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DUAL EDUCATION SYSTEM IN TRAINING QUALIFIED ALTERNATIVE ENERGY PERSONNEL IN COOPERATION WITH MANUFACTURING ENTERPRISES

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Abstract

The article presents information about the characteristics of dual education, which is considered a new innovative educational system in the training of qualified personnel in technical fields, and its differences from the traditional educational system.

Key words: alternative energy direction, dual education system, engineering and technical personnel, effective and flexible mechanism, educational programs, production enterprises, private firms.

President of the Republic of Uzbekistan In the year of February 21, 2024 Decree No. PF-37 on the state program on the implementation of the "Uzbekistan - 2030" strategy in the "Year of Youth and Business Support" was announced. One of the goals of the "Uzbekistan - 2030" strategy in the decree, in the direction of "Creating suitable conditions for every person to realize his potential" in the plan of practical activities for 2024, is - Higher education to expand the coverage, to increase the quality of training of highly educated specialists, and to fulfill the task of "organizing the educational system in accordance with the changes in the international labor market, technological processes, and bringing the quality of education in universities to a new level". In order to fulfill such tasks, first of all, as practical measures, it is necessary to revise the terms of training of practice-oriented specialists in universities and educational and methodological manuals, to improve educational programs based on the model of prestigious universities of the world.

In addition, with the decision of the Cabinet of Ministers of the Republic of Uzbekistan dated March 29, 2021 No. 163 "On measures to organize dual education in the professional education system" regarding further improvement of the education system in the Republic of Uzbekistan, professional education The



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Regulation on the procedure for organizing dual education in the system was approved.

In addition, the development of a national plan, a special program for the training of engineers and technicians in the field of renewable energy sources, which allows solving the problem of professional training in the training of qualified engineers and technicians in our country and the implementation of current tasks such as creating a new system of personnel training using the dual education system in secondary and special educational institutions is important. Because the practical use of alternative energy sources is considered as the most important factor for sustainable economic development and increasing the competitiveness of qualified personnel [1].

It is known that the social and economic reforms carried out in the professional education system require further improvement of the process of providing the labor market with competitive qualified personnel. The result of the reforms carried out in the field of professional education is that a completely new system of education, which is harmonized with the international standard classification, has been introduced. Also, at present, systematic reforms are being carried out to form the integration of educational content, science and production on the basis of the dual education system. Also, the system of training qualified personnel of higher educational institutions is characterized not only by quality changes in the process of the educational system, but also by its interaction with the production sectors, as well as by the development of personnel competence [2,3].

At present, the main problem of educational institutions in the educational system of higher education institutions is the low percentage of employment of young specialist graduates in their specialties. The solution to this problem is dual education system of higher education institutions. is to introduce the education system.

As for the name "dual", dualism (lat. dualis - two sides) is a concept that advocates the coexistence of irreconcilable states, principles, ways of thinking, worldviews, aspirations, and epistemological principles. doctrine. Dualism is a form of pluralism. The term dualism was introduced by the German philosopher H. Wolff (1679-1754). Dualism represents the following pair of concepts: the world of ideas and the real world. Dualism can be manifested in philosophical, religious, anthropological, ethical forms. The dual educational form of vocational education was considered by



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scientists as an educational phenomenon successfully adapted to the conditions of the market economy.

Dual education can be imagined as a "pedagogical activity that ensures the formation of individual knowledge and skills of students in their professional fields in professional training activities" [4]. In this case, direct practice plays the main role. LV Sidakova admits that the dual education system is "an educational system that involves the combination of educational activities of an educational institution with the activities of production enterprises" [5]. The dual education system of training specialists can be considered as "an education system aimed at training specialists who will have the required level of qualification in a specific profession, clearly coordinated between the employers and production enterprises of higher professional education." [6,7].

Also, in a deeper analysis of local and foreign literature, it is possible to imagine the dual education system as an educational model in which theoretical training can be carried out in educational institutions, and practical training can be carried out in production enterprises [8-20].

It is known that the gap between theory and practice is one of the perennial problems of professional education. This problem has been solved in different ways at different times. Globally, the dual education system has proven its effectiveness in solving this problem. In the past of the Soviet Union, the professional personnel training system was created according to the principle of a system similar to the dual education system, and I must say that this system gave results and certain successes were achieved. However, it became known that this educational system has many shortcomings in meeting the requirements of the rapidly developing science and technology. The modern dual education system introduced in the Republic of Uzbekistan provides an opportunity to eliminate the gap between theory and practice.

