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FORM, METHOD AND TOOLS OF TEACHING STUDENTS TO LOGICAL THINKING BASED ON INNOVATIVE EDUCATIONAL TECHNOLOGIES

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Annotation:
Logical thinking organizes the teaching of students to make decisions and find the necessary information in theoretical and practical difficult situations using the acquired knowledge and skills. All this indicates that the development of logical thinking, if it is not the main task, becomes one of the most important during the student's schooling. In this article, thoughts and comments are made about the forms, methods and means of teaching students to think logically based on innovative educational technologies.

Keywords: Logical thinking, methodology, tools, innovative education, pedagogical technologies, reasoning, mental activity, analysis methodology, audio-visual materials, young people, game methods.

INTRODUCTION

By forming the ability of logical thinking in students, it increases their knowledge and skills, including the ability to think rationally and deeply before making a decision. Logical thinking is proven to be successful in future academic and social life. First of all, it should be noted that why do our educational systems and curricula often test students' memory and memorization skills? I think logic and success are related concepts. If students have strong logic and analytical skills, their ability to make the right decisions will also develop. In the development of logical thinking, the following are important: analysis, synthesis, working with concepts, drawing conclusions, reasoning, arguing, and most importantly, developing the habit of independent thinking, looking for unusual solutions. Mental activity, like any other activity, must be trained and developed. In the modern world, a child often faces similar difficulties, so this topic is the most relevant today.

By utilizing these approaches, educators can enhance students' critical thinking, problem-solving abilities, and analytical skills, enabling them to thrive in an increasingly interconnected and data-driven world. Interactive simulations and virtual reality provide immersive and engaging experiences that allow students to apply logical thinking in real-world scenarios. Through simulations, students can explore complex systems, experiment with cause-and-effect relationships, and analyze the outcomes of different actions. Virtual reality experiences offer a three-dimensional environment that simulates real-world

situations, allowing students to engage with and solve problems in a more interactive and experiential manner. These technologies provide a hands-on approach to logical thinking, enabling students to develop problem-solving strategies and understand the consequences of their decisions. Gamification involves incorporating game elements and mechanics into educational activities to enhance student engagement and motivation. Through game-based learning, students are presented with challenges and puzzles that require logical thinking to solve. Gamification promotes problem-solving, critical thinking, and decision-making skills, as students navigate through various levels or quests. By creating a competitive and rewarding environment, gamification stimulates students' logical thinking and encourages them to apply different strategies and approaches to overcome obstacles.

Digital platforms and educational apps offer a wide range of gamified learning experiences that foster logical thinking skills. Inquiry-based learning encourages students to ask questions, investigate problems, and explore solutions independently. This method promotes logical thinking by challenging students to analyze information, evaluate evidence, and draw logical conclusions. Through guided inquiry activities, students actively participate in the learning process, formulate hypotheses, conduct investigations, and communicate their findings. Innovative technologies, such as online research tools, databases, and collaborative platforms, facilitate inquiry-based learning by providing access to a vast array of resources and promoting information literacy skills. Collaborative problem-solving involves students working together in groups to solve complex problems. This method enhances logical thinking by fostering teamwork, communication, and critical analysis of different perspectives. Collaborative tools, such as online platforms, interactive whiteboards, and video conferencing, enable students to collaborate effectively, regardless of physical location. By engaging in collaborative problem-solving activities, students learn to analyze problems from multiple angles, propose solutions, and evaluate the strengths and weaknesses of different approaches. This method also enhances interpersonal skills and prepares students for future collaborative endeavors.

Every day man feels the need to use logic to solve problems. Formation and development is a life experience aimed at preventing mistakes that are made despite the presence of logical thinking, in a general sense. Humans need logic almost every day to solve various problems. It is used in scientific research, official work, order, organization of personal life. All these areas are based on its elements. By developing logical thinking, people can solve other everyday problems faster and more efficiently. For example, this is the ability to emphasize the main thing, discarding the secondary thing. How to develop these skills, we will consider later.

Cognitive activity consistently establishes existing connections between objects and events, as well as relationships between them. Cognition rises to a higher level than sensory perception, which gives only an external image without knowing the principles. This process has a regulatory and communicative role. People often do this in the form of speech in communication. The opinion is formalized in words, orally or in writing. The acquisition of

skills begins from childhood in communication with adults. There are following types of thinking:

1. Visually effective;
2. Visually descriptive;
3. Verbal and logical thinking;
4. Abstract makes sense.

By understanding the tasks and forms of logical thinking, you can clearly formulate the definition of this concept. This is a proof process. The goal is to draw conclusions from the premises. You should also consider its types in detail. Everyone has the ability to process information. That is, literally everyone believes that this is a natural function of the brain. Primary and secondary forms of logical thinking allow planning and regulating behavior. Also, drawing correct conclusions from the situation and organizing measures. We conclude that the ability to think logically is necessary, it can be developed or taught. The skill develops in several ways, and a person who has learned this art correctly analyzes information, solves emerging problems faster. Also, the culture of logical thinking helps to form a long-term perspective of your actions. This is helped by the ability to process existing data.

The concept is directly related to the mental activity of a person. It forces you to process information at a subconscious level. This should be done in order to establish a connection between the studied objects, to distinguish their forms and meaning among other bodies of the environment. From the above, we can conclude what "logical thinking" is. As a result of the thinking process, a person applies previously acquired knowledge in practice. Then, through reflection, they are processed. All constructions are connected in order in a logical chain. Conclusions are not based on assumptions, but on clear evidence, facts, caution, objectivity, and general laws of logic. In the end, the truth is reached based on existing premises.

Logic is not the same as knowledge, although its field corresponds to the field of knowledge. Logic is the common knower and arbiter of all private researches. It is not intended to find evidence; it only determines whether evidence has been found or not. Logic doesn't observe, it doesn't invent, it doesn't discover - it judges. Therefore, logic is the science of the functions of the mind that serves to evaluate evidence; it is the doctrine of the process of passing from known truths to the unknown, and of all other mental operations, as they assist in this process.

In summary, thinking allows you to build a chain of personal behavior, make the right conclusion and act in a specific situation. These aspects play an important role in situations where it is necessary to make an urgent decision. Ultimately, the goal is achieved through logical thinking. That's why now we have an opportunity to develop students' logical thinking skills through the integration of innovative and information technologies.

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