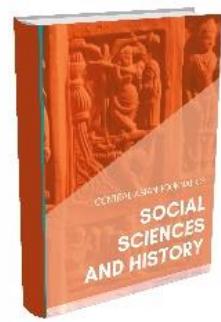




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Essence and Content of Project Educational Technology

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Abstract:

This article analyzes the project, the essence of project-based learning technology, its importance in the educational process, its advantages and disadvantages based on scientific sources.

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The pedagogical goal is considered as a pedagogical task at the stage of preparation for the organization of the pedagogical process. The success of pedagogical activity depends on understanding the essence of various tasks one after another*. In particular, it is important to clarify by type the pedagogical general (general for pedagogical activity), dependent (clearly expressing the essence of a certain stage of the pedagogical process, i.e. the tasks of the stage taken separately), special (existing and emerging situations) tasks in preparing students for the profession is important focus on their readiness to perform. Because the timely understanding and implementation of these tasks creates the right approach to professional activity. It is known that it helps to explain the reasons for the activity of the educational process by fulfilling its goals and objectives, especially in an era when the methodology of teaching a particular subject cannot be imagined without a pedagogical field.

The problem of enhancing the educational activity of students was studied, comprehended, scientifically and theoretically substantiated by various researchers from the point of view of time and the world science of that time. Special studies were carried out on the problems of updating and

* Tolipov O'. Practical foundations of pedagogical technologies // Textbook. - Tashkent: Nauka, 2006. - 261 p. (107 p.)

changing the forms, methods and means of education improved over time, adapting them to the age and individual characteristics of the student, creating special pedagogical and psychological conditions for learning.

In particular, G.N.Ibragimova, analyzing studies related to the development of the theory of education and the activity of personal cognition, notes that today in pedagogy one can see a number of learning models, namely:

1. Passive model of learning - within the framework of this model, students act as an object of the learning process.

2. Active learning model - in this process, students act as an object of the learning process. In the process of assimilation of educational information, they are widely engaged in independent work and performing creative tasks.

3. Interactive learning model - this learning process is carried out on the basis of regular active relationships and joint actions of students. In this process, the student and professor-teacher are equal subjects of the educational process[†].

In subsequent years, as a result of the above studies, a number of teaching principles were developed (continuity, individualization and differentiation, modularity, variability, reflexivity, scientific and methodological observation, selectivity, integrativity), aimed at developing the conscious activity of participants in education, cognitive development in it, especially foreign methodology, approaches (competent, innovative, creative, student-oriented, communicative, cognitive, etc.), types of learning (problem-based learning, personal, research, active, project-based learning, etc.) are successfully implemented in practice, and teaching opens up new stages of development.

Project-Based Learning is a transformative approach to the classroom, designed with real world problems in mind, that delivers deep learning through active learning[‡]. According to Yasseri Dar, Finlay M. Patrick, E. Blaine, W. David et al., PBL provides concrete evidence or shows a fluid way of acquiring knowledge by asking questions, posing problems, suggesting your scenarios, based on an active learning style based on learning and requests, as opposed to using paper, memorization, and teacher-led instructions[§].

John Larmer, John Mergendoller, and Susie Boss argue that project-based learning is a powerful learning approach that, when implemented, has:

- encourages students to learn;
- prepares schoolchildren and students for higher education, profession, setting points of professional growth (planning of an individual professional trajectory), socially active citizenship;

[†] Ibragimova G.N. Development of students' creative abilities based on interactive teaching methods and technologies: Ped. sciences ... (Doctor of Philosophy) diss. - Tashkent, 2017. - 168 p. (pp. 16-17)

[‡] Project-Based Learning, Edutopia, March 14, 2016.

[§] Yasseri, Dar; Finley, Patrick M.; Mayfield, Blayne E.; Davis, David W.; Thompson, Penny; Vogler, Jane S. (2018-06-01). "The hard work of soft skills: augmenting the project-based learning experience with interdisciplinary teamwork". *Instructional Science*. 46 (3): 457–488.

- helps pupils and students to perform well tasks that require the manifestation of deep knowledge and thinking skills (in our opinion, to fulfill the social order of the teacher);
- enables teachers to teach more satisfactorily;
- provides educational organizations with new ways to communicate and connect not only with parents, other communities, but with the whole world**.

