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H. M. Protsyk

ORCID ID 0000-0003-0928-636X

Ternopil Volodymyr Hnatiuk National Pedagogical University

PROJECT METHOD: PAST AND FUTURE

Г. М. Процик

Тернопільський національний педагогічний університет

імені Володимира Гнатюка

МЕТОД ПРОЄКТІВ: МИНУЛЕ І МАЙБУТНЄ

Abstract. The issues of the "project method" in the context of the past and the prospects for further use in the educational process have been considered. It has been suggested the interpretation of the terms "project", "method", "project method" based on the generalization of definitions of many researchers. It has also been found out that a project is a comprehensive way of exploring different topics as while working on one main topic, others, which are no less important, are identified in the course of the activity and in-depth study of the issue. It has been indicated the effectiveness of the “project method”, its dependence on the level of preparation due to the subject of study since the participants must possess certain skills and experience for its implementation. The main stages of the project-based learning process are outlined. It has been highlighted the role of the teacher in project training. It is emphasized that the teacher performs contemplative and directing functions while executing the project, and his main goal is to create a working atmosphere that is comfortable for all participants. It is noted that the project method, like any other method used in the educational process, has both advantages and disadvantages. The information about the founder of William Kilpatrick's "project method" is given. It has been emphasized that W. Kilpatrick suggested organizing the educational process as an appropriate activity in the social environment, focused on the enrichment of individual experience. Information on "smart cards" and their relation to the "project method" is presented. It has been stated the essence of reference schemes, which allow to cover a certain issue in the most complete way, help in memorizing, supplementing,

associating, visualizing information. It is supposed that the application of this method allows to unite children, learn how to work in a team, develop the ability to express their opinions, formulate a willingness to take different approaches to one topic

Keywords: project, method, critical thinking, learning effectiveness, educational technology.

Анотація. Розглянуто питання «методу проєктів» в контексті минулого та перспектив подальшого його застосування в навчальному процесі. Подано трактування термінів «проєкт», «метод», «метод проєктів» на основі узагальнення визначень багатьох учених. З'ясовано, що проєкт є способом комплексного вивчення тієї чи іншої теми, оскільки опрацьовуючи одну основну тему, інші, що є не менш важливими, визначаються в процесі діяльності та глибшого дослідження цього питання. Вказано на ефективність «методу проєктів», її залежність від рівня підготовки суб'єкта навчання, оскільки він має володіти певними вміннями і навичками для його реалізації. Наведено основні етапи процесу навчання за методом проєктів. Висвітлено роль викладача у проєктному навчанні. Акцентовано, що вчитель при виконанні учнями проєкту здійснює споглядаючу і скеровуючи функції, а головна його мета – створити робочу атмосферу, комфортну для всіх учасників. Зазначено що, метод проектів як і будь-який інший метод, який застосовується в навчальному процесі має і переваги, і недоліки. Наведено інформацію про основоположника «методу проєктів» Вільяма Кілпатрика. Наголошено, що В. Кілпатрик пропонував організовувати навчальний процес як відповідну діяльність дитини в соціальному середовищі, орієнтовану на збагачення її індивідуального досвіду. Представлено інформацію щодо «інтелектуальних карт», їхнього зв'язку з «методом проєктів». Розкрито суть опорних схем, що дають змогу найповніше висвітлити певне питання, допомагають у запам'ятовуванні, доповненні, асоціюванні, візуалізації інформації. Зазначено, що застосування цього методу дає змогу згуртувати дітей, навчитись

працювати в команді, виробити вміння висловлювати свою думку, сформулювати готовність сприймати різні підходи до однієї теми.

Ключові слова: проєкт, метод, критичне мислення, переваги та недоліки, ефективність навчання, освітня технологія, роль учителя.

Introduction. In the XXI century there is an urgent necessity to reform the education system in Ukraine. At the present stage of gaining a degree it is not only the acquisition of knowledge, the development of skills and abilities, it is also the development of cognitive potential, the formation of creative personality, training the ability to analyze, synthesize, make decisions. Taking this into account pedagogical science is constantly searching for new effective teaching technologies that will allow to transfer a large amount of educational material in non-standard, cognitive and innovative forms. Nowadays the amount of information to study is so large that it is quite difficult to process it by traditional methods.