Dual education is a form of training that combines theoretical training in an educational institution (30%-40% of training time) and practical training in a production enterprise (60-70% of training time).

The main principle of the dual education system is the equal responsibility of educational institutions and production enterprises for the quality of personnel training.



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The dual education system meets the interests of all parties participating in it - production enterprises and organizations, students, and the state:

- for the production enterprise - this is an opportunity to reduce costs for personnel training, search and selection of workers, their retraining and adaptation;
- for students - this is due to the fact that graduates adapt to the conditions of real production enterprises and have a high probability of successful employment in production enterprises of their specialty after graduation;
- a country that effectively solves the issue of training qualified personnel for the entire economy will also benefit from it.

The analysis of the literature on the problem of the use of dual education in foreign countries indicates that this system can be adapted to our educational system, and in this:

- 1) it is necessary to ensure close integration between educational institutions and enterprises;
- 2) in order to know exactly who and how many workers are needed, it is necessary to know in advance the need for workers of production enterprises;
- 3) it is necessary to develop adapted professional standards and create educational programs based on them;
- 4) it is necessary to ensure that theory and practice blocks are alternated during the entire educational process (for example, one week of theory and immediately two weeks of practice);
- 5) it is necessary to conduct career orientation work with students so that their choice of future profession is meaningful.

In order to successfully implement dual education in the higher education system, it is proposed to develop a dual education model based on cooperation between participants in the educational process.

The main elements of this model are:

- legal components;
- conceptual components;
- dual education implementation program for higher education organizations;
- personnel component.

Each of the proposed elements mutually acknowledges the other. In this case, the conceptual component is represented by technological, methodological, personal-



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resultative levels, mechanisms, and the activity of several conditions of the student's motivation for teaching.

The goals of introducing the "dual education model" are as follows:

- To increase the investment attractiveness of the regions, to improve the model of training of working personnel, taking into account the real needs of the economy for qualified personnel;
- Development of professional standards for business and related professions;
- Development and modernization of educational programs in accordance with the requirements of professional standards;
- Changing mandatory requirements for the organization and content of educational programs;
- Development of a mechanism for independent evaluation of workers' qualifications;
- Optimizing taxation to attract businesses to finance worker training.

The tasks of the organization of dual education are as follows:

- interlinking educational processes of educational institutions with the conditions of development in the enterprise (organization);
- organizing the practical part of education related to production in enterprises (organizations) and the theoretical and educational-practical part in Educational institutions by turning students into participants of labor activity;
- increasing the investment attractiveness of the regions and improving the training of middle-level personnel taking into account the real needs of the economy;
- development of conditions and models of mutual cooperation of enterprises (organizations) and educational institutions;
- formation of competencies by implementing educational programs in harmony with work;
- improving educational programs based on the requirements of employers and technological updates in them;
- financing the implementation of personnel training and educational programs;
- improvement of forms and methods of cross-industry cooperation between enterprises (organizations) and educational institutions;
- to further expand the participation of enterprises (organizations) in the assessment of graduates.



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In dual education, the university and the enterprise develop a special curriculum for the student, which is organically combined with the work program of the specialty. Work is underway on a plan to introduce a dual education system between the "Alternative Energy Sources" department of Karshi Institute of Engineering and Economics and the Kashkadarya branch of "**SUN-HIGHTECH**" LLC located in Karshi, Kashkadarya province.

It should be noted that "**SUN-HIGHTECH**" LLC is one of the leading organizations in the field of installation and operation of solar photoelectric plants in our country.

The dual education system is a form of network based on the mutual cooperation of the employing enterprises and the educational institution of the Karshi Institute of Engineering and Economics, i.e. based on the coordinated mutual cooperation of the Kashkadarya branch of "**SUN-HIGHTECH**" LLC, **located in the city of Karshi, Kashkadarya province.** it is assumed that it is a form of network.

