

EDUCATIONAL PROJECTS AS A MEANS OF A COMPREHENSIVE ASSESSMENT OF THE METHODOLOGICAL TRAINING OF FUTURE TEACHERS

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Abstract. *This article describes the experience of applying the method of educational projects in the process of forming the methodological training of future teachers.*

Key words: *higher education, project method, extracurricular activities.*

ОБРАЗОВАТЕЛЬНЫЕ ПРОЕКТЫ КАК СРЕДСТВО КОМПЛЕКСНОЙ ОЦЕНКИ МЕТОДИЧЕСКОЙ ПОДГОТОВКИ БУДУЩИХ УЧИТЕЛЕЙ

Аннотация. *В данной статье описан опыт применения метода учебных проектов в процессе формирования методической подготовки будущих учителей.*

Ключевые слова: *высшее образование, метод проектов, внеклассная работа.*

In the current conditions, the competitiveness of countries depends primarily on the level of education and science. The current development of the economy and society makes higher demands on the quality of professional training than ever before. The requirements for the compliance of an employee with a certain activity are regularly changed and strengthened. At the same time, not only professional knowledge, qualifications and skills are of particular importance, but also such qualities as logical thinking, initiative, activity, the ability to work in a group and in cooperation, awareness, etc. [1].

At all stages of the development of human civilization, the most expensive capital was knowledge, breadth of outlook, creativity and human talent.

In socio-economic progress, education, especially higher education, is seen as a major factor. The reason for the emergence of such attention is that a person remains the highest value and the main capital of modern society, he is able to seek and find new knowledge, change this knowledge and make non-standard decisions. Reforms in higher education in Uzbekistan have been raised to the rank of state policy; it is recognized that the development of higher education determines the future progress of the country. Within the framework of this policy, work is being carried out to increase the requirements for the quality of knowledge, update the functions of higher education in the direction of training not a “graduate”, but a “specialist”, the introduction of new pedagogical and information technologies, etc. [2,3].

The basis for the modernization of the education system in Uzbekistan is a change in the essence of the education system, its development based on the study and application of the best practices of developed countries, the use of new methods, advanced pedagogical technologies [4].

In higher education, the requirements for the training of qualified specialists with a certain amount of knowledge and skills have changed. Previously, students studied theory and then gradually learned to apply the acquired knowledge in practice. Now the need has increased for personnel who are able to immediately practically apply the acquired knowledge, who understand and are able to analyze innovative opportunities in their chosen field, quickly master innovations, and freely use information technologies. To find their place in the modern labor market, each university graduate must be a highly qualified specialist, not only knowing the secrets of his profession, but also able to competently solve economic and production issues, make the right decisions in organizing work, and give out new ideas [5].

To date, the system of higher education in the direction of training highly qualified personnel still has a number of urgent problems and shortcomings that need to be addressed, including: the content of the current qualification requirements, curricula and programs is not aimed at developing practical skills among graduates; the skills of critical thinking, independent search for information and analysis of students are not formed[6].

The solution of the tasks set for higher education largely depends on the organization of independent cognitive activity of students. In the practice of foreign countries, the main part of the student workload in mastering a subject is self-education in the form of educational projects, cases, and creative works [7].

The project method is not new in world pedagogy. It originated at the beginning of the last century in the United States, it was also called the problem method. J. Dewey proposed to build learning on an active basis, through the expedient activity of the student, in accordance with his personal interest in knowledge. Hence, it was important to show the children their personal interest in the acquired knowledge, which can and should be useful to them in the life. This requires a problem taken from real life, familiar and significant for the child, for the solution of which he needs to apply the acquired and new knowledge that has yet to be acquired. Over time, the idea of the project method has undergone some evolution. Born from the idea of free education, it is now becoming an integrated component of a fully developed and structured education system. But its essence remains the same - to stimulate students' interest in certain problems, involving the possession of a certain amount of knowledge and through project activities, providing for the solution of these problems, the ability to practically apply the acquired knowledge [8].

A specific feature of the project activity is its activating influence on the development of the creative orientation of the individual and ensuring the creative nature of the development of reality. Project activity, providing the student with a wide field of new activity for him, thereby contributes to the emergence of a wide range of interests. It is fully a personality-oriented activity, a significant means of developing the personality of the subject of learning [9].

As part of the methodological training of future teachers in pedagogical higher educational institutions, it is advisable to use the technology of educational projects in the framework of organizing independent work of students in the subjects "Theory and methods of teaching math", "Technologies and designing of teaching math" in the direction of the bachelor's degree "Mathematics and informatics" and within the framework of training "Modern technologies for teaching math in higher education" to undergraduates. Students show more creativity and creativity when completing an educational project on the topic "Extracurricular work in math".

The requirements of the math curriculum, textbooks and established teaching methods are designed for the so-called "average" student. However, already from the first grades, a sharp stratification of the group of students begins: into those who easily and with interest learn the program material in mathematics, into those who achieve only satisfactory results in the study of mathematics, and those for whom the successful study of mathematics is given with great difficulty. All this leads to the need for individualization of education, one of the forms of which is extracurricular work.

Extracurricular work in mathematics is understood as optional systematic classes of students with a teacher during extracurricular time. The program and the time available to the teacher do not always provide an opportunity to cover many important and interesting issues, so there is a need for extracurricular work in math.

