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## **Project technology as a means of forming key competencies in the educational process**

The modern system of education has its goals not only in the training of specialists with the necessary professional skills and knowledge, but also the development of the abilities for creative thinking and inculcation of institution for continuous learning and self-education. Such rethinking of the requirements for higher and secondary education is due to the crisis of technical education in Kazakhstan in the whole world, due to increase in the science intensity of industrial technologies. The article is devoted to one of the ways of achieving this goal, using of the project method in the educational process. The work analyzes the goals and objectives of the project activity, its place in the educational process and the problems of implementing project training in higher and secondary schools. Even in foreign countries, which have many years of experience in the use of educational technology project, there is a considerable amount of methodological problems which follows from the literature review of the work presented.

*Keywords:* education, project activities, creative thinking, method, teaching methods, project methods.

The modernization of education currently under way significantly affects the organization of the entire educational process, since it is characterized by complex, contradictory tendencies, can't be autonomous, and is largely influenced by a number of factors that can make significant adjustments to the final outcome of the implemented activities, which are largely due to the growing importance of the desire to gain ideological support and to ensure the conditions for a radical reconstruction adequate to the global and national socio-cultural needs [1]. Consequently, one of the main tasks of improving the system of school education is to create conditions for the education of highly educated, ethical, enterprising people, capable of cooperation, having mobility, dynamism and constructiveness, that is, formation a competitive personality with a developed sense of responsibility for the destiny of the country. The above qualities of a person are certainly related, although they are formed in different ways and methods, at different ages and certain conditions. Some of them should be formed at school, others in the university, but only if the student is systematically included in independent cognitive activity [2].

To ensure the implementation of these goals is the improvement of the educational process at school based on the harmonious integration of traditional and innovative technologies, creation and development of unified information educational environment, with wide application of active teaching methods. The active (activity-oriented and reflective) creative side of the teaching is actualized with the innovative training organization. Innovative technologies are called active, since the instructor, instead of the informer, acts as a guide, and the information itself is not the goal, but only a means for mastering the actions. Interactive methods of teaching are of particular urgency that promote the development of the individual in the process of free and creative activity, which includes the purpose, motive, methods, conditions, result.

In modern pedagogy there is a rather rich arsenal of interactive approaches, among which one can single out the technology of projects. This technology is based on the ideas of free education of the American philosopher and teacher J. Dewey, as well as his pupil V.H. Kilpatrick, who offered to build training through the activities of the student, considering his personal interest in precisely this direction of knowledge. At the moment, the project method is an integrated component of the education system and aims to provide students with the opportunity to acquire knowledge independently in the process of solving practical problems or problems requiring the integration of knowledge from different subject areas. This pedagogical technology assumes a set of methods (research, search, problem) for the development of reflex thinking, the essence of which lies in the constant search, analysis, verification of the facts and, as a result, the provision of the product for public discussion. As a rule, most often, the final result of the project activity is the participation of students in scientific and practical conferences and competitions. Among the advantages of this technology is the provision of an opportunity for an average child to reveal his unrealized potential at practically any stage of educational activity at school and when studying almost any part of the academic discipline. At the same time, a participant in such an intellectual competition acquires the skills of certain communicative skills, de-

velops perseverance, learns self-control that much needed qualities to implement and present his research in a contest or conference.

In accordance with the dominant method underlying the project, we distinguish between creative, adventure-game, information and practice-research. In the senior classes, in our opinion, practical-research projects are more applicable. They have a well thought out structure that almost coincides with the structure of real scientific research.

The introduction of the project method into education is not a new or revolutionary idea. However, in the past few decades, project practice has become a generally accepted learning strategy only in countries with a western model of education. There, the method of projects received strong support at schools, after the scientists confirmed what the teachers had known for a long time: pupils are more actively involved in training if they have the opportunity to delve into the solution of difficult, difficult and sometimes confusing problems, which are closely related to real life.

