



IMPROVING THE METHODS OF TEACHING MATHEMATICS AND INCREASING ITS IMPORTANCE

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Article history:	Abstract:
Received: April 13 th 2021 Accepted: April 26 th 2021 Published: May 31 th 2021	<i>Mathematics is a bit difficult science for some and one of the most interesting for others. Being able to engage students in this subject is a testament to a teacher's skill. So, this article demonstrates in detail the concepts of teaching methods of mathematics, its methods, advantages of teaching science together with historical materials, differences and similarities of teaching methods of this science from other disciplines, their interdependence. Of course, the need for new approaches and research, as well as professional skills of the teacher, is described in detail in the article.</i>

Keywords: Methodology, methodological system, mathematics, observation method, an experiment, the study of student work and documents, conversational method, the interview method and others.

INTRODUCTION

In today's world of great economic changes and innovations, the importance of mathematics has grown, so mathematics education has a great social significance. A clear example of this is the task set by our government to improve the system of education and upbringing of young people, to bring education and upbringing to the level of the growing demands of life. In 1997, the Law on Education was adopted. The law emphasizes the role of the school in the period of social and economic changes, the main task of the school is to provide students with a thorough knowledge of the basics of science, to form in them economic and mathematical literacy, to prepare them for life and conscious choice of profession. There are ideas to bring the content of education to the level of modern achievements and requirements. For the purpose of implementing these tasks, a new curriculum was introduced in almost all subjects, including mathematics, and teaching methods were improved.

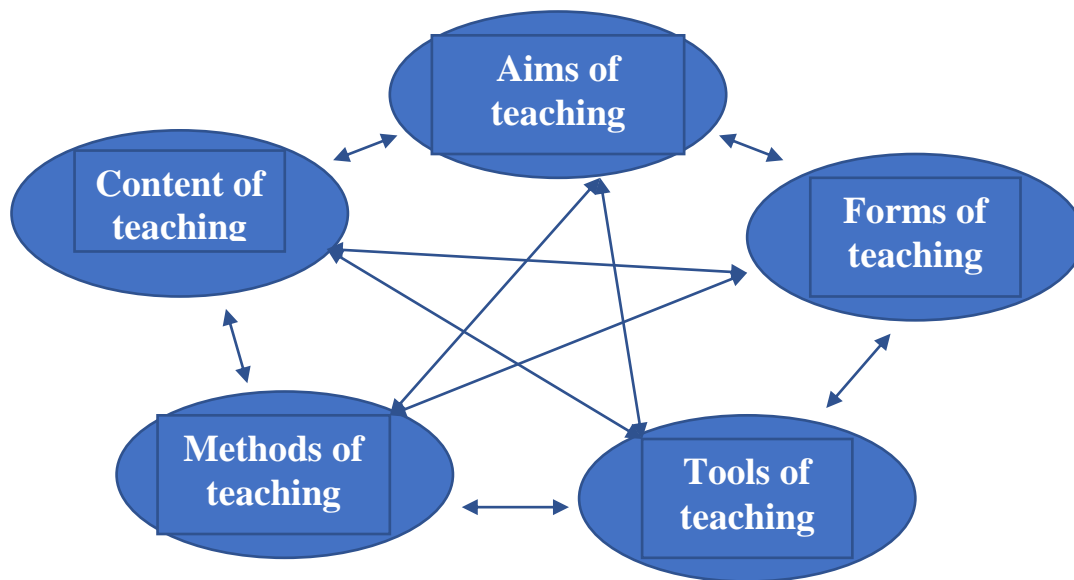
In order to successfully teach mathematics to students effectively, a beginning teacher must have a thorough knowledge of the developed system of teaching mathematics, clearly the methodology of teaching mathematics, and on this basis to start creative work independently.