Well-organized and systematically conducted extracurricular work allows you to develop logical thinking and mathematical skills, consolidate and deepen theoretical knowledge. Extracurricular activities also have a great educational value. It gives students an additional opportunity to learn how to work independently, prepare for a report, select materials, cultivate perseverance in overcoming difficulties, initiative, will, and ingenuity. Classes in a circle, preparation of a mathematical evening, mathematical tournaments, issues of a wall newspaper and other types of joint work contribute to fostering a sense of collectivism and internationalism [10].

Arousing students' interest in mathematical studies, the development of practical skills and mathematical outlook should be one of the tasks that students-designers of extracurricular activities set themselves.

Designing extra-curricular activities is of great benefit to student-future teachers. In order to design an extracurricular activity well, one has to constantly work on oneself, expand and deepen knowledge, follow the news of science. All this has a positive effect on the quality of methodological training of students [11].

Speaking about the organization of extracurricular activities, we, first of all, mean the following: development of an idea, planning, preparatory activities, monitoring, forecast. Conducting extracurricular activities in mathematics is directly a teaching process carried out in the classroom, their methodological support.

Organize project work effectively in small groups. Each small group designs one of the types of extracurricular work in math (work with students who are lagging behind others in studying program material (additional extracurricular activities), work with students who show increased interest and abilities in studying math compared to others (actually extracurricular work in the traditional sense of the term)).

Speaking about the first direction of extracurricular work, it should be noted that this type of extracurricular work with students in mathematics currently takes place in every educational institution. At the same time, an increase in the effectiveness of teaching mathematics should necessarily lead to a decrease in the value of additional educational work with those who are lagging behind. Its main goal is the timely elimination (and prevention) of gaps in students' knowledge and skills in the course of mathematics.

When evaluating such student projects, factors such as compliance with the following provisions related to the organization and conduct of extracurricular work with lagging behind are taken into account:

1. It is advisable to conduct additional (out-of-class) mathematics classes with small groups of lagging behind (3-4 people in each); these groups of learners should be reasonably homogeneous both in terms of the learners' knowledge gaps and learning abilities.

2. These classes should be individualized as much as possible (for instance, by offering each of these students a pre-prepared individual task and providing concrete assistance to each in the process of its implementation).

3. It is advisable to conduct classes with lagging behind no more than once a week, combining this form of classes with students' homework according to an individual plan.

4. After re-studying one or another section of mathematics in additional classes, it is necessary to conduct a final control with an assessment on the topic.

5. Additional classes in mathematics, as a rule, should have a teaching character; when conducting classes, it is useful to use the appropriate options for independent or control work from the "Didactic materials", as well as teaching aids (and tasks) of a programmed type.

6. A teacher of mathematics needs to constantly analyze the reasons for the lagging behind of individual students in their study of mathematics, to study the typical mistakes made by students in the study of a particular topic. This makes extra math classes more effective.

The second of the above areas of extracurricular work in mathematics - classes with students who show an increased interest in studying it, meets the following main goals that students should take into account when designing such classes:

1. Awakening and developing a sustainable interest of students in mathematics and its applications.

2. Expansion and deepening of students' knowledge of the program material.

3. Optimal development of mathematical abilities in students and instilling of students certain skills of a research nature.

4. Education of a high culture of mathematical thinking.

5. The development of students' ability to independently and creatively work with educational and popular science literature.

6. Expansion and deepening of students' ideas about the practical significance of mathematics in life.

7. Expansion and deepening of students' ideas about the cultural and historical value of mathematics.

8. Raising students a sense of collectivism and the ability to combine individual work with collective work.

9. Establishing closer business contacts between the teacher of mathematics and students and, on this basis, a deeper study of the cognitive interests and needs of students.

10. Creation of an asset capable of assisting a mathematics teacher in organizing effective teaching of mathematics to the entire team of a given group (assistance in the production of visual aids, classes with lagging behind, in promoting mathematical knowledge among other students).

It is assumed that the implementation of these goals is partially carried out in the classroom. However, in the course of classroom studies, limited by the scope of study time and program, this cannot be done with sufficient completeness. Therefore, the final and complete realization of these goals is transferred to extracurricular activities in mathematics of this type.

Since the main differences between extracurricular activities and traditional lessons are that the lesson is limited by the standard, curriculum, textbook, time frame, and the choice of topic, content, structure, duration of extracurricular activities largely belongs to the teacher and depends only on the individual characteristics of students attending these lessons. Thus, the design of extracurricular activities is a huge testing ground for the creativity of the teacher and for the future teacher.

If, when organizing work on a project in small groups, the goal is mutual assistance and mutual learning of students, then individual tasks for preparing projects for one of the following forms of extracurricular work makes it possible to objectively evaluate the theoretical and practical knowledge, skills and abilities of each student on which his methodological competence is based:

1. Mathematical circle.

2. Contests, quizzes.

3. Olympiads of math.
4. Mathematical discussions.
5. Week of math.
6. Mathematical printing.
7. Making math models.
8. Compilation of thematic collections

Thus, one of the effective technologies for preparing future teachers for pedagogical activity is the method of educational projects. Since the process of designing the educational and cognitive activity of students, especially in the form of extracurricular work, requires the student not only mathematical subject training, but also theoretical and methodological training in pedagogy, psychology, private methodology, computer science.

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