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# The Method Of Training Engineering Personnel In The Field Of Alternative Energy Through The Dual Education System

**Kodirov Ismail Norkobilovich**
Karshi engineering economics institute

**Abstract.** In the Decree of the President of the Republic of Uzbekistan No. 08.10.2019 No. PF-5847 on approving the concept of development of the higher education system of the Republic of Uzbekistan until 2030: "The priority way of systematic reform of higher education in the Republic of Uzbekistan defining directions, raising the process of training highly qualified personnel with modern knowledge and high spiritual and moral qualities to a new level in terms of quality, modernization of higher education, social sphere and economy based on advanced educational technologies the priority tasks of development of branches are defined. This article provides thoughts and reflections on the practical application of dual education.

***Key words:*** *dual education system, "duality", higher education institutions, production enterprises.*

## INTRODUCTION

Turning science into the main driver of the economy as the main condition for the implementation of these tasks and training competitive specialists based on market requirements are among the urgent tasks of the day. The education system of the head of our country is public and private. This is the goal behind the idea of partnership development. The principle of cooperation in education was put into practice by the Karshi engineering economics institute, one of the first in the higher education system of our country. In this regard, as a close partner, agreements on "targeted training of specialists, mutual cooperation in educational-scientific and marketing spheres" have been formed, on the basis of which theory acquisition serves to apply knowledge in practice. In this way, a solid foundation for partnership-based cooperation of the parties is created. [1].






It is known that adapting the educational process in higher education institutions to the needs of the modern economy as much as possible is one of the urgent issues in solving the problems of the development of our Republic. It is being prepared here In order for our engineering personnel in the field of alternative energy to acquire the necessary skills directly in production enterprises, as well as to change their fields of activity based on the needs of the times, business and educational institutions have entered into extremely large-scale cooperation mechanisms to have is the demand of the times.

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 educational system of training specialists can be considered as "an educational 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 domestic 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 [8,9,10].

Dual education is a product of close cooperation between educational institutions and employers for successful professional and social adjustment of the future specialist. At the initial stages of the educational process, the student is included in the production process as an employee of the enterprise who, according to his functional duties, manages the allocated resources, assumes service responsibilities, acquires professional skills and, in certain cases, receives a salary. [11-16].

If we pay attention to history, the roots of the dual education system in the history of the beginning of vocational education in personnel training go back to the activities of craftsmen in the Middle Ages. In this case, the future craftsman enters the workshop as an apprentice-student, whose task is to observe the work of the master craftsman and repeat his actions. After successful training with an apprentice master, he becomes a substitute apprentice to a master craftsman, but before he can work independently or open his own workshop, he must pass an examination for master craftsman status, and which, in turn, required other craftsmen to prepare for further apprenticeships and pass an "examination" to them as well.

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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.

The introduction of dual education in any educational institution involves a complex preparatory process in the transition from the traditional form of education to the additional education system. This transition requires a change in society's self-awareness and readiness to accept new norms determined by the needs and demands of modern society, which is ready for its development and self-improvement.

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.

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.

## MATERIALS AND METHODS

Taking into account the theoretical and methodological, psychological and philosophical foundations, the professional training of specialists in the

conditions of dual training is considered. It is appropriate to focus on four main components :

1. Motivational (achieving success; motivation to study; job satisfaction level, interest in scientific activity through rationalization proposals).
2. Organizational and management component (manifestation of leadership potential; communicative qualities; organizational characteristics).
3. Cognitive (acquiring knowledge in professional activity ; independence in acquiring knowledge).
4. Scientific component (the level of participation in scientific purposes; the direction of practical innovative projects for solving enterprise problems).

## RESULTS AND DISCUSSION

**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:

- conducting some types of dual education in the educational institution was additionally established;

– 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 private company **"KARSHI SOLAR PANELS"** ;

a training plan will be developed in agreement with the private firm **" KARSHI SOLAR PANELS "** 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 second stage** - based on the schedules approved at the stage of implementation of dual education programs 3 - Dual education of students of 4th year is carried out, and practical training is carried out directly and through various internships in employing companies or organizations.

Practice within dual education elements is organized by professional modules. After the practice rounds, 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 (qualification) exams held on the studied modules, participate in the final state attestation with the

awarding of qualifications in the specialty, and participate in the evaluation of the quality of the training of specialists.

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.

## CONCLUSIONS

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 activity;
- increases the professional mobility of graduates and their competitiveness in the labor market ;
- 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 it is possible to bring the tripartite partnership relations to a completely new stage.
- the use of the dual education system in the educational process serves as a basis for the training of qualified energy engineer personnel for production enterprises according to the current demand.






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