

METHODS OF TEACHING MATHEMATICS IN ACADEMIC LYCEUMS

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Abstract

Traditional academic lyceum classes include, as you know, lessons in learning new material, consolidating knowledge, skills and abilities, checking and accounting for acquired knowledge, skills and abilities, analyzing control papers, generalizing and systematizing what has been learned, repeating a topic or section. Along with these forms of education, non-traditional or non-standard ones have recently been widely used, thanks to which students learn program material faster and better.

Keywords: mathematics, teaching methods, pupil's talents, curriculum, educational process

The active introduction into the traditional educational process of various developmental classes specifically aimed at the development of the child's personal - motivational and analytical-synthetic spheres, memory, attention, spatial imagination and a number of other important mental functions, is in this regard one of the most important tasks of the teaching staff. It should also be noted that the playful, fascinating nature of the tasks, which are at the same time psychological tests, reduces the stress factor of checking the level of development, allows students with increased anxiety to demonstrate their true capabilities more fully. The introduction of non-traditional teaching methods into the academic lyceum curriculum aims to expand the educational process and, without breaking away from the problems of teaching and upbringing, develop the personal qualities of the child.

A non-standard lesson is an improvised training session with an unconventional (unspecified) structure. Their main goal is to arouse and retain the interest of students in academic work, their activation. The analysis of pedagogical literature allowed us to identify several dozen types of non-standard lessons. Their names give some idea of the goals, objectives, and methods of conducting such classes. Teachers have developed many methodological techniques, innovations, innovative approaches to conducting non-standard forms of classes. According to the form of conducting, some groups of non - standard lessons can be distinguished. Lessons on the game method significantly increase the interest of students in the subject, allow them to better remember the formulations, definitions.

A lesson is a flexible form of training organization. It includes a variety of content, according to which the necessary teaching methods and techniques are used. Frontal, collective and individual forms of educational work are organized at the lesson. Various forms of the lesson not only diversify the learning process, but also cause students satisfaction from the very process of work. A lesson cannot be interesting if a student is constantly involved in activities that are monotonous in structure and methodology. The framework of the traditional lesson is becoming tight, so new forms of learning organization are being born. An unconventional lesson is one of such forms of organization of education and upbringing of academic lyceum students. The effectiveness of non-traditional forms of learning and development is well known. Such classes bring academic lyceum education closer to life, to real reality. Students willingly join such classes, because they need to show not only their knowledge, but also ingenuity and creativity. With the help of non-traditional lessons, it is possible to solve the problem of differentiation of learning, organization of independent cognitive activity of students, physical experiment. Such lessons can be conducted in classes with a different bias, whether it is a humanities class or a physics and mathematics class. Depending on the orientation, you can choose methods that are effective for this particular class.

The introduction of non-traditional teaching methods into the academic lyceum curriculum aims to expand the educational process and, without breaking away from the problems of education and upbringing, develop the personal qualities of the child. Traditionally, the learning process is considered as a process of interaction between teachers and students, during which the tasks of education, upbringing and development are solved. The main structural components that reveal its essence include learning objectives, content, activities of teaching and learning, the nature of their interaction, principles, methods, forms of learning.

The formula for the effectiveness of the lesson consists of two components: thoroughness of preparation and skill of conducting. Therefore, it is necessary to follow the recommendations for conducting non-standard lessons, here are some of them:

- Non-standard lessons should be used as final ones when generalizing and consolidating students' knowledge, skills and abilities;
- Too frequent recourse to such forms of organization of the educational process is impractical, as this may lead to a loss of sustained interest in the subject and the learning process;
- An unconventional lesson should be preceded by careful preparation and, first of all, the development of a system of specific learning and upbringing goals;
- When choosing the forms of non-traditional lessons, the teacher must take into account the peculiarities of his character and temperament, the level of preparedness and the specific features of the class as a whole and individual students;

- To integrate the efforts of teachers in the preparation of joint lessons, it is advisable not only within the subjects of the natural and mathematical cycle, but also entering the subjects of the humanities cycle;

- When conducting non-standard lessons, be guided by the principle of "with students and for students", setting one of the main goals of educating students in an atmosphere of kindness, creativity, joy.

Thus, there are no ready-made methods for organizing non-standard forms. When preparing and conducting them, the teacher proceeds from the very concept. This concept is studied according to reference literature: rituals, customs, attributes and, based on this, a lesson is built.

For academic lyceum, profile differentiation is considered more characteristic. There are classes with in-depth study of subjects, and besides correction classes. The structure of students in simple classes is very heterogeneous: unlike specialized classes, where students are selected according to their capabilities, students who have different capabilities in relation to mathematics study in simple classes. It is impossible not to take into account both the cognitive interests and professional plans of the students studying. In each class there are students who mean to combine their own upcoming profession with mathematics (these are, as a rule, strong students studying for "4" and "5"), and there are students who are confident that they will not need mathematics in any way in their upcoming specialty. These students have the lowest grade in the field of mathematics. Special attention should be paid to taking into account abilities and interests when teaching academic lyceum students (aged 16-18 years), because, according to modern psychological and pedagogical theories, the development of the adolescent's personality type is completed directly in these years, the theory acquires a purposeful form, focused on successful graduation and selection of the upcoming specialty. However, at the present time, training in simple academic lyceum classes is carried out according to the previous concept, characteristic of a single, centralized academic lyceum, in coordination with which, it is aimed at a certain student. As a result of this kind of educational policy, a student is considered a passive participant in the educational process, which in turn leads to a drop in the degree of learning of students, which means that training becomes ineffective.

Such a state is in no way able to satisfy either teachers or educational leaders, much less the students themselves and their parents involved in effective learning.

One of the ways to increase the effectiveness of teaching in ordinary non-core classes is level differentiation. Without waiting for scientific developments, practical teachers introduce level-based training based on intuition, teacher experience, adapting existing textbooks and programs to the requirements of today in their own way.

The construction of a methodology for teaching mathematics in terms of level differentiation is complicated by the fact that this form of differentiated teaching, both theoretically and practically, is the least developed in our country. The study of

pedagogical literature allowed us to identify several types of non-standard lessons. Also, having considered the features of the organization of a non-standard lesson, we can conclude that such classes bring academic lyceum education closer to life, real reality, students willingly join such classes, showing not only their knowledge, but also ingenuity, creativity. Having described the experience of teachers on this problem, we can say that there are no ready-made methods for organizing a non-standard lesson. The sources of information are diverse: rituals, customs, attributes, games and more. Non-standard lessons, unusual in design, organization, and methodology, are more liked by students than training sessions with a strict structure and an established work schedule. Therefore, all teachers should practice such lessons. When planning an unconventional lesson, it is necessary to take into account the specifics of the class, the nature of the educational material.

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