

## Modern Forms of Mathematics in Primary Schools

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### ABSTRACT

*This article discusses the modern forms of mathematics lessons in the primary classes, and provides effective ways for primary school pupils to master mathematics quickly and easily, in line with today's requirements. Also, the methods that can be used in the organization of modern and innovative lessons, as well as the procedures for their conduct are described.*

**Key words:** *modern, modernism, innovation, course form, method, effective method, mathematics.*

### I. Introduction

The effectiveness of education depends not only on the didactic processing of information content, but also on the correct choice of teaching methods, as well as strict adherence to the principles of education. Experts differ in their teaching methods. In some countries, it is interpreted as a way of going from ignorance to knowledge, and in others as a way of connecting teacher and student activities.

The use of modern teaching methods in the educational process increases the content and quality of education, the lesson is organized in an interesting and active way. At the same time, students' participation in the lessons has become more active, their worldview has expanded, and they have gained scientific, theoretical, practical and methodological experience. Their written and oral speech develops and is formed.

Students work independently, creatively, and think freely. Independently study the literature to shed light on the topic. They will be searched in the library and will be able to find and read news on the topic. Learn to work with scientific and theoretical literature in the library. In the workshop, students develop their oral and written communication skills by sharing ideas from the text.

### II. Materials and Methods

Nowadays, multimedia and CDs are taught using technical means in the educational process. For example, multimedia is a one-hour, audio, programmed, scheduled, DTS-compliant form of instruction. To use it, experts create multimedia for a specific hour on the topic. The subject in the text creates multimedia on the screen. The subject matter of the text makes the on-screen multimedia itself meaningful and high quality.

The teacher does not spend a lot of energy, knowledge and effort in the classroom. Students become more active, independent, creative, and free-thinking. In class, they learn to work in a modern way. They will be literate in computer and information technologies, learn to organize lessons with the help of technical means. Students' worldviews will grow, they will become more active, and their interests will increase.

When using this method, the teacher addresses the students with thought-provoking assignments and questions. Of course, assignments and questions should be relevant. For example, in an etiquette class, a teacher may ask students such a puzzling question. A person gets 3 loaves of bread every day. He gives one to his parents, another to his children, and the other to his husband. Why does he do that?

Of course, high school students will find this puzzle right away, but for younger students, the eureka method can be used to solve this puzzle. For them, the question is thought-provoking, and they use their mental capacity. It makes them think. Also, in a math class, a teacher can use one of these methods in an unconventional way for students. Example: A teacher gives students the following task:

"Think of any number up to ten and don't tell us!" Multiply the number you think by two, don't say the answer! Add two, then divide the number by two! Subtract the resulting number from the number you originally thought of! You will all be left with a number.

In fact, it is one of the most thought-provoking, fun, and unconventional ways.

Through this method, students' mental thinking is developed, formed through their worldview and thinking. The lesson is interesting and unconventional. Students will be more active in the classroom. They will be able to express themselves freely. Each student has his or her own position and path.

The teacher will teach a career-related lesson to help students improve their professional skills. The purpose of this method is to motivate students to pursue a career. For example, elementary school etiquette uses a career-related teaching method to engage students in the profession through reading lessons. In this case, real-life examples of the profession are explained to students during the lesson. There will be information on sewing, cooking, handicrafts, farming, goldsmithing, painting, craftsmanship, driving, sports masters, discussions, conversations, meetings with professionals. You can do this in class. By informing students about the profession and inviting them to the lesson, they will be asked questions about the benefits of their activities for the future and society for a certain period of time. This process makes the lesson unconventional.

### III. Analysis and results

Students not only acquire knowledge during the course, but also acquire professional knowledge, skills, and competencies. Students' professional interests will increase. They will have the opportunity to pursue a career in the future. The lesson is lively and unconventional. Students will be able to think independently, freely and creatively. The lesson is lively and unconventional. Students will be able to think independently, freely and creatively. They will also increase their interest in the profession during the course.

