

TO DEVELOP LOGICAL THINKING IN STUDENTS  
(O'QUVCHILARDA MANTIQUIY FIKRLASHNI SHAKLLANTIRISH)

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**Annotation:** *This article analyzes the essence of logical thinking, its role in human thinking and life. Logical thinking encourages a person to draw conclusions based on accuracy, consistency and evidence. The theoretical aspects of logical thinking are revealed based on the works of Aristotle and other thinkers. The importance of logical thinking skills in modern education and work is also highlighted, and methods for its development are recommended. The article includes a scientific-theoretical and practical approach, which serves to increase the effectiveness of logical thinking in any field.*

**Keywords:** *Logical thinking, human, idea, critical thinking, thinking, syllogism, rules of logic.*

**Annotatsiya:** *Ushbu maqolada mantiqiy fikrlashning mohiyati, uning inson tafakkuri va hayotidagi o'rni tahlil etiladi. Mantiqiy tafakkur insonni aniqlik, izchillik va dalillarga asoslangan xulosalar chiqarishga undaydi. Aristotel va boshqa mutafakkirlarning asarlari asosida mantiqiy fikrlashning nazariy jihatlari ochib beriladi. Shuningdek, zamonaviy ta'lim va ish faoliyatida mantiqiy fikrlash ko'nikmalarining ahamiyati yoritilib, uni rivojlantirish usullari tavsiya etiladi. Maqola ilmiy-nazariy va amaliy yondashuvni o'z ichiga olgan bo'lib, har qanday sohada mantiqiy tafakkurning samaradorligini oshirishga xizmat qiladi.*

**Kalit so'zlar:** *Mantiqiy fikrlash, inson, g'oya, tanqidiy fikrlash, tafakkur, sillogizm, mantiq qoidalari.*

**Аннотация:** *В статье анализируется сущность логического мышления и его роль в мышлении и жизни человека. Логическое мышление побуждает человека делать выводы, основанные на ясности, последовательности и доказательствах. Теоретические аспекты логического мышления раскрываются на основе трудов Аристотеля и других мыслителей. В нем также подчеркивается важность навыков логического мышления в современном образовании и работе и рекомендуются методы их развития. Статья сочетает в себе научный, теоретический и практический подходы и служит повышению эффективности логического мышления в любой области.*

**Ключевые слова:** *Логическое мышление, человек, идея, критическое мышление, мышление, силлогизм, правила логики.*

Introduction. The 21st century is an era of rapid change, innovation and competition. New ideas, discoveries and technologies are the basis of the development of society. In such an era, one of the most important aspects for a person to achieve success is the ability to think logically. A person who can think logically will deeply analyze any situation, make the right decisions and find effective solutions to problems. The term “logic” (Greek logos), which is of Arabic origin, has meanings such as “thought”, “word”, “reason”, “law”. Its versatility is reflected in the expression of various things. In particular, the word logic is used, firstly, to denote the laws of the objective world (for example, in expressions such as "objective logic", "the logic of things"), secondly, to denote the set of laws and rules characterizing the forms of existence and development of thought, including the relationship between thoughts (for example, in the expression "subjective logic"), and thirdly, to denote the science that studies the forms and laws of thought. The object of study of the science of logic is thought. "Tafakkur" is also an Arabic word and is used as a synonym for the words "fikrlash" and "aqliy bilish" in the Uzbek language. Thought is a higher stage of knowledge. Knowledge of logic plays an important role, especially in engaging in science, conducting scientific research, systematically mastering the ever-increasing amount of scientific information, and quickly understanding the structure of scientific problems. In addition to emphasizing the importance of logic for scientific and theoretical work and practical human activity, it is necessary to deeply study life and understand the requirements of logic in each reality, which is a decisive condition for drawing true conclusions.[11]