The project method goes further than simply to arouse students' interest. A well-organized project encourages students to engage in active research and thinking at a high level. The studies of the brain underline the value of such training [3]. The ability of students to learn new knowledge increases when the area of cognition is related to activity in solving the content problem, when students are helped to understand why, when and how these facts and skills can be significant [4].

The project method is a learning model that involves the student in the process of solving complex problems. This process is completed in the real material - the product of the project. Projects to support learning opportunities can be built on different teaching materials and can be developed for students of all ages. However, all projects share common features. Projects are based on such questions, the answers to which can't be obtained by simply memorizing the educational material. Projects put the student in an active position - a person who explores, solves problems, makes decisions, studies, and documents his activities. The project activity serves as a separate very meaningful learning objective, and should not be considered simply an addition and addition to the «real» training course.

The research carried out during the project suggests students the forms of activity that can satisfy their curiosity about the world around them. In the context of education, the term «research» has a more specific meaning. Teachers who use research strategies in teaching are usually encouraging students to raise questions, plan and set up experiments, conduct observations and consider the results. However, there is no complete definition for the term «research». Even within one class, research activities can vary significantly from a more structured and managed teacher, to a more open and driven interest of students [5].

It may be useful to reflect on the method of projects as a subsection of research training. Review of research on teaching method of projects shows that such projects are aimed at addressing these problems that encourage students to take part in the study of the basic concepts and principles of a discipline. Moreover, the main activity in the project involves research and creation of new knowledge by students. Usually when developing projects, students have a choice and this allows them to defend their interests and satisfy their curiosity. In the search for answers to their questions, students can explore topics not indicated by the teacher as learning goals.

The project method provides numerous advantages for both students and teachers.

An increasing number of academic studies show that the use of the project method encourages students, reduces absenteeism, gives impetus to the joint study and improves performance [6].

For students, the advantages of the project method include:

- Increase of attendance, height of independence and improvement of attitude toward studies.
- The success rate of such students is comparable and even higher than those who study in other forms of education, as students in the project method feel more responsible for their own learning than with standard types of schooling.
- Ability to develop complex skills such as high-level thinking skills, problem-solving skills, collaborative activities and communication.
- Access to more wide choice of possibilities for educating, due to strategy of bringing in to the prosecution of project of people with cultural distinctions.

For many students, the attractiveness of the project learning strategy is related to the reality of the experience gained. Pupils perform the actions of specialists working in the field of a specific discipline. When they make a documentary video on environmental protection, they create a publication that emphasizes the historical importance of their local community, develop a multimedia presentation about the pros and cons of building a supermarket, students participate in real activities that go beyond the school [7].

For teachers, the additional benefits of project activities are associated with the growth of professionalism and additional opportunities for cooperation with colleagues, as well as with the opportunities for building new relationships with students. In addition, many teachers are happy to find a learning model that takes into account different learning styles and introduces new learning opportunities. Teachers find that often students who are not able to effectively learn in the framework of the traditional model of learning receive additional benefits within the framework of the project form.

The features of the method of project training include the following:

- The task has no ready answer.
- The atmosphere of tolerance for mistakes and changes.
- Students take decisions within the framework of the educational project.
- Students independently develop ways to solve the problem.
- Students have the opportunity to think about their actions.
- The estimation of activity takes place constantly.

For students who are accustomed to the traditional model of education, the project method means the transition from the execution of instructions to self-regulated learning activity; from memorization and repetition to discoveries, associations and representations; from listening and responding to communication and responsibility; from knowledge of facts, terms and content to understanding processes; from theory to application of theory; from dependence on teachers to obtaining independent powers.

Teachers starting to use the project method in their classes should develop a new learning strategy if they want to succeed. The role of the conductor and assistant is not the role to which most of the teachers are ready, this is not the way of the activity to which they were taught [8].

Methods of the direct educating are based on textbooks, lectures and traditional assessments, do not work well in the multi-valued, interdisciplinary world of project teaching. In this world, the teacher helps more than tells. They should not be afraid that in the course of working on the project the students will make mistakes. During the implementation of projects, teachers themselves learn together with their students.