MAIN PART

"Methodology" is a Greek word that means "way". Mathematical methodology is a branch of pedagogical science, which is part of the system of pedagogical sciences, studies the laws of mathematics at a certain stage of development of mathematics in accordance with the objectives of teaching set by society. The subject of teaching methods of mathematics consists of:

1. *Substantiate the objectives of teaching mathematics. (why it is taught?).*
2. *Scientific development of the content of teaching mathematics (for example, what material is studied in mathematics in which classes?, why this material is chosen?, at what level of generalization of each issue of the course?, in what order the topics are studied?, the most is shown to be rational?).*
3. *Scientific development of teaching methods. (How to teach, that is, what should be the methodology of teaching so that students acquire the knowledge, skills, abilities and intellectual abilities they need today? .*
4. *Development of teaching aids - textbooks, didactic materials, manuals and technical aids need! (how to teach?).*
5. *Scientific development of the organization of education (how to conduct lessons and extracurricular forms of education? What organizational methods should be used to conduct educational work? etc.).*

Thus, the aims, content, methods, tools and forms of teaching are the main components of the methodological system. A. M. Pishkalo describes this system graphically as follows.



Mathematics is a bit difficult science for some and one of the most interesting for others. Being able to engage students in this subject is a testament to a teacher's skill. The use of a variety of developments and thought-provoking topics in the classroom stimulates students' interest in science. Therefore, in the teaching of mathematics in high school, especially for primary school students, combined with historical materials, it differs in pedagogical and psychological aspects, as well as the interdependence of the methods used in the teaching process. It also differs in It is known that in pedagogy, along with teaching methods, there are teaching methods.

Especially since teaching methods emerge as a set of effective sequences of teaching or learning methods in their structure, it is formed individually for each teacher. In pedagogy, there are mainly the following methods.

Teaching methods	Educating methods	Training methods
1. Monologue	1. Statement of information	1. Performance
2. Dialogue	2. Explanation	2. Reproductiveness
3. Demonstration	3. Stimulation	3. Partial searchability
4. Heuristic	4. Inspiration	4. Searchability
5. Searchable	5. Giving instructions	5. Practical work
6. Algorithmic	6. Problems	
7. Programming		

These methods are used at some stage in the teaching process. It serves to achieve the set goal and bring it to the required level. There are methods of teaching mathematics to students that can give meaning to each of the above methods in terms of their epistemology, namely: observation and experiment, analysis and synthesis, induction and deduction, comparison, there are methods of analogy, generalization, abstraction, and concretization.

Observation method - perception of the pedagogical process in a straightforward way, with appropriate recording of the results of observation in normal conditions. This method is used to study the progress of work in this or that area of educational work, this method allows you to collect factual material about the activities of students and teachers in a non-forced natural environment. The main advantage of this method is that it allows you to imagine a direct picture of pedagogical life, reality.

In the process of observation, the researcher does not interfere in the normal course of the learning process. The follow-up will continue for a short or long period of time based on a specific target plan. The progress, facts, events, equipment of the observation are carefully recorded in the observation diary. Tracking can be continuous or selective. In the case of continuous observation, there is a more widespread phenomenon (for example, the cognitive activities of younger students in mathematics), in the case of sample observation, there are smaller-scale phenomena (for example, independent work of students in mathematics).

For instance, writing a decision or keeping a diary is the simplest way to record observations. However, the most reliable method of recording observations is the use of technical means - video, computer, photo, tape recorder, TV screen. One of the methods of observation used is the study and generalization of advanced pedagogical experience. A prerequisite for the successful use of this method is that the description of the teacher's experience should meet the research task and lead to certain conclusions, including dry, schematic, analysis and comparisons.

An experiment is also similar to observation that is conducted in a specially organized, controlled, and schematically modified environment. Pedagogical experiment is used to study the effectiveness of any method, method, instruction of teaching and education. Before conducting an experiment, the researcher should be able to clearly state the issues to be studied. The solution of such problems should be important for school practice and pedagogy. Before conducting the experiment, the researcher gets acquainted with the theory and history of the subject matter. The structure of the hypothesis plays an important role in the study. The organization of the whole experiment is aimed at testing the hypothesis. It allows you to determine the ways of collecting material, does not allow the research to be confused with the actual material. Analysis of the results of the experiment is carried out by the method of comparison. To do this, 2 or more groups are formed, the composition of students in these groups should be as uniform as possible in terms of level of preparation and other indicators. In the same experimental classes work on the material specially developed by the researcher.

