AMERICAN JOURNALS
Open Access, Peer Reviewed Journals

American Journal of Pedagogical and Educational Research
ISSN (E): 2832-9791| Volume 33, | February - 2025

WAYS OF FORMING METHODOLOGICAL SUPPORT FOR THE PROCESS OF DEVELOPING VISUAL-MOTOR THINKING IN THE ACTIVITIES OF STUDENTS

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A B S T R A C T

The article provides some feedback on the use of didactic requirements and new pedagogical technologies in the organization of mathematics lessons in secondary schools. The didactic reuirements in learning classes are described. The results that can be achieved through the use of new pedagogical technologies are listed.

K E Y W O R D S

Mathematics, didactic requirements, pedagogical technologies.

Introduction

The independence of our society at the end of the 20th - beginning of the 21st century, the formation of relations based on a market economy, the emergence of the ideology of national independence, the revival of our language and culture, the sharp increase in the volume of information, the development of science and technology are among the necessary factors requiring a meaningful reform of this education, its main link, lesson. In methodological literature we often come across the expressions "Standard lesson", "Non-standard lesson", "Modern lesson". Here are the opinions of some scientists about the modern lesson. M.A. Daminov believes that "a modern lesson is the activation of the educational process". B.B. Shatalov believes that "a modern lesson teaches each and every student". Scientists and educators of Uzbekistan draw attention to the problems of modern education and show that "Modern education is, first of all, a set of methods that teach students to independently satisfy their educational needs". The teacher should not be the "Asker" and "Speaker" in the lesson, but should carefully help students in obtaining new knowledge. It should be noted that in modern lessons the tasks of the teacher and the students who are its participants have changed. If the teacher acts in the lesson as a leader, guide, director, manager, the student becomes an active participant in the lesson, he works independently, thinks and creates. In the discussion, his opinion is defended, self-management skills are formed.

Today, the rapid development of science requires the improvement of the activities of teachers and students, giving a new interpretation to lessons, increasing the effectiveness of education. It should be noted here that the book by Professor R. Dzhoraev "Modern Lesson" was published in the 1st issue for 2006 in the journal "Narodnoye Obrazovanie". Based on the results of scientific prohibitions, carried out in the article "How it should be", the achievements and shortcomings of today's lessons are discussed in detail, scientific research is carried out on the new organization of lessons and giving

them a new form, and it is also emphasized that the issue of maskur is one of the most pressing problems of our time.

Many pedagogical literatures contain scientific recommendations on hundreds of ways to achieve effective teaching. But their disadvantage is that the responsibility for the application of these methods lies primarily with the teacher. In non-standard lessons and interactive teaching methods, the student's personality is put in the center, while the teacher acts as the organizer and supplementer of the content, research. Let's touch on some interactive methods of non-standard lessons and teaching. Their content, the invention of new ones and increasing their effectiveness, of course, require all of us to search. Some pedagogical technologies have to be changed, supplemented and improved in the process of their application in educational activities. The pedagogical skill of the teacher plays an important role in this.

About didactic requirements. Now let us turn to the didactic requirements of the lesson. They are as follows.

1. Clearly define the educational goal of the lesson. In fact, each lesson should be carefully planned taking into account a specific goal. In this process, the teacher defines the educational goal of the lesson.
2. Enriching the topic of the lesson with interesting, scientific facts.
3. Achieve independent thinking of students on the essence of the lesson topic. If the student solves the problem based on his life experience, this will not only strengthen the student's thinking, but also make it remain firmly in his memory. Another psychological law involved in this process is the emotional aspect of thinking. If so, then when solving a problem situation, the student will independently feel interest, that is, a feeling of satisfaction from viewing the product of his work.

Such scientists as T.V.Kidyavtsev, I.Ya.Lerner, A.M.Matyushkin, M.I.Makhmutov proposed a problematic "research" method of teaching based on the psychological study of a problem situation and the process of making decisions aimed at finding a way out of the situation. This method of teaching makes the student look like a "discoverer", "researcher" and encourages him to solve the problem independently. Here, the role of the teacher is to systematically and purposefully organize the problem situation. He also poses the problem to students and provides assistance when necessary. This method is a new convenient method of acquiring knowledge and developing thinking. Because in this situation the student independently discovers something new. As a result, the student approaches the learning process creatively and with interest. The conducted research and pedagogical experience have proven that this method of teaching is effective. It has also been proven that elements of creativity are in the thinking of any student, albeit at a minimal level.