The specific difficulties encountered by teachers in the process of project training:

- recognition of situations and features that help to develop good projects;
- structuring problems as opportunities for learning;
- interaction with colleagues for the development of interdisciplinary projects;
- management of the learning process;
- inclusion of suitable information technologies;
- development of informative forms of evaluation.

At the beginning of the work, teachers should be prepared to take the risk of experiencing unforeseeable difficulties. Administrative support can be expressed in creating a more flexible work schedule, group planning and providing teachers with opportunities for professional development [1].

The main problems constraining the spread of the method of projects in general education institutions are the difficulty of coordinating project assignments with the requirements of educational standards [7]. Practically it is not possible to formulate project tasks so that it is possible to use stereotyped knowledge, skills, skills (more precisely, in order to make them necessary) when students perform these tasks. However, it is this technology that allows us to find a reasonable balance between academic knowledge and pragmatic skills, since it is oriented towards the independent activity of students, the performance of the project requires creators, not just the reproduction of information, prompting them to design their skills in the information space, but it always contains a greater or lesser element of obscurity, hence, gives the opportunity to find their own «right» decision, based on his personal experience and the experience of his friend, allows to create a foundation for cooperation, teaching, communication of all participants of the educational process, including the teacher.

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### **Жобалау технологиясы — білім беру үдерісіндегі негізгі құзыреттіліктерді қалыптастыру құралы**

Мақалада заманауи білім беру жүйесінің мақсаты қажетті кәсіби дағды мен білімді меңгерген маманды даярлау ғана емес, сонымен қатар оқушылардың сыни ойлау қабілетін ашу және үздіксіз білім алу мен өзін-өзі дамытуға баулу болып табылады. Жоғары және орта білім беру жүйесіне осындай талаптарды қайта ойлау өнеркәсіптік технологиядағы ғылыми сыйымдылықтың бірден артуы, Қазақстандағы сияқты, барлық әлемде де техникалық білім берудегі дағдарыспен байланыстырылды. Авторлар мақсатқа жету жолдарының біріне, яғни, оқу үрдісінде жобалап оқыту әдісін пайдалануға арналған. Жұмыста жобалап оқыту технологиясының мақсаты мен міндеттері, оның оқу процесіндегі орны мен орта және жоғары мектептерде жобалап оқытуды енгізу мәселелері талданған. Білім беруде жобалап оқыту технологиясын қолдану бойынша жылдар бойы жинаған тәжірибесі бар алыс шетелдегі елдерде айтарлықтай көлемде әдістемелік кемшіліктердің бар екенін байқатты, оны ұсынылған жұмыстың әдеби шолуынан байқауға болады.

*Кілт сөздер:* білім беру, жобалап оқыту, сыни ойлау, жобалау әдісі, білім беру технологиясы.

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### **Проектная технология как средство формирования ключевых компетенций в ходе учебного процесса**

Представленная работа посвящена анализу современной системы образования в плане её соответствия поставленной перед ней цели не просто готовить специалистов, обладающих необходимыми профессиональными навыками и знаниями, но также раскрывать у учащихся способности к креативному мышлению и прививать установки на непрерывное обучение и самообразование. Показано, что кризис технического образования, как в Казахстане, так и во всем мире, обусловленный резким ростом наукоёмкости промышленных технологий, требует глубокого переосмысления требований к высшему и среднему образованию. В представленной статье рассматривается один из путей достижения означенной цели — использование метода проектов в учебном процессе. В работе анализируются цели и задачи проектной деятельности, её место в учебном процессе и проблемы внедрения проектного обучения в высшей и средней школе в свете сопоставления с опытом стран дальнего зарубежья, в которых имеется многолетний опыт использования проектной образовательной технологии.

*Ключевые слова:* образование, проектная деятельность, креативное мышление, метод, методы обучения, методы проекта.

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