

INTRODUCTION OF THE DUAL SYSTEM IN TECHNICAL EDUCATION AND ITS SIGNIFICANCE IN THE LEARNING PROCESS

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ABSTRACT

The article discusses the introduction of the dual system in higher technical education, its importance in the learning process, as well as the continuity and interrelation of curricula and programs of dual education, integration processes in the education of educational institutions and enterprises, and ensuring interdisciplinary connections.

Keywords: Education, dual education, learning process, integration, interdisciplinary connections, curricula, curricula, lesson, students.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

In our republic, the new model of personnel training provides for the unification and monolithicity of technical education with the production process. As a result, there was a need to revise the concepts of the content of education and its organization. Today, one of the main problems is the creation of a scientifically based system of complete formation of students' professional knowledge, skills and qualifications at the level of requirements of industry education standards through comprehensive integration between educational institutions and manufacturing enterprises, that is, the introduction of dual education. Also, one of the main tasks is to ensure compliance with the requirements of enterprises, continuity and interrelation of curricula of vocational and technical education with curricula for the implementation of programs of special subjects.

Since there is such an urgent problem in higher educational institutions of our republic, which consists of ensuring the continuity and succession of professional engineering training, it means that the time has come to solve it, based on the requirements of continuous education and scientifically and practically substantiated proposals.

Our primary research shows that training based on successive subject programs with the introduction of dual education, increasing the education of students, allows us to achieve positive results in developing their ability to work independently, learning practical skills. Another pressing issue in today's system of higher and secondary specialized education is - ensuring the continuity of educational literature on special subjects.

In technical education, it is possible to achieve successful mastery of students' subjects by ensuring cooperation between educational institutions and manufacturing enterprises. And also, the introduction of new practical technologies into the learning process in conjunction with training based on successive curricula, which will ensure the guaranteed achievement of educational goals [4].

One of the most significant advantages of achieving and implementing dual education, continuity in the education system is to ensure continuity between subjects and different stages of education, its integration. That is why this task is one of the main issues today [3]. According to researchers, the introduction of dual education between educational institutions and enterprises will allow not to repeat topics, to master a large volume of material in a small amount of time, and therefore, to save time, and also contains organizational tasks. If we take into account the information above, the profitability of training will also increase. Dual education, when systematically and purposefully implemented, acts as a didactic principle, as a principle for constructing a didactic system.

Dual education to a certain extent resolves the existing contradiction in the subject system of education between the disparate acquisition of knowledge by students and the need to synthesize complex application in practice, work activity and human life. The main thing is the ability to establish connections between concepts and laws studied in classes on various subjects. However, the existing subject principle of knowledge distribution does not allow to fully implement a systematic approach in education without violating or blurring the boundaries of established subjects. The principle of interdisciplinary connections is even more important, allowing to comprehensively reveal multi-aspect objects of educational knowledge and complex problems of our time.

To date, a significant number of studies have been conducted on this problem, revealing individual aspects of dual education in the training of specialists. The organization of the work of the teaching staff on the problem of interdisciplinary connections includes two main and interrelated areas: planning the educational process taking into account interdisciplinary connections; implementation of joint educational and methodological work of teachers of related subjects to implement interdisciplinary connections.