In the science of psychology, such a complex system of various methods has developed that with the help of this system, teachers have the opportunity to independently solve problematic situations in the educational activities of students and develop their creative thinking.

It should be noted here that problem-based learning does not contradict standard learning based on the principle of "information transfer". On the contrary, it legally transforms the material transferred in a traditional (standard) way into a necessary tool that activates the student's mental abilities. However, below we will compare problem-based learning with standard teaching methods.

In the standard teaching method, first of all, the teacher transmits "ready-made" knowledge, and the student passively assimilates it. After that, the acquired knowledge is fixed in memory and

theoretically used in the process of solving practical educational problems. That is why this method is called the method of acquiring knowledge and applying it in life.

Problem-based learning differs from the traditional (standard) teaching method in that it does not require the student to solve specific problems at all; this is not the main requirement. The difference is that this method explains to students how the process of solving problems will occur in their learning activities. In problem-based learning, a specific problem is mastered by the student independently under the guidance of the teacher.

4. Achieve simple perception of the educational material by students and its close connection with life.

5. Selection of appropriate educational methods for the content of the subject, these methods should be mainly at the level of partial research and study. Such situations as the fact that the educational process is permanently fixed and implemented for many years and organized for the foreseeable future, the topics of the subject of the specialty are repeatedly reviewed each academic year, and the educational activity of students is not always at a high level, create indifference even on the part of the teacher himself.

In teaching economics students independent thinking in developing mathematical thinking, teaching them various examples and solving problems in different ways gives good results. In particular, topics included in the school curriculum or new topics unfamiliar to students arouse even greater interest in them. This has a positive effect on the fact that the student enters the subject with greater interest.

6. Selecting teaching aids that are appropriate to the subject content and ensuring their use by a large number of students

It is known that the formation of a student as a comprehensively perfect personality and the acquisition of high-level professional knowledge in a certain direction is closely related to the educational process. The content of education, in turn, includes the curriculum, the training program and the main organizational form of training through a lesson. A lesson is an educational process that continues to this day in a very historical period, and its content and methods are developing and improving from year to year. It is this pedagogical process that enriches and improves the content in harmony with the development of society, at each lesson the student learns something, acquires some new knowledge, and on its basis there is a desire, interest, aspiration for a certain goal. The lesson also prepares the student for future life, that is, the student is brought up as a participant in the lesson, develops spiritually. After all, a lesson is a continuous learning process from the known to the unknown to the desire to learn again.

Another aspect of the lesson is that it serves as a basis for other forms of learning, such as science olympiads, competitions, trips, clubs, various theme parties and other events.

8. Teaching students to be proud of the ideology of national independence, their history, national traditions and our rich culture in accordance with the lesson content.

9. Ensuring the connection of the lesson topic with other subjects.

10. Forming a holistic scientific worldview of students.

11. Giving students an understanding of the economic, legal and environmental culture of the lesson subject.

12. Achieving full compliance with the requirements for knowledge, skills and qualifications of students in accordance with state educational standards. From the content of these requirements related

to the organization of a modern lesson, we can conclude that it is impossible to meet these requirements in standard lessons that are firmly established in school practice.

Stages of studying mathematics during a lesson. During a lesson, the teacher defines the educational goal of the lesson. The lesson should use demonstration materials about the stages of studying mathematics, its methodological sequence, how to start and finish practical work. In addition to these
1. Each lesson should have a clear ideological system, and the teacher should use it for educational purposes.
2. Each lesson should be related to practice, taking into account social opportunities, equipped with visual aids.
3. Classes should be organized with the effective use of relevant modern methods, tools and technologies.
4. The effective use of hours allocated for the lesson should be ensured.
5. During the lesson, the teacher and the student should have active relationships with each other, taking into account the personal characteristics of the students during the training.
6. During the lessons, it is appropriate to inform students about the positive changes taking place in our country, using the rich spiritual heritage and spiritual values of our people. In particular, providing brief, concise information about which scientist founded the mathematical concept presented in the lesson, and the contribution of this scientist to the development of mathematics will increase students' interest in mathematics. The teacher will be able to form such information from various literature and Internet sources before the lesson.