Dual education includes a combination of theoretical and practical training, in which the student must master the basics of professional activity (theoretical part) at the Department of "Alternative Energy Sources" of the Karshi Institute of Engineering and Economics, which is considered a higher education institution, and training and the practical part of the project is carried out in the Kashkadarya branch of "**SUN-HIGHTECH**" LLC, located in the city of Karshi, which is the direct workplace. Of "**SUN-HIGHTECH**" LLC, located in Karshi, where professors and teachers of the "Alternative Energy Sources" department of the Karshi Institute of Engineering and Economics, are considered specific workplaces, include three main components:

- 1) educational, production (pedagogical) practice;
- 2) practical and laboratory training;
- 3) activities outside the auditorium (excursions, roundtable discussions, master classes).

Currently, Karshi Institute of Engineering and Economics 60711000 - Alternative energy sources (Solar and wind energy) majors are working to introduce elements of dual education for students.

Purpose: To increase the competitiveness of graduates with the quality of qualifications required in the modern economy, and to create a system of qualified personnel training that meets the needs of employers in terms of the number of graduates.



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Duties include:

- 1) training of graduates with high qualification level expected by employers;
- 2) increasing the investment attractiveness of the region;
- 3) attraction of investments in the educational system of higher education institutions.

Of **"SUN-HIGHTECH" LLC** located in Karshi , students of the institute, professors and teachers.

Documents: According to the decision of the Cabinet of Ministers of the Republic of Uzbekistan dated March 29, 2021 No. 163 "On measures to organize dual education in the professional education system", the procedure for organizing dual education in the professional education system is correct. Regulation on **of "SUN-HIGHTECH" LLC** located in the city of Karshi, Kashkadarya province, and the "Alternative energy sources" department of the Karshi Institute of Engineering and Economics consists of two stages. prayer will be:

The first stage - the following regulatory, educational and methodological documents are developed on the dual education system of preparation for dual education at the "Alternative energy sources" department of the Karshi Institute of Engineering and Economics:

Agreements on providing dual education to students with the Karshi Institute of Engineering and Economics and the Kashkadarya branch of **"SUN-HIGHTECH" LLC located in Karshi;**

- conducting some types of dual education in the educational institution was additionally determined;
- 60711000 - Dual educational programs on the specialty of alternative energy sources (solar and wind energy) are developed, the programs are prepared in coordination with the Kashkadarya branch of **"SUN-HIGHTECH" LLC ;** a training plan will be developed in agreement with the Kashkadarya branch of **"SUN-HIGHTECH" LLC** by specialty ;
- dual education plans and schedules are agreed with the base educational institution;
- a plan of measures to ensure the educational process will be drawn up within the framework of the introduction of dual education;
- The Regulation "On the organization and conduct of dual education in production enterprises" is prepared and approved;



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- contracts on dual education are developed and preparations are made for concluding contracts with students.

In the second stage - the stage of implementation of dual education programs, based on approved schedules, dual education of 3rd-4th year students is carried out, practical training is carried out directly and in different types of internships in employing enterprises or organizations. is carried out by "tash".

Practice within dual education elements is organized by professional modules. After the practice types are completed, differential tests are conducted. Defense of practice results becomes an integral part of the (qualifying) exam. Social partners will have the opportunity to participate in the evaluation of the quality of the training of specialists by participating in the examinations (qualifications) held on the studied modules, by participating in the state final certification with the awarding of qualifications in the specialty.

Students of higher education institutions do internships in production enterprises, so employers at this stage form their opinions about the knowledge and skills that students of higher education institutions acquire in the process of theoretical education. At the same time, during the internship, students will have the opportunity to get acquainted with the working procedure, conditions and economic opportunities of the enterprise or organization.

Professors and teachers of special subjects will also have the opportunity to practice in the enterprises of social partners, as well as participate in master classes, seminars, various competitions, as a result of which they will increase their qualification level and learn the technological capabilities of new modern equipment. they will be able to know and master them.

Conclusion

Thus, the following conclusions can be drawn regarding the process of transition to the dual education system:

- higher education institutions significantly strengthen the practical component of the educational process, while maintaining the level of theoretical training that ensures the implementation of the requirements of the state educational standard;
- production enterprises help to solve the problem of training specialists who are fully ready for work. It increases the professional mobility of graduates and their competitiveness in the labor market;



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- relations between the activities of higher educational institutions and production enterprises will be strengthened. Thanks to the dual education system, it will be possible to achieve real training efficiency to meet the specific needs of production. Due to the application of the dual education system to the educational process, it is possible to combine the interests of business - youth - the state and bringing tripartite partnership relations to a completely new stage will be achieved.

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