Person-developing learning technologies are the main methods of innovation, in particular: the project method, intelligence cards, case technologies, contextual learning, etc. One of the methods that triggers the activities of the participants, mobilizes knowledge, gives the opportunity for creativity, search and analysis, is the project method.

Project technologies in the educational process are the key point in the works of V. Huzeeva, I. Yermakova, H. Selevko, O. Piekhota, E. Polat and others. Classifications of educational technologies are characterized in the studies of O. Kozlova, I. Podlasy, L. Mashkina. Problems of educational technologies were studied by S. Honcharenko, V. Palamarchuk. The essence of the project activity process in education is studied in the works of O. Kobernik, T. Podobedova, I. Konovalchuk. Well-known Ukrainian educators, specialists in the field of didactics O. Ya. Savchenko and V.I. Lozova explore the issues of problem teaching, holistic approach to the formation of an active personality, the development of cognitive autonomy, methods of using problematic tasks to test knowledge.

The objective of the article is to find out the effectiveness of using the project method in the educational process, to identify the main stages of the learning process by this method, to analyze its main advantages and disadvantages.

The theoretical part. Educational design cannot be called a new technology. The project method as an educational technology was formed in the 20s of XX century. At first it was called the "method of problems". This method was based on the idea of constructing learning process on an active basis, through the expedient activity of the student, in relation to his personal interest in acquiring knowledge [5].

This method was developed by the American philosopher J. Dewey and his student W. Kilpatrick. William Kilpartick is an American educator, founder of the project method, a supporter of pragmatic pedagogy. The scientist did not approve of traditional teaching methods, based on the transfer of ready-made knowledge out of touch with the real needs of children. W. Kilpatrick suggested organizing the educational process as an appropriate activity in the social environment, focused on enriching his individual experience.

Typical forms of activity in educational projects are the following ones: group discussion, "brainstorming", "round table discussions". Working in this format, it is advisable to use mental cards, intelligence cards, associative cards, etc. All these terms denote a way of fixing the thought process. The essence of the schemes is to address a particular issue completely. Smart cards help you remember, connect, complement, associate, visualize information. Such cards can be drawn by hand in block diagrams, using special programs or graphic editors. There are many options, but there is one thing: the fullest possible disclosure of a particular issue. You can apply this method in any field of activity. This is due to the fact that the intellect card method is first and foremost a method, a tool. Smart cards contain and record, memorize, merge, and visualize information. The mapmaking process simulates the behavior of neurons in the thinking process when the connections between them are activated. The leading idea of memory cards is to display just such a "natural" (natural) style of thinking.

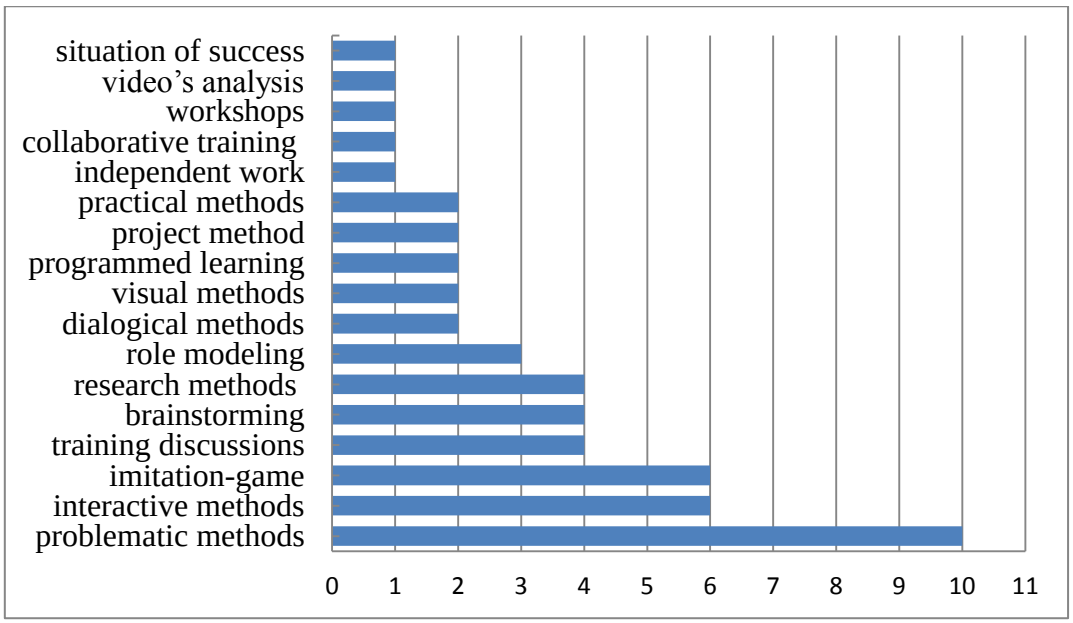
As the opinion of experts is important for the analysis of statistics, we were asked questions by experts in the field of pedagogy, namely, doctors of pedagogical sciences, about the effectiveness of various methods for the development of cognitive activity of students. The question was: "What are the most effective methods for developing cognitive activity of students?" It was attended by 16 respondents.