Thomas Markham: "PBL combines knowledge and action, students acquire the necessary knowledge, skills and competencies within the framework of the studied curriculum and, as a result, apply the acquired knowledge to solve real life problems and achieve meaningful results. PBL focuses learning on the student rather than the curriculum, uses digital tools to co-create high-quality products, and rewards students with intangible benefits such as global development, creativity, emotional stability, resilience, and empathy that are in demand in today's world. Of course, they cannot be taught outside of textbooks, they must be activated through experience," he explains††.

"<https://www.pblworks.org>", organized by the Buck Institute for Education, which prepares students for the real realities of their profession and provides methodological support to teachers based on project-based learning electronic platform, as a result of studying, observing, analyzing the work carried out by the teacher, "project implementation", aimed at its specific instructions and diagnosis, and real events of professional life, achieved or created product, presentation necessary for other use in practice, a comparative table has been improved that reflects different aspects of the concepts of "project learning" (Table 1).

Table 1. Comparison table of project implementation and project-based learning content

Execution of the finished project	Project based learning
It will be done in a short time	Long-term (week, month or semester)
A device that activates the traditional program, included as a supplement to the instruction manual.	Project based on integrated management (the main unit is the project)
Based on a direction strictly defined by the teacher	At the suggestion and request of students
Focuses on the diagnosed result (product).	Based on the result (product) and learning and learning in the process
In many cases, this is not related to the required standards and skills.	In line with academic standards and skills for success
Sometimes this can be done in a group, sometimes individually in a classroom or at home.	It is carried out in interaction with students, and also includes instructions given by the teacher based on the situation in the class during the implementation of the project.
Stays in the classroom or the school world	Content (context) and application required for the real world are created
The final result of the project will be shown in the audience or in the classroom	The results of the project will be presented to the class and the appropriate audience.

** Larmer, John. Setting the standard for project based learning: a proven approach to rigorous classroom instruction // John Larmer, John Mergendoller, Suzie Boss. pages cm Includes bibliographical references and index. ISBN 978-1-4166-2033-4.

†† Markham, T. (2011). Project-Based Learning. Teacher Librarian, 39(2), 38-42.

The following definition can also be found on this e-platform: Project-based learning is a method in which learners work over an extended period of time to learn about and answer an authentic, engaging, and challenging question, problem, or issue. By this method they will have knowledge and skills.

According to research trainer Terry Hake on his blog (Teach Thought), there are three types of project-based learning. The first is challenge-based/problem-based learning, the second is place-based learning, and the third is activity-based learning (considering activity-based learning). Task-based learning is an engaging, interdisciplinary approach to teaching and learning that encourages students to use technology in their daily lives to find solutions to real-life problems through efforts at home, school, and the community. According to the scientist, if any project is focused on solving a specific problem and developing from it through a specific result, then it manifests itself as real project-based learning. Place-based or ethnicity-based learning immerses students in local heritage, culture, landscapes, opportunities and experiences and uses this type of learning as a foundation for language, math, social science and other subjects, thus emphasizing learning through the community by participation in local school or service projects. Activity-based learning is designed for more hands-on learning^{##}.

Researcher Lawrence Haywood, who supports project-based learning with students across disciplines at the school, says that students tackle a large project task step by step, with pauses in the process, which means that there can be small hiccups at each step. Each failure helps students learn about areas of ignorance, what they did wrong, and what actions they need to take to correct it. That is, project-based learning (PBL) is a natural process that creates repetitive application and learning to acquire basic knowledge in school. According to him, the class and students cannot be immediately transferred to project-based learning, for this the teacher can start from the smallest level, and then lead to large-scale, long-term projects^{##}.

The studies and analyzes carried out during the study, the hypothesis put forward in the work made it possible to form the author's definition of the concept of project-based learning technology:

Project-based learning - clarifying the pedagogical and psychological features of the development of creative thinking of future teachers, creating didactic opportunities, leading questions, continuous work, in-depth research, reliability, suggestion and choice, reflexivity, critical thinking - result-based technology.

The advantages or disadvantages inherent in optional theories, approaches and technologies used in pedagogical practice do not exclude project-based learning. Based on industry and personal research, a diagram is presented that outlines the essence, key elements, advantages and disadvantages of project-based learning (Table 2).

