



## IMPROVING LEARNING ACTIVITY OF STUDENTS BY TEACHING TASKS WITH PRACTICAL CONTENT USING THE HEURISTIC METHOD

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<https://doi.org/10.5281/zenodo.7376228>

**Abstract:** This article discusses the scientific-theoretical importance of using heuristic method technologies during practical training to increase the educational activity of primary school students.

**Key words:** Primary education, methodology, heuristic method, P.K. Konterev, Jan Amos Comenius, heurist.

Today's task of education is to teach students to be able to work independently in the conditions of an informational educational environment that is increasing day by day, to effectively use modern information technologies in various fields, and to use information flow wisely. For this purpose, it is necessary to create opportunities and conditions for continuous independent work for students and teach them to think creatively and make independent decisions. The solution to this problem naturally depends on the quality of training of pedagogues, who are the main organizers of this process. The future of every society is determined by the level of development of the education system, which is an integral part of it and a vital necessity. Reforming and improving today's continuous education system, raising it to a new level of quality, introducing advanced pedagogical and information technologies to it, and increasing educational efficiency have been raised to the level of state policy. The socio-economic reforms carried out in our country determine the need to make specific changes and introduce innovations in the education system. Among the above tasks, the most important is the development of educational technologies that are optimal for organizing the educational process.

One of the innovative methods of effective organization of educational processes is the application of various interactive games to the lesson processes. Here, a method of intensively demonstrating practical training is the "Heuristics" method.

"Heuristics" is a Greek word, and the word "heuristic" means "I look for", "I find", "I discovered". Education based on heuristic methods has a special place in the organization of independent, active, creative activities of students. In general, heuristic education has been used since ancient times. When heuristic conversations were used for the first time in education, they were formed in the process of answering questions that were asked in a row. It is used in pedagogy on the basis of purposeful, fruitful developments that develop the student's thinking. Mathematicians were among the first to introduce this method to students. It is often preferred to use it in the form of the "art of mathematical solution" methods. Later, there were efforts and attempts to use it as advanced, universal methods in the process of teaching other educational subjects. Philosopher soldier, Greek mathematician Papi Alexandriskiy, later French philosopher and mathematician R. Dexretler dealt with this problem and came to the conclusion that heuristic methods are a universal method. As an

advanced method, Jan Amos Comenius emphasized the need to include it in the education system. He describes that the heuristic method is used in the educational process, and a person who creates various innovations is trained based on his thinking and creative thinking. The Russian pedagogue P.K. Konterev put forward the idea that the wide use of heuristic education methods in public schools creates a basis for the formation of a creative thinking person.

The widespread use of heuristic teaching methods began to come to us in the second half of the 20th century. In particular, due to the introduction of cybernetics into the educational process, the increase in scientific curiosity, creativity, and creation of innovations, it requires wide application in the educational process. Currently, the direction of heuristics is also developing in science. After the idea of creating something new is put forward, a new program of voluntary action is created. Innovation is created through creative, non-standard thinking to overcome or accelerate this suffering.

The thinking process is solved by a new approach in a sequence of some operations through analysis, synthesis, generalization. The tasks of heuristics as a science are as follows:

- ② Study of productive processes. Studying and knowing the specific psychological experiences that occur in it, being able to distinguish the real situation through human heuristic activities or elements and keep it in memory.
- ② Learning the principles of creating (model) conditions for heuristic activity.
- ② Modeling the situation for conducting and organizing heuristic activities.
- ② Formation and creation of heuristic system laws aimed at a specific goal for conducting heuristic activities.
- ② Creation of construction of technical equipment for implementation of laws of implementation of heuristic activity.

Heuristics as a science has its own category: heuristic activity, heuristic element apparatus, heuristic system, heuristic strategy, heuristic method, heuristic rule, heuristic way. Now we will think about heuristic methods and directions of their use.

The method of heuristic questions.

It relies on certain laws and principles.

- ② Problematicity and optimality of the idea (the main optimal idea in the solution of the problem);
- ② Distribution of information into sections, blocks (the goal is to solve successive sub-directions in the solution of tasks).

Training organized by such methods is distinguished by the fact that it leads a person to a creative approach and intuitive thinking in solving any problem. But this method does not always lead to absolute success in solving ideas. Multidimensional matrix method.

This method relies on the morphological tactical problems of the scientific researcher and creator:

- ② Some elements of the idea being solved are known in advance;
- ② In the solution of the idea, some of its aspects and elements are unknown;
- ② The solution to the problem is not known.

The multidimensional matrix method is based on a systematic new analysis, it allows to avoid many errors because it includes certain principles in solving the problem. This method often leads to the birth of new ideas rather than solving complex creative problems. The multidimensional matrix method has its own drawback. It consists in the fact that it creates a

lot of options in the solution of tasks of moderate difficulty. This makes it difficult to choose the most optimal one among them.

This method cannot guarantee to reveal all the parameters of the sought problem. Working on the basis of the multidimensional matrix method requires very high skill and skill.

Heuristic method.

The heuristic method is built on the basis of the application of strategies based on experience, practice and observation of facts, in order to achieve an effective solution to a specific problem.