About the use of pedagogical methods. The ability of students to independently solve examples and problems in mathematics, participate in various didactic games, skillfully work with handouts, organize conversations, organize theatrical performances, perform activities using various methods opens up a wide path for them to master the content of practical classes in art, and most importantly, helps to organize educational classes in applied art in an interesting way.
Any high-level lesson, even if it is based on visual evidence, if it continues for too long, the student's hearing will weaken and become tired. This situation can turn the student into an indifferent listener. Therefore, it is necessary to conduct a short question and answer session. During the lesson, gradually connecting the topic with examples of the student's daily activities, a wide path to finding suitable solutions opens up, instead of indifference, students develop internal aspirations. Most importantly, this prompted the student to independently substantiate his personal opinion and improve his knowledge and skills through the exchange of ideas. Therefore, in the practical application of a set of methods that must be used to study or implement something, an event, a process, the procedure for implementation through individual methods is used.
The formation of an independent way of thinking in a schoolchild determines his mental development. So, it goes without saying that a new pedagogical technology that has the ability to form an independent way of thinking in a student also contributes to mental development. In general, one of the main areas of human development is his intellectual development. Since a student is the result of mental development, the personality also develops. The effectiveness of education is determined not by how much scientific knowledge is retained in the memory of students, but by how much the student can think independently on the basis of this important knowledge. This demand for education led to

the need to introduce new teaching methods. Thus, new studies of pedagogical experience were born, and as a result of these studies, one of the types of new pedagogical technologies was developed - the problem-based teaching method. It is assumed that the problem-based teaching method does not affect the memory of students, but primarily the thought process.

The place and role of non-standard teaching methods in the organization of the educational process, especially mathematics classes based on a creative approach, are incomparable. Because they by their nature encourage students to be active, have the ability to create heated discussions in the educational process [1-30]. Since social and natural processes have certain laws, each social reality is based on a certain order of natural phenomena, following a number of rules in the use of non-standard lessons serves to further increase their effectiveness. The following can be recognized as the main conditions for organizing subsequent non-standard education or using non-standard lessons in the process of voluntary education:

Among them are 1) clearly defining the goal. After organizing a "small talk" with students on a topic of interest to them, the general situation of the lesson is briefly defined. That is, students are introduced to the lesson plan and the intended goal is expressed. It is important that the goal is clear to everyone. The main goal should be expressed at each stage of the lesson. 2) not deviating from the topic. It is important to pay attention to completing assignments at each stage of the lesson. During training, the teacher should not allow deviations from the topic. Students should be taught to work on assigned tasks, to give clear answers even when presenting answers. Only then will the goal be achieved and the effectiveness of the lesson will increase. In addition, even the answer is designed to teach students to "feel" time and "calculate" with it. 3) allow students to be especially active in the lesson. This is an effective pedagogical measure that allows for the guidance, advice and direction of the students' activities as needed at different stages, but these situations should not result in the teacher being the only one in the spotlight; the main focus can be on monitoring who is doing what. Without reprimanding the students who "disengaged" from the lesson or who completed the task, he asked them: "What did Sardar manage to do?" or "I think Rana completed the task first", it is important to draw their attention to the main task. 4) Effective completion of the lesson. Students should finish the lesson in an upbeat mood and with a firm belief that they will be able to apply the knowledge gained in the lesson in practice.

At the end of the lesson, the teacher draws attention to the active participation of the students: "I think that the knowledge you have received today will be useful in your life!" the expression of desire by its content creates an elevated mood in them. There is a need to master the content and form of standard lessons aimed at transferring knowledge to students. This need leads to the passage of non-standard lessons. The main goal of non-standard lessons is based on the mechanism of independent learning of students. In a non-standard lesson, the student explains his point of view on the chosen topic of the lesson, even if there is a mistake, the student's opinion is heard to the end. When organizing mathematics lessons at school, it is important to be able to choose interactive methods suitable for the topic. The teacher is obliged to use interactive methods, following the theory of transition from simple to complex. Based on this theory, simple methods used in mathematics classes include: work in small groups, work in pairs, teamwork, brainstorming, cluster methods. Advanced methods include BBB, text mining, zig zag, venn diagram, summary.

Instead of a CONCLUSION, it should be noted that mathematics classes, organized on the basis of advanced pedagogical technologies, serve the comprehensive acquisition of natural knowledge by

students. It develops the student's thinking, teaches him to think independently and creatively. After all, the upbringing of a perfect generation is an important sign of the cultural and educational development of society and the spiritual maturity of the nation.

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