The non-traditional methods mentioned above encourage students to take an active part in the lessons in the first place. will be able to engage them in the lesson Second, through non-traditional methods, students will learn to work independently, creatively, and think freely. Thirdly, the lesson is interesting, children do not get bored in the lesson, they work creatively, learn to work on different sources, and develop scientific-theoretical, methodological and practical knowledge and experience.

Students will be given a topic or plan in advance. Students prepare independently for this topic or plan. Students of each class should prepare for the topic and plan for 3-4 of the most talented, excellent, self-working children, in-depth study, its goals and objectives, methodological bases, scientific-theoretical, practical -complexly studies the methods of methodological knowledge,

principles, rules, laws, problems in the subject plan, the analysis of their solutions, and these 3-4 students cover the topic in detail. All students analyze and discuss its shortcomings and achievements. The facilitator monitors each question, how and in what way the topic is enriched, and does not deviate from the topic. The content, solution, problems of topics and questions are solved from the scientific-theoretical, practical-methodical point of view, generalized, summarized, Suggestions, recommendations are given. They will be able to express their opinions independently. The same topic, the question is solved in depth, in detail, its objectives, methodological bases, problems are studied by students in an independent, debatable way. Students take an active part in the lesson, which takes the form of a non-traditional lesson. What students don't know is what they learn in a conference lesson.

A topic is presented to the students in advance, along with the teacher's plans. They read independently on a topic based on this plan, collect a library of literature in the library, and prepare for class. In this lesson, students will be asked to provide feedback on the topic. The seminar is open to all students. The teacher asks each student the goals and objectives of the topic, the methods and forms, the essence of the content. The topic will be studied in detail. Students play an active role in the seminar, playing the role of teacher, manager, facilitator.

The structure of elementary mathematics has its own characteristics.

1. Makes up the main content of the course of arithmetic material. He teaches arithmetic of natural numbers, basic quantities, algebra and geometry in combination with elemental material.

2. Primary class material is concentric structure. For example. first the decimal numbering is taught, then numbering and arithmetic operations within 100 are taught. Then perform arithmetic operations within 1000, then in multi-digit numbers.

These are taught along with numbering, quantities, fractions, algebraic and geometric materials.

3. Theoretical and practical issues are interrelated.

4. Mathematical concepts, properties, discovery of legal connections are interrelated in the course.

5. Every concept is explained in a developed way.

For example, before teaching arithmetic operations, its exact essence is revealed. then the properties of the amai, then the relationship between the components. then the result of the application. at the end the link between the actions is given.

6. The basic concepts and the resulting concepts are given in the interrelationship.

However, the number of concentrates in the current program has not been reduced. hundreds, thousands, multi-digit numbers. It should also be noted that the material is grouped in such a way. in which interconnected concepts, actions, and issues are approached in terms of time.

Simultaneously with the study of the properties of arithmetic operations and appropriate calculation methods, the relationships between the results of arithmetic operations and their components are revealed. (For example, if one of the additions is deducted from the sum. The second additive is formed). A change in the results of arithmetic operations is observed with a change in one of the components.

Observing the elements of algebra, in depth, understanding and generalization meets the objectives of equality, inequality, equation, variable concepts concrete will be disclosed in principle.

From Grade 1, numerical equations and inequalities ( $4 = 4$ ,  $6 = 5 + 1$ ,  $2 < 3$ ,  $6 + 1 > 5$ ,  $8 - 3 < 8 - 2$ , etc.) are considered.

Their study is associated with the study of arithmetic material. And it helps to reveal it more deeply.

Starting from class 2,  $(x + 6) - 3 = 2$  and so on. equations in the form of the solution of the equations is done first by the method of selection, and then by knowing the relationships between the results of the operations and the components.

Practical testing with a variable allows students to master functional imaginations.

Geometric material serves to acquaint children with the simplest geometric figures, to develop their spatial imagination, as well as arithmetic laws, the demonstrative purposes of connections: (For example, from a descriptive image of a rectangle divided into equal squares) is used to reveal the relationship of the displacement property of multiplication).

From Class 1, straight and curved lines, sections, polygons and their elements, right angles, etc. are included.