According to experts, in terms of efficiency of application of methods, (*see Fig. 1*) the first place is taken by the problematic methods (10), the second place - imitation-game (6) and interactive methods (6), the third place is occupied by the research methods (4), brainstorming (4) and training discussions (4), the following ranks are gained by the role modeling (3), practical methods (2), project method (2), programmed learning (2), visual (2), dialogical methods (2). By answering the question, the experts had options to choose from and an opportunity to supplement the list with their own method, form, or mode of action, which is relevant and effective in activating students' cognitive activity .

In addition to these methods, experts point out that it is advisable to use the method of success situation, analysis of video materials, trainings for the development of cognitive activity of students. Group work, cooperative learning and independent work are integral components of the cognitive activity development, autonomy and self-sufficiency of the individual. After all, in order to activate cognitive activity it is necessary to use a number of exercises, methods, situations and means, since there is no single method to accomplish this goal.

It should be noted the importance of creation a novelty situation while using a particular method to develop students' cognitive activity as everything that is new always arouses interest and desire to explore. Relying on one's own life experience is a significant factor that can positively influence the effectiveness of cognitive activity of participants in the educational process, because having previous knowledge and experience, and at the same time gaining new knowledge give more opportunity to compare, analyze, comprehend and draw conclusions.

Fig. 1. Methods of development of cognitive activity of students



Considering the evaluation of the project method by individual researchers B. Vulfson believed that it was a process of studying a certain material with the acquisition of skills and then designing on the basis of the acquired knowledge of projects [2].

O. Piekhota regards the project as a targeted act of activity based on the interests of the child [7]. In summary, it can be argued that a project is a process of searching, exploring certain information to achieve certain goals.

S. Honcharenko defined the term "method" as a way of organizing the practical and theoretical development of reality, conditioned by the laws of the object under consideration [3]. The term "project method" in Greek means "a path, way to explore." A. Hutorskyy interprets the concept of "teaching method" as a way of joint activity of the student and the teacher aimed at achieving the learning goals [10].

S. Honcharenko defined the term "project method" as the organization of training, where students acquire knowledge and skills in the process of planning and performing practical tasks i.e. projects [3].

O. Piekhota believes that instructional design is focused primarily on the independent activity of participants (individual, in pairs or in a group) which they perform for a certain period of time. Design technology involves solving a problem by a student or group [5].

T. Belyavtseva states that one of the tasks of the project method is the formation and development of students' cognitive activity, the ability to acquire new knowledge and combine them into a single system independently [1].

It is advisable to use the project method to cope with a specific problem that requires the integration of different methods, teaching aids, knowledge and skills from different fields of science.

The use of the project method increases the effectiveness of learning. It makes cross-curricular connections, since it is impossible to elaborate on a topic in a single subject. The application of this method also allows to unite children, learn to work in a team, develop the ability to express their opinions, form a willingness to take different approaches to one topic.

O. Piekhota notes that the implementation of the project is a practice of personally-oriented learning in the process of directed activity based on his free choice and taking into account his own interests. According to the scientist, this is realised in the following way: "Everything I know, I know what I need it for and where I can apply this knowledge" [5].

Participants should be aware of the purpose of their activities and develop a plan of follow-up to accomplish the main tasks. The problem under study should be interesting, arise from real life, based on the knowledge of the researcher. The project method is effective when a specific task is identified in the learning process: research or creative.

