

The Use of Project Based Learning in Teaching Process

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Abstract--*The article analyses the role of project based learning(PBL) in teaching process. The main goal of the projectbased learning is the realization students' abilities and personal potential. The main fundamental principle of the project based learningis directly related to the current practical and spiritual needs of the students. The project based learningis a flexible model for the organization of the educational process, focused on the development of students and their self-realization in activities. It promotes the development of observation and the desire to find explanations for their observations, teaches to ask questions and find answers to them, and then checks the correctness of his answers, analyzing information, conducting experiments and research. Project technology is a training system in which students acquire knowledge and skills in the process of planning and completing gradually complicated practical tasks - projects. The technology of projects is always focused on the active independent work of students (individual, paired and group), which they perform over a certain period of time.The subject is a special quality of the individual. An individual becomes a subject of activity when he begins to become aware of himself, his goals, interests, ideals, and on this basis to develop a well-known program of action, he consciously takes a certain position. The subjective nature of project activity determines the development of the student's personal potential.*

The idea of the object of activity is formed on the basis of complex cognitive activity. Cognitive activity leads to the creation of a holistic image - from vague, blurry ideas to clear ones. From stage to stage, the sequence of technological processes is concretized, their uniqueness and at the same time universality are recognized, which contributes to the holistic perception of the technological picture of the world, gradually becoming more complicated, the project activity forms an idea of the role and place of the student in this activity.

Key words--*person, knowledge, principle, project based learning, training, self-motivated, student, project.*

I. INTRODUCTION

Project based learning is indirect, and not only the results are valuable in it, but also the process itself to a greater extent. Project-based learning stimulates students for learning themselves, because it: is personally oriented; uses many didactic approaches; self-motivated, which means an increase in interest and involvement in the work as it is completed; allows us to learn from our own experience and the experience of others in a particular case; brings pleasure to students using the product of their labor.

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The fundamentals of the theory and practice of the application of project training are developed in the works of P.P. Blonsky, B.V. Ignatiev, N.N. Jordanian, P.F. Kaptereva, N.V. Matyash, P.R. Polyakova, V.V. Rubtsova, V.D. Simonenko, Yu.L. Khotuntseva, V.N. Shulgin and others.

According to scientists, it is not advisable to transfer the entire educational process to project training.

II. MATERIALS AND METHODS

The purpose of project training: to create the conditions under which students acquire missing knowledge from various sources; learn to use acquired knowledge to solve cognitive and practical problems; develop communicative skills; students work in various groups (teams); they develop research skills (identifying problems, collecting information, observing, conducting an experiment, analyzing hypotheses, generalizing); developing systemic thinking, attention, imagination and memory.

The basis of project based learning are ideas about the need for: the formation of project thinking; ensuring the integrity of the pedagogical process; creating conditions for self-education; maintaining a positive motivation for self-education of students; the formation of skills and orientation in the information and educational space; self-constructing their knowledge.

The technology of projects always involves the solution of a problem, on the one hand, the use of various teaching methods and means, and on the other, the use of integrated knowledge, skills from various fields of science, engineering, technology and creative areas.

III. DISCUSSIONS

The initial theoretical provisions for project training are: in the center of attention - the student, promoting the development of his creative abilities; the pedagogical process is built in the logic of activity, which has a personal meaning for the student, which increases his motivation in learning; the individual pace of work on the project ensures that each student reaches their own level of development; an integrated approach to the development of educational projects contributes to the balanced development of the basic physiological and mental functions of the student; deep conscious assimilation of basic knowledge is provided due to their universal use in different situations.

3.1. Distinctive features of the project technology

According to K. Frey, is that the project participants: pick up the project initiative from someone in life; agree with each other on the form of training; Develop a project initiative and bring it to the attention of all; organize themselves into business; inform each other about the progress of work; enter into a discussion. [4]

The essence of the concept of "project training for students" is associated with such scientific concepts and categories as "project", "project activity", "method of creative projects", "project situation", "creativity", etc.

A project is understood as an independently developed and manufactured product (service) - from an idea to its implementation. Project activity is activity aimed at the implementation of projects. [7]

By K.M. To Cantor, the project is a manifestation of the creative activity of the human consciousness, "through which in the culture an active transition is made from non-being to being." The author attaches great importance to the project as a specific form of consciousness, constituting any labor process.

According to S.V. Mitrokhin, the project is a mental anticipation, prediction of what will be embodied in the form of an object, service, creative act or action.

According to L.S. Kiseleva, T.A. Danilina, the project is a method of pedagogically organized development of a student's environment.

3.2. Types of projects

In pedagogical practice, various types of projects are used. Consider their classification.

1. According to the degree of student participation in the project: personal, paired and group.
2. Projects based on the dominant activities of students: practice-oriented (from the manual to the package of recommendations for restoring something); research (research of any problem according to all the rules of scientific research); informational (collection and processing of information on a significant problem for the purpose of presentation to a wide audience - article, information on the Internet); creative (the most free author's approach to solving the problem).
3. In terms of complexity, projects can be monoprosjects and intersubject. Monoprosjects are implemented within the framework of one academic discipline or one field of knowledge. Interdisciplinary are carried out during extracurricular time under the guidance of specialists from different fields of knowledge.
4. According to the duration of the project, they distinguish: mini-projects - fit into one lesson or even part of it; short-term, weekly, requiring 30-40 hours to complete the project. A combination of classroom and extracurricular forms of work is expected.
5. By the nature of project coordination: direct (rigid and flexible), hidden (implicit, imitating a project participant)

In practice, most often we have to deal with mixed types of projects.

