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Research Methods of Mathematics Teaching Methodology

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Abstract: In our country, teaching mathematics in elementary grades is generally considered as the first stage of mastering the school mathematics course.

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When working in elementary grades, it is necessary to take into account the general issues that are considered in the teaching of mathematics in secondary school and correctly assess the importance of elementary education in solving these issues.

Pedagogy also has its own special research methods. Scientific research methods are methods of obtaining general information for the purpose of establishing legal connections, relations, connections and constructing scientific theories.

Observation, experiment, study of school documents, study of students' work, interviews and questionnaires are among scientific pedagogical research methods. In recent times, the use of mathematics and cybernetics methods, as well as modeling methods, has been noted.

The methods used in all pedagogical studies are used in the teaching methodology of elementary mathematics.

The method of observation consists in perceiving the pedagogical process directly directed to the goal, recording the results of observation under normal conditions. The observation method is used to study how the work is progressing in one or another field of educational work, this method allows to collect informative material about the activities of teachers and students in natural conditions that are not forced.

During the observation, the researcher does not interfere with the normal course of the educational process. Monitoring is carried out over a long or short period of time based on a plan with a specific goal in mind. The progress of the observation, data, events, and equipment are recorded by the researcher in the observation diary.

One of the used observation methods is advanced pedagogical experience. Generalization of this experience is reflected in conferences and journal articles.

An experiment is also an observation, which is carried out in specially organized, controlled and systematically changed conditions by the researcher. Pedagogical experiment is used in the implementation of the effectiveness of one or another method of teaching and upbringing, manuals.

Before conducting an experiment, the researcher should clearly state the issues to be implemented, the solution of such issues is important for the school experience and the science of pedagogy. Before conducting an experiment, the researcher familiarizes himself with the theory and history of the subject of study. The structure of the hypothesis plays a big role in research. The organization of the entire experiment is aimed at testing the hypothesis. It allows to determine the ways of material

research, does not allow the researcher to leave.

One of the widespread methods of pedagogical research is the study of students' works and documents. Students' work allows to determine their level of preparation for some sections of the program, to monitor their growth and development during a certain period of training. For example, special written and graphic works are conducted for the purpose that the knowledge and skills acquired as a result of their examination should be clearly visible. Carrying out such special tasks at regular intervals shows that students are making progress and to what extent.

It is important to analyze the mistakes made by students in written works. Such an analysis allows to determine the difficulties faced by students of the whole class, as well as the individual characteristics of students in mastering mathematics.

Teaching mathematics in elementary grades should solve educational and practical tasks like teaching any other educational subject. In the process of learning mathematics, first of all, the students have a system of theoretical knowledge, as well as a program determined by the program. must acquire a number of educational qualifications.

It is necessary to solve the task of forming the qualities of a person, such as hard work and discipline, to help the development of students' will, attention and imagination, and to encourage the development of interest in mathematics. It is necessary to train children to develop their reading skills, methods of working on the material, and to work independently.

Many of the issues in the high school mathematics curriculum should be so firmly mastered in the elementary grades that they remain in the minds of students throughout their lives, while other issues should be developed early in the curriculum to prepare them for detailed consideration in later grades. It is entered only for the purpose of research or it is entered to have the opportunity to increase the level of thinking ability during the formation of certain skills and abilities.

The above considerations should be taken into account when it comes to children's conscious and firm acquisition of a certain amount of knowledge, skills and abilities in the field of mathematics in the primary grades of the school.

One of the important issues of primary education was and remains the formation of students' conscious and solid calculation skills (often brought to automatism).

The mathematics course involves summarizing the educational material as much as the students can, understanding the general principles and laws underlying the studied mathematical arguments, and understanding the connections between the observed phenomena.

This mainly refers to the study of the properties of actions, existing connections between them, mathematical relationships and connections that are the basis of practical learning and skills formed in children. The theory is one of the main tools that not only helps to acquire practical learning and skills, but also helps the teacher to teach mathematical relationships among the issues considered in theory and practice, to increase the effectiveness of mathematics teaching.

Teaching students to use acquired knowledge, skills and abilities in different conditions should be considered as a special issue of education. This is the beginning of work aimed at preparing students for polytechnic.

At the same time, the application of knowledge is one of the important means of increasing the effectiveness of children's studies. Psychologists proved that the full acquisition of knowledge, skills and abilities can be achieved only as a result of their independent application in changing conditions. Difficulties that will certainly arise in the transition of children from primary classes to the next class at school can be eliminated to a large extent precisely on this basis. And on the contrary, if the teacher does not pay special attention to comprehensive knowledge and teaches children the same types of questions, tasks, expressions, problems, this will further complicate the transition to teaching subjects in the 5th grade. increases.

This issue is inextricably linked with the more general issue of developing children's cognitive abilities. Already in primary school, children should have done a lot of work to observe and compare, distinguish similarities and differences in the phenomena being compared, analyze, synthesize, generalize, abstract, clarify.

To sum up, the issue of forming children's ability to think logically is inextricably linked with the issue of developing correct, clear, short mathematical speech in them. This is one of the important tasks of primary education. When talking about developmental education, it is a mistake to think that the work consists only in the development of cognitive abilities (perception, memory, thinking, imagination, speech).

References

1. Ibragimovich, N. R. "Social And Philosophical Fundamentals Of National Development." *The American Journal of Applied sciences* 2.07 (2020): 45-49.
2. Norliev, Rustam Ibragimovich. "SOCIAL AND PHILOSOPHICAL FUNDAMENTALS OF NATIONAL DEVELOPMENT." *Theoretical & Applied Science* 7 (2020): 321-323.
3. Norliev, Rustam, and Oydin Ibragimova. "THE SPIRITUAL FOUNDATIONS OF A DEMOCRATIC SOCIETY." *CURRENT RESEARCH JOURNAL OF PEDAGOGICS* 2.12 (2021): 130-134.
4. Норлиев, Рустам. "Ўзбекистон миллий тараққиётининг янги босқичида маънавий юксалишнинг ижтимоий-фалсафий асослари." *Общество и инновации* 2.2 (2021): 99-104.
5. Norliev, Rustam, and Oydin Ibragimova. "Constitutional And Legal Basis Of The Institute Of Public Control In The Republic Of Uzbekistan (Theoretical Analysis)." *The American Journal of Political Science Law and Criminology* 3.04 (2021): 42-45