Having determined the main purpose of the efficiency of the project activity and the quality of the organization of the project activity, it is necessary to distinguish its types.

There are some features that should be taken for grounds for classification of the projects proposed by E. Polat:

- dominant activity (research, creative, search, role, applied (practically oriented), familiarization oriented);

- subject-component industry (mono-project (within one branch of knowledge), cross-curricular project);

- the nature of coordination (direct (rigid, flexible), hidden (implicit, imitating project participant));

- the nature of contacts (internal (among participants of one school, class, city), international);

- the number of participants (individual, doubles, group);

- duration (short-term, medium-term, long-term) [8].

It is necessary to highlight the importance of the sequence of stages definition and the structuring of activities in the design of the lessons (several lessons) in project technology. Studying the researches of scientists who have analyzed project technology of learning and its application in the educational process (H. Selevko, O. Piekhota, L. Maksymchuk, E. Polat, A. Khutorskyy), we can distinguish the following basic stages of learning by the method of projects:

- define the direction and choose the topic of the future project (outline directions of activity on a theme, to define a circle of researched questions);

- structure and detail the project (discuss the relevance, significance, purpose and objectives; determine sub-topics and number of participants, terms of implementation; to distribute the responsibilities of participants at different stages of project implementation (designate responsible persons); make forecasting of expected results; calculate the budget and resources that can be spent to implement the design);

- think of a way to present the results (oral presentation or slides, posters, booklets, etc.);

- final stage - discuss the results (in the form of discussion, comments, tips).

The goals for project implementation can be different: acquisition of additional knowledge, acquisition of analysis skills, learning to make decisions and take responsibility for their results, developing the ability to apply theoretical knowledge on the subject in practice, developing positive relationships in the student team, etc. The more invisible is the role of the teacher in the project implementation process, the more professional efforts are made at the preparatory stage. The teacher-mentor, while performing the project, the students carry out contemplative and directing

functions, and its main purpose is to create a working atmosphere that is comfortable for all participants.

Investigating the advantages and disadvantages of project-based work-based learning technology (T. Belyavtseva, I. Dyachenko, A. Khutorskyy, E. Polat), we note that, like any other method used in the educational process, the application has advantages , and disadvantages, i.e. strengths and weaknesses.

The advantages of this method are the following ones: formation of research and analytical skills; development of cognitive activity; teaming up students, learning to work in a team to achieve a common result, developing communication skills, listening, tolerant attitude to different points of view; learning to use information, time, resources rationally; learning to process information, to choose meaningfully; development of ability to determine the purpose, relevance, tasks; developing the ability to predict the final result.

The disadvantages of the method of project researchers include a long stage of preparation (choosing a topic, developing a detailed plan, careful selection of research material, setting time limits); the complexity of controlling the implementation process; unequal distribution of tasks between group members; think of ways to prevent overactivity of one participant and passivity of others.

Applying project technology in the learning process, the teacher should identify and consider both its advantages and disadvantages, as they will affect both the conduct and the final result of the project. In order to be effective in implementing the project, it is necessary to determine the level of knowledge and capabilities of the participants, the degree of their grouping and readiness for such activities, selects a good time when this method can be implemented (in advance).

Conclusions and prospects for further research. To crown it all in a nutshell, we conclude that the project method is an effective tool for improving the effectiveness of university education. This method allows to increase efficiency of training and education, to realize cross-curricular connections. Projects may be distinguished from each other by the level of cross-curricular communication, by the nature of the coordination of the implementation process, by the duration, purpose

and type of project activity. The effectiveness of the method also depends on the level of training the subjects, skills, creative and communicative abilities.

Analyzing the works of scientists who have studied design teaching technologies, it can be argued that these methods make it possible to form the necessary qualities of a specialist needed by modern society. An important feature of the project approach is humanism, attention and respect for the student, focusing efforts not only on learning, but also on the comprehensive development of the individual.