Students should be able to imagine geometric shapes, learn their names, make simple ones on checkered paper. Besides. they are the length of the cut and broken line. they must be able to find the perimeter of a polygon, a rectangle, a square, and the face of any figure in general (using a palette).

The objectives of teaching mathematics in primary school are: general education purpose, educational purpose. practical purpose. These goals are inextricably linked. They fill each other up.

1. The purpose of education requires the teacher to:

- a) provide students with a system of mathematical knowledge, knowledge, skills, abilities;
- b) study of the real world by mathematical methods;
- c) to develop students' oral and written speech, to ensure its quality;
- g) to provide students with knowledge of mathematics in such a way that through this knowledge, through active learning activities, knowledge, skills, abilities increase.

2. Educational purpose. Teaching math teaches students perseverance, diligence, perseverance, and control over their own thoughts and conclusions. in particular, it is necessary to achieve the fluency of the thought expressed on the basis of observation. Symbols are used in mathematics to represent the relationship between quantities. This is the mathematical language that needs to be developed. The task of the teacher should be to teach him to translate the mathematical idea expressed in the mathematical language into the native language.

Striving to know. it is necessary to cultivate a sense of satisfaction from independent work. The teaching of mathematics itself nurtures in students the ability to concentrate and concentrate.

The teacher should provide:

- a) the student can understand the connections in the material world, changes in quantities, their relationship to each other;
- b) to ensure that students have a strong interest in learning mathematics;
- c) labor. Ensuring relations with the homeland, people, creating aesthetic taste;
- g) history of the Uzbek nation, incl. fostering a worldview on the history of mathematics teaching;
- d) fostering students' thinking skills and mathematical culture.

3. Practical development goal. The practical purpose of teaching mathematics is to teach students to apply the knowledge they have acquired. Numbers and mathematical expressions of the acquired knowledge. be able to apply to operations performed on points. to teach how to use it in solving the

same problems. It is to teach how to apply knowledge to solve problems encountered in daily life.

The concept of teaching method is one of the basic concepts of didactics and methodology. Thus, teaching methods perform three main functions: mastery, upbringing, and development.

In order to make a conscious choice of teaching methods that are relevant to the new content of education and the new tasks, it is necessary to first study the classification of all teaching methods.

### *1. Information on research methods.*

It is impossible to develop pedagogy without studying and generalizing the experience of pedagogical education, without in-depth study of the pedagogical process. Modern education equips pedagogy with a general method of scientific knowledge. but like any other science, the science of pedagogy has its own research methods.

Scientific research methods are methods of obtaining scientific information in order to establish legal connections, relationships, connections, and to formulate scientific theories. Tracking, experience, acquaintance with school documents, study, interviews and surveys, methods of scientific and pedagogical research. Recently, the use of mathematical and cybernetic methods, as well as modeling methods, has been noted.

Primary mathematics teaching methods use the same methods used in all pedagogical research.

### *2. Observation method.*

The method of observation is the perception of the pedagogical process in a direct direction, with the appropriate recording of the methods of observation in normal conditions. The observation method is used to study how the work in this or that area of educational work is progressing. This method allows the teacher to collect accurate material about the activities of the teacher and students in a non-forced natural environment.

During the observation, the researcher does not interfere with the normal phase of the learning process. The follow-up will continue in the near or near term based on a clearly targeted plan. The progress of the observation, the facts, the events taking place, the equipment are recorded in the observation diary.

Tracking can be continuous or selective. A phenomenon that is more common in Continuous Observation (e.g., cognitive activities of younger students in mathematics lessons). selection In observation, small-scale events (e.g., students' independent work in math classes) are observed. Decision making or diary keeping is the simplest method of recording observations. The most reliable method of recording observations is the use of technical means, video, photo and TV screens.

One of the Observation Methods used is the study and generalization of best pedagogical practice. A mandatory prerequisite for the successful use of this method is that the description of the teacher's experience must be appropriate to the research task set.

### *3. Experience.*

The experiment is also a specially organized observation. conducted under conditions controlled and systematically altered by the researcher. Pedagogical experience is used to study the effectiveness of this or that method of teaching and education, instruction manuals.