Before starting the experiment, in the intermediate stages and at the end, the knowledge of all students is tested. Based on the analysis of the data obtained, conclusions are drawn about the effectiveness of the method being studied. (E) and (E) a conclusion is drawn based on the analysis of the qualitative and quantitative results obtained from the control classes. There are different ways to determine the quantitative quantities (by mastering, comparing the correct and incorrect answers). Recently, for this purpose, the use of computational techniques and cybernetic methods of variational methods, the verification of some important rules is carried out by mass (E).

One of the most common methods of pedagogical research is the *study of student work and documents*. Students' work allows them to determine the level of preparation for certain sections of the program, to monitor the growth and development of a particular period of training. For example, special written and graphic work is done for this purpose, as a result of which it is possible to see how much students move. It is vital to analyze the mistakes students make in their writing. Such an analysis allows to identify the typical difficulties faced by students in the whole class, as well as the individual characteristics of students in mastering mathematics.

Educational documents (curriculum, methodical working documents, reports, etc.) reflect the process and state of development of educational work. The study of students' notebooks is crucial for research work. Long-term analysis of notebooks helps to reveal the features of students' work and the system of teacher's work.

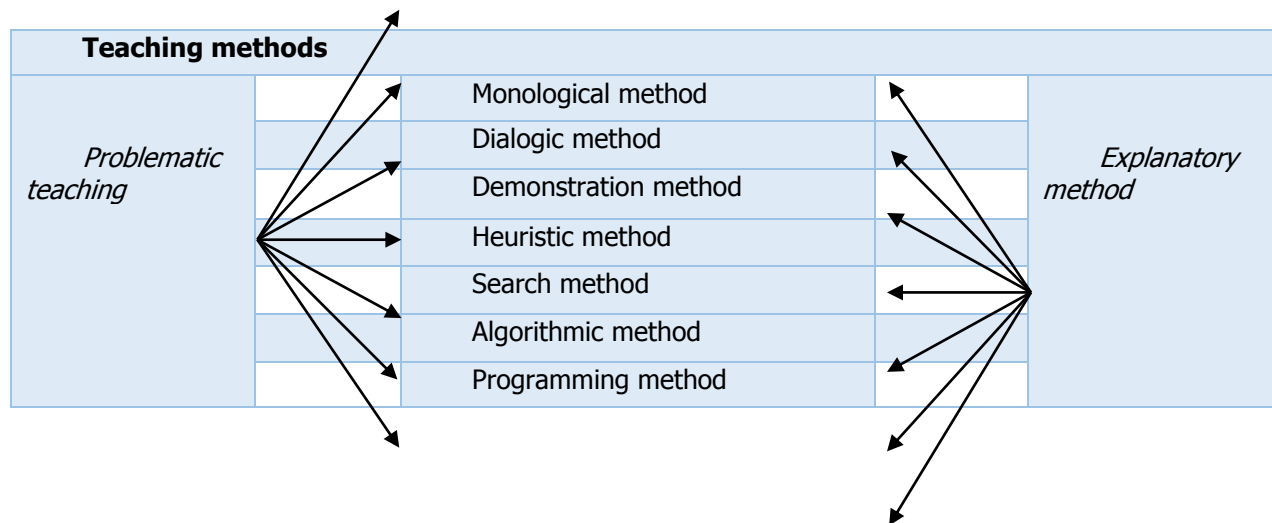
Conversational method is also used in pedagogical research. The use of this method allows to obtain material that complements and identifies the data obtained from the observation, to perform tasks (E). The basis of the success of this method is the ability to communicate with children, to communicate with them freely. Otherwise, there is always the risk of students' formal responses being unreliable and superficial.

It is crucial to set goals, program, direction, and methodology for the interview. *The interview method* involves the inclusion of questions that allow you to verify the reliability of the answers to the questions asked directly, the answers are recorded on a special protocol or tape recorder. The method of conversation can be aimed at teachers and parents.

Questionnaire method is also used when it is necessary to determine the opinion on an issue, to collect some facts. If the answers are taken orally, then these answers are recorded in full in the minutes. Written questionnaires are valuable when most people answer the same question and everyone answers independently. When using the questionnaire, the following 2 requirements should be followed: 1) the questionnaire should have fewer questions 2) the questions should be expressed in such a way that everyone understands them the same and they require clear answers. Theoretical methods play a leading role in scientific and pedagogical research. In each study, it is necessary to first select the object of study, on the basis of theoretical analysis to determine and verify the facts on which this object depends.