List of literature:

1. Бєлявцева Т., Лобас Т. Застосування методу проектів при формуванні пізнавальної активності учнів \ Відкритий урок: розробки, технології, досвід. 2004. № 5 – 6. С. 24 – 25.
2. Вульфсон Б., Дьюи Дж. Педагогика прагматизма \ Лидеры образования. 2004. № 3. С. 12 – 16.
3. Гончаренко С. Ц. Український педагогічний словник. Київ: Либідь, 1997. С. 205.
4. Дяченко І. Метод проектів: використання на уроках і позакласних заходах \ Профтехосвіта. 2017. № 4. С. 13 –19.
5. Пєхота О.М. та ін. Освітні технології : навч.-метод. Посіб. / за ред. О. М. Пєхоти. Київ: А. С. К., 2003. С. 148 – 150.
6. Педагогічний словник / за ред. М. Д. Ярмаченко. Київ: Педагогічна думка, 2001. С. 514.
7. Пєхота О. М. Освітні технології : навч.-метод. посіб. / Київ: А. С. К., 2001. 254 с.
8. Полат Е. С., Бухаркина М.Ю., Моисеева М.В., Петров А.Е. Новые педагогические и информационные технологии в системе образования : уч. пособ. / под ред. Е. С. Полат. – Москва: Изд. центр «Академия», 1999. С. 64 – 85.
9. Серватинська Н. Метод проектів як спосіб виховання в учнів особистісних навичок \ Сучасна школа України. 2017. № 1. С. 28 – 33.

10. Хуторский А. В. Современная дидактика : учеб. [для вузов]. Питер, 2001. С. 368 – 395.

References

1. Bieliavtseva T., Lobas T. (2004). Zastosuvannia metodu proektiv pry formuvanni piznavalnoi aktyvnosti uchniv [Application of project method in the formation of students' cognitive activity]. / Vidkrytyi urok: rozrobky, tekhnolohii, dosvid – Open lesson: development, technology, experience, 5 – 6, 24 – 25 [in Ukrainian].
2. Vulfson B. Dzh. Diuy (2004). Pedahohyka prahmatyzma [Pedagogy of pragmatism]. // Lyderы obrazovanyia – Education leaders, 3, 12 – 16 [in Russian].
3. Honcharenko S.U. (1997). Ukrainskyi pedahohichnyi slovnyk.[Ukrainian Pedagogical Dictionary]. Kyiv: Lybid, 205 [in Ukrainian].
4. Diachenko I. (2017). Metod proektiv: vykorystannia na urokakh i pozaklasnykh zakhodakh [Project Method: Using in lessons and extracurricular activities]. / Proftekhosvita – Vocational education, 4, 3 – 19 [in Ukrainian].
5. Piekhota O.M. ta in. (2003). Osvitni tekhnolohii : navch.-metod. posib. [Educational technologies: teaching-method. textbook]. / za red. O. M. Piekhoty – edited by O.M Piekhota, Kyiv: A. S. K., 4, 13 – 19 [in Ukrainian].
6. (2001). Pedahohichnyi slovnyk [Pedagogical dictionary]. / za red. M. D. Yarmachenko – edited by M. D. Yarmachenko, Kyiv: Pedahohichna dumka – Pedagogical thought, 514 [in Ukrainian].
7. Piekhota O. M. (2001). Osvitni tekhnolohii : navch.-metod. posib. [Educational technologies: teaching-method. textbook]. / Kyiv: A. S. K., 254 [in Ukrainian].
8. Polat E. S., Bukharkyna M.Yu., Moyseeva M.V., Petrov A.E. (1999). Novyye pedahohycheskye y ynformatsyonnye tekhnolohyy v systeme obrazovanyia: uch. posob. [New pedagogical and informational technologies in education system: textbook] / edited by E. S. Polat, Moscow: Yzd. tsentr «Akademyia» – Pub. Center «Academy», 64 – 85 [in Russian].

9. Servatynska N. (2017). Metod proektiv yak sposib vykhovannia v uchniv osobystisnykh navychok [Project method as a way of training in pupils personal skills]. / Suchasna shkola Ukrainy – Modern Ukrainian School, 1, 28 – 33 [in Ukrainian].
10. Khutorskyi A. V. (2001). Sovremennaia dydaktyka : ucheb. [dlia vuzov] [Modern didactics: textbook [for universities], Petersburg, 368 – 395 [in Russian].

e-mail – anya_protsik@ukr.net
phone – 0969595826