^{##} Terry Heick. <https://www.teachthought.com/project-based-learning>

^{##} Lawrence Haywood. <https://ahaslides.com/uz/blog/project-based-learning-examples-ideas>

Table 2. Essence, important elements, advantages and disadvantages of project-based learning

PROJECT-BASED LEARNING	
ESSENCE	<p>requirement of excellent knowledge and experience of project-based learning from the teacher;</p> <p>relying on the students' fundamental knowledge of science, encouraging them to master new ones;</p> <p>collaborative work on the study of real problems and the formation of skills in the process in accordance with the curriculum;</p> <p>stimulating, creative, achievable, maintainable, long-term;</p> <p>implemented in stages, aimed at directing students to the field of knowledge, skills and ignorance;</p> <p>help students, teachers, schools, educational organizations improve, systematize and evaluate their practice through project pedagogical practice;</p> <p>covering social order and standards-based content, as well as skills such as critical thinking, problem solving, communication, self-management, project management, and collaboration;</p> <p>determination of the subject or curriculum according to the level of assimilation, observation of the process leading from simple to complex in the context of classes;</p> <p>knowledge, understanding, teamwork, listening to others, substantiating one's opinion, responsibility, diligence, creating a chain of skills leading to success;</p> <p>be able to explain the need to create a product or make a presentation</p>
IMPORTANT ELEMENTS	<p><i>difficult problem or leading question</i> - creating a meaningful problem to be solved or a question to be answered;</p> <p><i>continuous, in-depth search</i> - participation in an extended process of asking questions, finding resources and applying information;</p> <p><i>authenticity</i> - the inclusion of real world context, tasks, tools, standards, interactions, personal concerns, interests and concerns;</p> <p><i>student proposal and choice</i> - making some decisions on the project, analyzing them, checking their implementation, creating, expressing one's opinion;</p> <p><i>reflection</i> - reflections on the effectiveness of educational, research and project activities, the quality of students' work, emerging obstacles and strategies to overcome them;</p> <p><i>criticism and revision</i> - providing mutual feedback, consultation with the teacher and improvement of existing processes and products;</p> <p><i>public product (presentation)</i> - to make your project public by sharing it with others, explaining it or making it available to everyone.</p>
ADVANTAGES	<p>promotes student-centered learning and supports lifelong learning;</p> <p>activates cognitive processes representing thinking, memory, perception, imagination, attention, speech;</p>

	<p>expands cognitive abilities, such as receiving, understanding, storing in memory, turning into knowledge, processing, transferring;</p> <p>teaches critical thinking (design, evaluation, analysis, judgment, prioritization, etc.), problem solving, teamwork;</p> <p>leads to the creation of quality work more than the memorization of information;</p> <p>different from other teaching methods that promote critical thinking;</p> <p>be guided by leading questions;</p> <p>combines knowledge, skills and various other successful skills of the 21st century;</p> <p>flexible and authentic, motivating and fun for students;</p> <p>it puts all participants in the same field, loosens the shackles of the mind, gives creative freedom, creates an opportunity for advanced and non-advanced students to work on a self-stimulating project.</p> <p>promotes communication skills, teamwork, feeling like an integral part of it, value attitude, effective interaction;</p> <p>gives students the opportunity to choose the method of mastering educational material (knowledge);</p> <p>the evaluation of the results achieved is based on well-defined criteria.</p>
DISADVANTAGES	<p>it takes a long period of time to achieve the goals;</p> <p>there are difficulties in designing the process (adaptation to the level of knowledge of students, creation of authentic tasks, etc.);</p> <p>sometimes there is a subjective assessment of the product;</p> <p>that it cannot be used uniformly in all classes, especially in elementary grades;</p> <p>loss of scheduled time, inefficient use of time by pupils and students.</p>

The experience inherent in project-based learning helps future teachers avoid problems that may arise when using knowledge, and creative thinking when using knowledge, allows us to evaluate it as a positive pedagogical phenomenon with efficiency and effectiveness.

Generally:

- project-based learning requires coverage of the entire process (learning goal, plan, content, forms, means, class schedule, advisory activities, monitoring, evaluation) of starting a project, defining a specific problem, understanding the direction means that you can go beyond the boundaries of "technology" and see in terms of "type of educational practice".
- the role of the teacher changes, he supports the learning process (in the classroom and outside the classroom) as an assistant, consultant, coordinator, feedback, does not give ready-made knowledge, asks students various questions, activates, leads to the improvement of the project through constant monitoring, analysis, redirection;
- that the educational material represents real situations typical for professional (educational, life) activities, is aimed at studying, understanding, analyzing, understanding the problem, fully mastering it, at building self-confidence in future teachers, develops skills to strengthen, take responsibility successfully solve complex (arbitrary) tasks;

- the priority of team work is that the student develops social flexibility and communication skills based on expressing his opinion, reasoning, listening to others, expressing a constructive attitude, respect for collective conclusions.

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