When the project is completed, the following is indicated: problem; goals and objectives of the project; educational material that is supposed to be used to solve this problem (literature); theoretical and practical significance in any field of knowledge; separately should be indicated what goals of intellectual, moral, cultural development of students are set; project deadlines; composition of the group; the procedure for processing project results.

Completed projects are publicly discussed, protected by students and end as the different types of presentations (scientific report, business game, video demonstration, etc.). In order to assess the work, first of all, should be the quality of the work as a whole, and not just the presentation. The quality of the project should be based on external expertise. The position of the teacher should be open, giving scope to the independence of students.

The ability to use the project method is an indicator of the teacher's high qualifications, his progressive teaching and development methods.

3.3. The process of creating a project

The process of creating a project is called design. Pedagogical design is a preliminary development of the main details of the upcoming activities of students and teachers.

The design situation is an integral part of the design activity, characterizing its condition at a certain time and in a certain space.

According to N.V. Matyash, project activity is an integrative activity that synthesizes the elements of game, cognitive, value-orientational, transformative, educational, communicative, and most importantly, creative activity. Project activities of students are closely related to the problem of creativity, is creative, in fact. Based on this, N.V. Matyash claims that the creative design activity of students is the activity of creating products and services that have objective or subjective novelty, have personal or social significance. [3]

Project activity is an integrated type of activity that provides coordination of various aspects of the learning process - substantive, procedural, communicative and others, synthesizing the elements of game, cognitive, transformative, professional and labor, communicative, educational, theoretical and practical activities.

The project activity of students carries the properties of activity in general and therefore has the main features and structure of human activity.

The project method is a didactic means of enhancing cognitive activity, the development of creativity and at the same time the formation of certain personal qualities. The method of projects is based on the cognitive activity of the student, the problematization of educational material, the relationship of learning with the student's life experience, and the organization of learning as an activity (J. Dewey). Using this method allows us to move away from the authoritarian teaching style and reorient students' work towards independence, the priority of research, search, and creative activities.

Work on the project is a rather complicated process. The hardest part for a teacher is to maintain the role of an independent consultant. The role of students in learning is changing: they are active participants in the process. The success of the project depends on the competent planning and organization of the student and teacher in their close cooperation. To achieve maximum efficiency of design work, it is necessary to clearly plan all stages of the project. [2]

Different sources differently classify the stages of work on a training project.

L. L. Rozanov identifies the following stages of project activity:

1. Organizational and preparatory (choosing a topic; defining project objectives; finding a problem; drawing up a preliminary plan; identifying participants, methods, methods of research; mastery of terminology).
2. Search and research (development of a research program; collection and study of necessary information; direct research based on the use of observation methods, experiment, analysis and synthesis).

3. Reporting and design (preparation of the name of the research project; presentation of the project).
4. Information and presentation (project protection; self-assessment and evaluation of projects).

V.V. Nikolina offers the following stages of work on the project:

1. Value-oriented (awareness of the motive and purpose of the activity, the definition of the project's intent).
2. Constructive (actually designing).
3. Evaluative-reflective (self-assessment of activity).
4. Presentative (project protection).

E.S. Polat considers the following stages of developing the structure of the project and its implementation.

1. Presentation of situations that allow to identify one or more problems on the topic under discussion.
2. Nomination of hypotheses for solving the problem ("brainstorming"), discussion and justification of each of the hypotheses.
3. Discussion of methods for testing accepted hypotheses in small groups (in each group one hypothesis), possible sources of information to test the hypothesis put forward; presentation of the results.
4. Work in groups to search for results, arguments, confirming or refuting the hypothesis.
5. Protection of projects (hypotheses for solving the problem) of each of the groups with opposition from all those present.
6. Identification of new problems.[9]

In foreign methodological literature one can also find various definitions of the stages of project activity.

D.L. Friday Bus has described three phases of a project:

1. Planning.
2. Implementation of the project.
3. Creating the final product.[4]

N.Yu. Pakhomova identifies the following stages of work on the project:

1. immersion in the project;
2. organization of activities;
3. implementation of activities;
4. presentation of the results. [8]

IV. CONCLUSION

Thus, the project method is a method of searching, creativity, solving certain didactic problems. For students, this is a way to express them, to show their knowledge. In project activities, it should be noted that the main role is played by the teacher, who guides the students in the right direction. Many different classifications of stages of project activities are considered. One classification of the stages of project activities complements another. But a more acceptable classification is given by N.Yu. Pakhomova [5,6]. In this classification, all stages of project activities are disclosed in detail, such as immersion in the project, organization of activities, implementation of

activities, presentation. Using the project method increases the likelihood of students developing creatively; the combination of theory and practice naturally occurs, which makes the theory more interesting and more real; the activity of students develops, which leads them to greater independence; a sense of social responsibility is being strengthened, and, among other things, students in the class experience true joy. In working on a project, a teacher must fulfill a number of basic requirements. He should be a leader, and a specialist, and an enthusiast, and a coordinator, i.e. plays several roles in this work. The teacher must have a high level of general culture, a set of creative abilities.

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