusion

Investing in the training of students is profitable for organizations and companies, as they get a trained specialist who is fully competent in the specifics of the company. Moreover, some studies reveal that employers are confident that the graduate will continue to work at their place of work after graduation, moreover, under conditions dictated by the employer.

Dual education, along with the optimal transfer of professional experience, allows you to establish your position in a working environment. Businesses benefit from new ideas and impulses from learners.

Upon graduation, students can immediately be involved in production. So that, the need for professional adaptation disappears.

The study of graduate qualifications meets the requirements of employers and allows the implementation of its results in production. In the logic of partnership development between education and partner enterprises, new approaches to professional orientation of students

and management of their career development are being formed.

Employers play a significant role in the development of social partnerships in the field of vocational education.

The introduction of dual educational programs meets the modern challenges in a society. It is based on the available foreign experience. Dual educational programs open additional opportunities for increasing the effectiveness of training highly qualified personnel.

The programs of the dual training system are a combination of training programs for specialists at different levels and in different directions and scientific specialties. The introduction of such programs requires universities to analyze the content of the respective curricula deeply and to integrate and closely interact in the student's learning process. In essence, we are talking about the systemic integration of the content of education in the organization of dual education in different directions or specialties or end-to-end education at different levels with the award of appropriate degrees.

Employers want «qualified» professionals who, as soon as they enter the workplace, immediately begin their professional activity without a long adaptation and «training» in the workplace. Graduates of educational institutions are interested in successful employment in their specialization. Thus, the state is effectively solving the problem of training qualified personnel for the whole economy. The use of elements of the dual system in the educational process contributes to the formation of specialists with a higher and more modern level of education, as it is this type of education that allows the student to open, show his knowledge, develop creative thinking, learn to plan his activities and achieve the expected results.

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Ш. Уәлиханов атындағы Көкшетау университеті, Көкшетау, Қазақстан

Дуальды оқыту жүйесі: кеше және бүгін

Аннотация. Мақала қазіргі заманғы тиімді білім берудің негізін қалайтын дуальды оқыту жүйесін зерттеуге арналған. Оның мақсаты – дуальды оқытудың негізін анықтау, оның құрылымы мен негізгі компоненттерін сипаттау. Мақалада дуальды оқыту жүйесін зерттеуге, оның педагогикалық әдебиеттердегі анықтамасын нақтылауға және оның құрылымын сипаттауға арналған. Мақалада шетелдік және отандық ғалымдардың зерттеулері, осы оқытудың формалары мен әдістерін анықтауға баса назар аударылған. Зерттеу барысында келесі әдістер қолданылды: бақылау әдісі, жүйелік әдіс, сипаттау әдісі, талдау әдісі.

Мақаланың жаңалығы - жұмыстың дуальды оқыту жүйесі туралы зерттеулерге сыни түсінік беруінде; дуальды оқыту жүйесі әдісінің мәні ашылады, осы процестің толық сипаттамасы келтірілген. Зерттеу барысында ғылыми нәтижелер алынды; дуальды оқыту жүйесінің түрлері мен әдістері анықталды және нақтыланды.

Түйінді сөздер: дуальды жүйе, білім беру, кәсіптік білім, оқыту, маман, теория, практика.

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Дуальная система образования: вчера и сегодня

Аннотация. Статья посвящена изучению системы дуального обучения, составляющей основу эффективного современного образования. Цель – выявление основы дуального обучения, описание ее структуры и основных компонентов. Уточнено определение дуальной системы в педагогической литературе, описана ее структура.

Основное внимание в работе акцентируется на исследованиях зарубежных и отечественных ученых, выявлении форм и способов данного обучения. В ходе исследования использованы: метод включенного наблюдения, системный метод, метод описания, метод анализа.

Новизна статьи заключается в том, что дается критическое осмысление исследований по дуальной системе обучения, выявляется сущность способа дуальной системы обучения, дается развернутое описание данного процесса. В процессе исследования получены научные результаты, определены и уточнены типы и способы дуальной системы обучения.

Ключевые слова: дуальная система, образование, профессиональное обучение, обучение, специалист, теория, практика.

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