Before conducting an experiment, the researcher should be able to clearly articulate the issues that need to be explored, and the resolution of such issues should be important for school practice and the science of pedagogy. Before conducting an experiment, the researcher should study the theory and history of the subject matter. as well as practical experience in the field. The study of scientific

hypotheses is of great importance in research. The organization of the whole experiment is aimed at testing scientific hypotheses. It allows material to be collected, preventing the researcher from confusing it with specific material.

Analysis of experimental results is carried out by the method of comparison. To do this, two or more groups are formed, the composition of the students in these groups should be as uniform as possible in terms of preparation levels and other indicators. In the same classes work is carried out on the experimental material specially developed by the researcher. Control classes are selected for comparison, these classes do not use the methods, tools, etc. that are used in the experimental classes, approximately according to the composition of students, their level of knowledge.

Other methods of obtaining objective information about the results of the experiment are also used:

1. In experimental testing classes, the initial conditions are somewhat more favorable than in the control class: if the experimental classes have good results in such conditions, the experimental solution of the problem is considered justified;

2. Two classes with the same composition of students are taken: a new solution of the problem under study is applied in one of these classes, then applied in the other class materials in other subject materials; if a new method in such application, If this method is good works, the method will be justified.

Before the experiment begins, the knowledge of all students in the intermediate stages and at the end of it is tested. Based on the analysis of the data obtained, the method, method, etc. conclusions are drawn about the effectiveness. The result is based on an analysis of the qualitative and quantitative results obtained from the experimental test classes. There are different ways to determine quantitative quantities (in terms of mastery, comparison of correct and incorrect answers, etc.). Recently, the same computational techniques and cybernetic tools have been used for this purpose from the methods of variational statistics. Experimental verification of some important rules is done through mass experimentation 4. Study of school documents.

One of the most common methods of pedagogical research is the study of students and school documents. Determining the level of readiness of students in certain sections of the program allows you to monitor their growth and development over a period of time. For example. special written and graphic work is carried out in order to check the knowledge and skills of children in mathematics as a result of which: to perform such special work for a certain period of time, to see how students move forward and how well they move. shows. It is important to analyze the mistakes students make in their writing. Such an analysis makes it possible to identify the complex challenges faced by students as a whole class, as well as the individual characteristics of students in their mastery of mathematics.

Curriculum documents (curriculum, syllabus, methodical work documents, reports, etc.) reflect the process and state of development of educational work.

Studying students' notebooks is important for research work.

##### 5. *Conversation method.*

Conversational method is also used in pedagogical research. The use of this method allows to obtain materials that complement and clarify the data obtained from the observation, to perform tasks. The basis of the success of this method is the ability to communicate with children, to communicate freely with them.

Conversation is one of the most common and leading teaching methods. can be used at the same stages of the lesson, for the same learning purposes, i.e. to review homework assignments and independent work, to explain new material, to reinforce and to repeat.

Conversation-teaching is a question-and-answer method, in which the teacher, based on the extent to which students have mastered their knowledge and practical experience, leads to problem solving.

In the methodological literature, it is often recommended to use the conversational method in the introduction to mathematical concepts (numbers, arithmetic operations and the relationship between their components and their results). Two types of conversation are used in teaching, namely catechetic and heuristic conversation. Catechistic conversation- It is based on a system of questions that require simple recollection of previously acquired knowledge, tariffs. This dialogue is mainly used to reinforce and replicate new material in the examination and assessment of knowledge.

#### IV. Conclusion

It is very important to set the purpose of the interview, justify the program development, direction and methodology. The interview method involves the inclusion of direct and indirect questions that allow you to verify the reliability of the answers to the questions asked directly.

The interview method can also be aimed at teachers, parents, in which the researcher's attitude towards the interviewee can be clear.

Younger school-age students are told more about the need to use new methods of teaching in school due to the significant change in the purpose and content of teaching mathematics. This includes, for example, problem-based teaching methods, curriculum-based teaching methods, and other methods. However, the novelty of these methods is that they use teaching methods designed to stimulate students' mostly independent, mostly inquisitive activities.

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