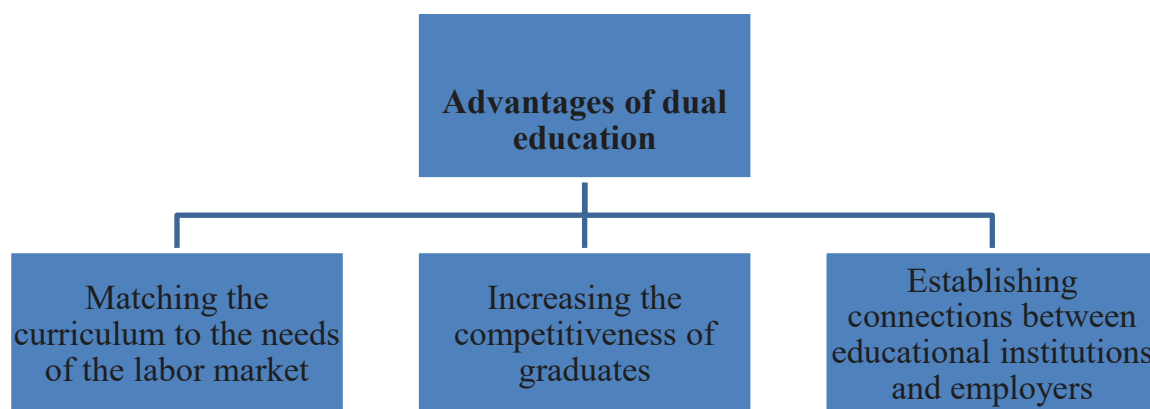


Fig. 1. Advantages of dual education

Now let's look at the advantages of dual education (Fig.1):

- ✓ compliance of the curriculum with the needs of the labor market;
- ✓ increasing the competitiveness of graduates;
- ✓ establishing connections between educational institutions and employers.

When planning dual education, first of all, the issues that are reflected in the programs for related subjects are provided. In this case, the connections between subjects can be: synchronous, prospective, retrospective. However, the connections between subjects are not always reflected in the programs and are not immediately visible, they need to be thought out and specially introduced into training in order to master the system of knowledge and form a scientific worldview.

The classification of methodological techniques for implementing interdisciplinary connections is subject to the general principle of dividing methods that organize:

- ✓ interdisciplinary search cognitive activity;
- ✓ reproduction of knowledge from other subjects and contributing to the solution of interdisciplinary problems;
- ✓ auxiliary [8].

Dual education between a higher educational institution and an enterprise is a necessary didactic tool aimed at forming a system of generalized professional knowledge and skills based on the implementation in the educational process of an objectively existing relationship between various academic disciplines using a certain system of educational work methods.

The stages of implementation of dual education are considered below in Figure 2.

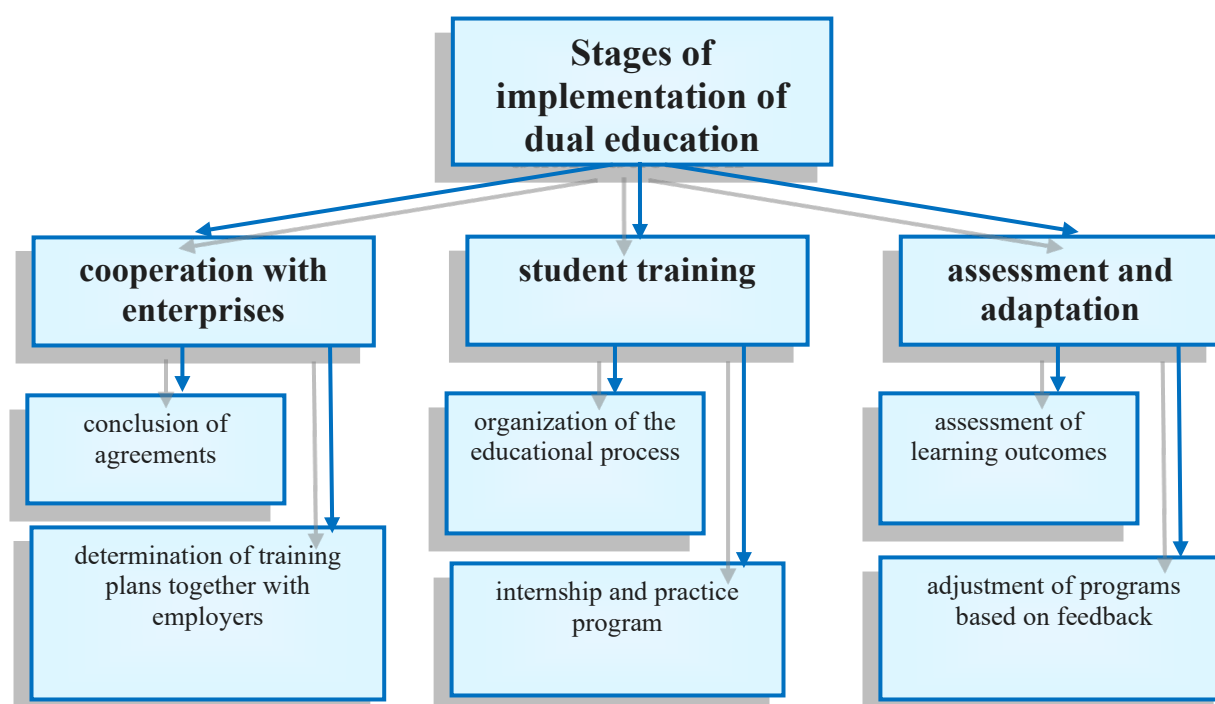


Fig.2. Stages of implementation of dual education

The stages of implementation of dual education are:

1. Cooperation with enterprises:
 - ✓ conclusion of agreements;
 - ✓ determination of training plans together with employers.
2. Student training:
 - ✓ organization of the educational process;
 - ✓ internship and internship program.
3. Assessment and adaptation:
 - ✓ assessment of learning outcomes;
 - ✓ adjustment of programs depending on feedback.

Integration of academic subjects is possible if the following conditions are met:

- the objects of study in the integrated academic subjects must coincide;
- the same (or similar) research methods must be used [5].

Integration processes between general and vocational education and directly in technical education itself activate the development of continuity of their content by ensuring:

- development of a system of multi-level professional training and creation of educational programs that ensure the interconnection and continuity of the content of technical education at all its levels, the accessibility of their mastering;
- continuous development, socialization and professionalization of the specialist's personality.

Continuity of content, from the position of end-to-end continuity of all levels and stages of education, as well as taking into account independent assimilation of knowledge, determines the formation of logical consistency and mobility of multi-aspect and multi-level educational programs that take into account the needs of the individual for the accessibility of education in different periods of his life. The content of educational programs acquires special functional significance in terms of general and professional socialization of the individual, as well as within the framework of his/her self-education [2]. Another of the current problems of continuity in the organization of technical training is the management of interdisciplinary connections, the search for those fundamental provisions on the basis of which the didactic correspondence of programs of interrelated disciplines should be established. Along with this, it is necessary to develop forms, techniques and methods for implementing connections between related subjects in the process of their teaching [6].

The essence of the principle of continuity is that the previous development of the individual is interconnected with its subsequent development. The depth and completeness of the acquisition of new knowledge and skills depend on how strong and versatile the connections are with the existing knowledge and skills.

At the same time, continuity in the "school-college-university" system is accepted by us as a system-forming principle that contributes to the development of the educational process, i.e. the organization of the following connections in it:

- connections of interdependence that determine the consistency of the goals, content and methods of teaching, development and education with the educational material and educational activities, individual capabilities for assimilation and their results;
- connections of interaction between teachers and students carried out in planning, organizing and solving current problems of educational activities;
- feedback taking into account the difference between the goals of teaching, development and education and their results, creating the basis for the analysis of stage achievements and difficulties, both for students and teachers;
- dual education is realized in the links between science and art, intertwining artistic search with research work, which generates concepts embodied in figurative form [7].

As a pattern of development, continuity is characterized, if not at a high level, then by a kind of return to the old, a repetition at a higher level of some aspects of previous stages.

Study of the properties of interdisciplinary relationships from a pedagogical point of view: the teacher gets acquainted with the subjects that are most interesting to the student, with the effectiveness of some aspects of the relationship of pedagogical prospects, traditions between the school and production enterprises, between the relationship of parents with educational institutions.

In our opinion, the factors of continuity that contribute to the organization of students' educational activities are the following:

- the factor of adaptation of students to the conditions of the new course depends on the organization of educational activities, which takes into account the development of the capabilities of students;

- the factor of the sequence of knowledge is considered from the side of the connections of new knowledge with the old, and the systematization of skills from the side of certain periodic educational activities;

- the factor of individualization of the formation of constructive-graphic skills assumes the flexible use by the teacher of various methods and forms, taking into account the individual characteristics of each in achieving their optimal results; the factor of activation of educational activity in the formation of constructive-graphic skills is associated with the methodological organization of educational material, in particular, with the need to identify in it a system of “supports” as the basis for activating the receptive actions of students.

Thus, the introduction of the dual system in technical education affects the quality of education, the content of educational programs of continuous education, it is advisable to consider from the position of the theory of integration of content at the interdisciplinary level. This approach determines the construction of a prognostic model of continuity of the content of continuous technical education, taking into account the life and technical experience of the individual.

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