It is necessary to clearly define the goals and objectives of the research, to develop its theoretical foundations and principles, to formulate a working hypothesis. Accordingly, it is necessary to develop research methods, explain the facts and choose the methods of analysis. These techniques not only help to achieve the structural goal, but also to achieve it. The teacher uses other methods to explain each new topic, clearly with modular teaching prof. M.G.Davletshin, prof.T.Tulaganov, prof. R.Mavlonova, prof. Z.G.Tadjieva and others play an essential role in highlighting the opportunities for students to improve and develop their learning.

From the above, it can be seen that the correct use of a set of methods in the process of teaching historical materials to students can be an important factor in students' mastery. As known that the process of teaching historical materials is a link between problem-based and explanatory methods, which, by their very nature, are linked to teaching methods in the following order.



The use of this type of teaching method has its own characteristics, which depend on the structure of the content of the teaching material. For example, in a class that introduces students to units of measurement such as "time", "calendar", "mass" and "fraction" the process of teaching history is a little different than in other classes. As you know, the types of lessons are divided into learning new learning material, improving students' knowledge and skills, generalizing systems, combining, monitoring and correcting knowledge, skills and competencies. Each of these general divisions, according to its function, has its own structure, and in the process of pedagogical development, the types and forms of lessons are interpreted differently by scholars. We have described the didactic and methodological structure of teaching in the appendix.

Each science forms a system of concepts related to historical materials. Concept, on the other hand, allows us to understand the nature of things and to reflect the general important features, characteristics, and connections of the sciences.

CONCLUSION

In short, the methodology of teaching mathematics is related to the methodology of general mathematics. Because, the laws established by the general methodology of mathematics are applied taking into account the age characteristics of young students. There is also a two-way connection between the methodology of teaching mathematics and pedagogy. On the one hand, the methodology of mathematics is based on the general theory of pedagogy and is formed on this basis, which ensures the integrity of the methodology and approach in solving problems of teaching mathematics. On the other hand, in the formation of the general laws of pedagogy relies on the information obtained by special methodologies, which ensures its vitality and specificity. Thus, pedagogy "feeds" on the specific material of the methodology, which is used in pedagogical generalizations, and in turn it serves as a guide in the development of methods.

In addition, the methodology of mathematics has many similarities with other methods of education (native language, science, labor, drawing). It is very important for the teacher to take this into account in order to make interdisciplinary connections correctly. Because in the lessons of different subjects, students get a clear idea of the events and phenomena around them, their properties.

However, the distinguishing feature of mathematics is that mathematics does not belong to the most general aspects of the material world, its quantitative aspects, and spatial forms and relations, from the exact content of the events and objects studied at the same time as the study of objective being. is abstracted in relation to everything. This is the great power of mathematics, that is, the abstraction and generality of concepts, the possibility of establishing one-sided multifaceted connections with other disciplines. In establishing such connections, general facts, such as numbers, arithmetic operations, geometric figures, quantities, shapes, and elementary concepts: various skills and abilities; types of activities; forms and methods of teaching.

REFERENCES:

1. In the new edition of primary education. State educational standards. Primary education. Tashkent: № 5, 2005. Pages 2-50.
2. Akhmedov M, Abdurahmonova N, Jumayev M. «Mathematics». Teacher's book. Tashkent: Uzinkomtsentr - 2003.
3. M.Akhmedov and others. "Mathematics 1st textbook". Tashkent: Uzinkomtsentr -2003.
4. Bikboyeva N.U. and others. "Methods of teaching mathematics in primary school". Textbook. Tashkent: "Teacher" - 1996.

5. Bikboyeva N.U. and others. "Mathematics 2nd textbook". Tashkent: "Teacher" - 2003.
6. Bikboyeva N.U. and others. «Mathematics 3rd Textbook". Tashkent: "Teacher" - 2003.
7. Bikboyeva N.U. and others. "Mathematics Textbook". Tashkent: "Teacher" - 2003.
8. Jumayev M and others. "1st grade math notebook".Tashkent: "Uzinkomsentr" - 2003.
9. Jumayev M and others. "Practicum on methods of teaching mathematics." Tashkent: "Teacher" - 2004.