It was the Hungarian mathematician George Polya (1887-1985) who popularized this book by publishing one of his books. How to solve this. By studying and understanding various math tests at a young age, he began to look at how he came to solve these tests. This concern led him to this very argument through the various heuristic procedures he later taught his students. Their strategies: Outline the problem. On the opposite side of the problem, find its solution, make a plan. If it's an abstract problem, try to study a concrete example that fulfills the plan. As a basis, consider the problem in general terms

Polya on the first point, it seems very obvious, because it is often not remembered, but sometimes students are prevented from solving their problems because they do not fully or even partially understand it.

Later, in the second chapter, when it comes to planning, Polya mentions that there are many rational ways to solve problems. The ability to choose an appropriate strategy is best learned by solving many problems. In this way, it becomes easier and easier to choose a strategy.

The third step is usually easier than making a plan. In general, you need care and patience, because you already have the necessary skills. Stick to the plan you choose. If it doesn't work, throw it away and pick another one.

In step four, Polya mentions taking time to reflect on what was done, what worked, and what didn't. Doing this allows you to predict which strategy to use to solve future problems.

Heuristic method in teaching.

The heuristic method is a method of discovery to understand the subject independently of the teacher. What he wrote and taught. Professor of Chemistry at the City and Guilds Institute (London), Armstrong was very influential in promoting the teaching of science in schools. He was a strong advocate for a special type of laboratory training (heuristic training). Here, the student goes on to explore independently, so the teacher does not provide support or guidance in this method.

The teacher creates a problem for the students, then stands aside while they figure out the answer. The method requires students to solve a series of experimental problems. Each student must discover everything for himself and nothing is told to him. Leads students to discover facts using experiments, gadgets, and books. In this method, children behave like investigators.

In the step-by-step heuristic method, the student is given a problem sheet with minimal instructions and is required to perform experiments related to the problem at hand. You must follow the instructions and report your actions and results in your notebook. He should also put his conclusion. In this way, he conducts research from observation.

This method of teaching science has the following advantages:

Develops the habit of photography and inquiry among students. Develops the habit of self-study and self-management. It develops scientific attitudes among students, makes them



truthful and honest, so that they they learn to make decisions through real experiences. This is a psychologically healthy educational system, because it is based on "learning by doing" to the maximum. Forming the habit of hard work in students. In this way, most of the work is carried out at school, and therefore o The teacher does not have to worry about assigning homework. This ensures individual attention and closer communication with the teacher. These connections help to establish a cordial relationship between the teacher and the student. We can highlight the following disadvantages of using the heuristic method in teaching a certain subject:

The method requires great efficiency and hard work, experience and preparation from the teacher. There is a tendency on the part of the teacher to emphasize the branches and parts of the subject that devote themselves to heuristic treatment, ignoring the important branches that do not involve measurement and quantitative work. This is not suitable for beginners. At the initial stage, students need adequate guidance, if it is not given, it can create apathy towards the students. In this method, great importance is attached to practical work, which can lead the student to form a wrong idea about the nature of science in general. They believe that science is something that should be done in a laboratory.

In the heuristic approach, one of the parties, without trying to accept his approach to the solution of the problem, uses the method of persuasion, inner feeling, and common sense to convince the participants of the dispute to his point of view.

Subjects are integrated in primary grades. In this way, the effectiveness of the lesson will be achieved, time will be used efficiently, and learning will be better. Game activities are also used in integration lessons. Game activity relieves the student's fatigue in the lesson, increases thinking ability, helps independent thinking, increases interest in the lesson. With this, the teacher and the student participate 100%, and absenteeism will decrease by itself. We effectively use various didactic games in the lesson.

Integration in primary education is not a one-sided, but comprehensive development of the child's knowledge and imagination of the world. Because the child learns to look at the world through the eyes of a mathematician, biologist, athlete, artist, master of words, inventor, craftsman, master. Creating the world means imagining it as a whole. Of course, the use of game activities between lessons gives a good result and refreshes the child mentally. We know the types of games, their timely and reasonable use depends on the skill of the teacher.

Thus, it is clear that the use of didactic game technology in the process of integrating primary school classes is highly effective. In the development of the technology of integration of the educational process, the use of modern technologies increases the interest of students in learning and learning, increases cognitive activity, and makes it possible for the educational process to be at a high level.

In conclusion, it should be noted that teaching of primary education has its own characteristics as well as the teaching of each subject. In particular, it is appropriate to choose advanced pedagogical technologies for each subject in primary education.

In this article, I tried to describe the Heuristic method in primary education practical training. During my scientific research, I came to these conclusions about the Heuristic method. When applying the heuristic education method, the teacher is required to search for new knowledge using various tools. The teacher informs the students of a part of the knowledge, and the rest of the knowledge is acquired by the students based on finding answers to their questions in the process of solving knowledge tasks, they acquire knowledge independently. Dividing the

problem set by the teacher into several views, and students following the sequence in their execution is considered an important methodical aspect. That's why this method is also called partial search method. Heuristic and research methods require students to have the skills and abilities to organize high-level cognitive activities that acquire a creative character. As a result, students can acquire new knowledge independently.

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