Today, logical thinking is gaining great importance not only in the fields of education, science and technology, but also in everyday life. This article will extensively cover the essence of logical thinking, its advantages, methods of development, and its role in the development of society. Logical thinking is the ability to consistently analyze phenomena, concepts, and facts, determine causes and effects, and draw clear conclusions. This skill increases the level of human thinking and allows him to work more effectively. President of Uzbekistan Shavkat Mirziyoyev pays special attention to improving the quality of education and developing the logical thinking skills of young people. Presidential schools, new educational programs, and innovative educational technologies are important steps in this direction. In his opinion, the logical thinking of the younger generation determines the future development of the country. That is why the

emphasis on critical and analytical thinking in the educational process has become one of the important directions of state policy. Logical thinking is one of the most important human abilities, which helps to achieve success in all aspects of life. Today, this skill is necessary not only for personal development, but also for the general development of society. Therefore, each person should regularly work on developing their thinking, form problem-solving skills, and learn to make independent decisions. Only with such an approach can we lead the future generation to success! The democratic reforms being implemented in our country are interconnected with the issue of modernization of all aspects of pedagogical education. Today, logical thinking is gaining great importance in various spheres of life. Technologies are developing rapidly, the flow of information is accelerating, and critical thinking is becoming more and more important.

In an era when a logical approach is required, the role of this skill is increasing. Developing students' logical thinking in the education system is important for their future success. Because students with the ability to think logically excel in solving problems, thinking independently, and making the right decisions. Our President Shavkat Mirziyoyev pays special attention to developing students' logical thinking in the education system. The fact that logical thinking tests are conducted during the admission process to the Presidential Schools, established on his initiative, also indicates the great role of logical thinking in a child's life. Logical thinking is the process of developing a person's thinking ability, forming an analytical and critical approach. A person with the ability to think logically can distinguish truth from falsehood and use reliable sources. An analytical approach is important for effectively solving complex problems encountered in the modern world. Logical thinking allows you to clearly understand the problem, consider alternative solutions, and choose the most optimal option. Everyone is forced to make independent decisions in life. Logical thinking protects a person from manipulation and helps to make the right choice. Logical thinking helps people communicate effectively, express their thoughts clearly and reasonably.

Important aspects of logical thinking:

- ☑ Analytical thinking - analyzing the given information and drawing the right conclusions from it.
- ☑ Critical thinking - questioning existing ideas and information and determining the truth.
- ☑ Creative thinking - developing new and innovative approaches to solving problems.

✓ Systematic approach - understanding the connection between different problems and seeing them as a common system.

Logical thinking allows every person to make the right decisions, that is, to make important choices in life in a reasonable and rational way, to solve complex problems. It is of great importance to be able to analyze deeply and find the most optimal solutions, protect yourself from false messages and misconceptions, and defend your opinion reasonably. Logical thinking is not limited to exact or scientific disciplines. It is a skill that is important in various aspects of life, including everyday decision-making. Developing logical thinking in students provides the following advantages:

-Effective problem solving - Students acquire the skills to identify complex problems and find solutions to them.

-Analytical thinking - The ability to analyze data and draw the right conclusions increases.

-Creative approach - Students learn to develop innovative and creative solutions based on existing knowledge.

Logical thinking is necessary not only for students, but for every person. Because a person finds himself in various situations in this life. The thinking of the younger generation is growing day by day thanks to modern technology and innovations. In addition, when making decisions, it is also important for a person to choose the path that is beneficial for him. That is why today, in any educational institution, great importance is attached to the ability of a child to think independently, to find different solutions to a problem, to be able to get out of any situation without difficulty, and it remains one of the most relevant issues of today. A person who thinks logically can ask himself the following questions. “How did this problem arise?”, “What other solutions are there?”, “What results will occur if this decision is made?”, etc.

Methods of logical thinking:

1. Syllogism (premise)

2. Induction and deduction Rules of Formal Logic

Logical thinking is the art of drawing conclusions based on strict logical laws. Logical thinking and critical thinking complement each other. Critical thinking assesses the reliability of information, and logical thinking helps to draw logical conclusions from this information. Exchanging ideas and justifying one's own opinion is one of the best ways to develop logical thinking. Developing students' logical thinking helps them to understand subjects more deeply. Subjects such as mathematics, computer science, physics, and pedagogy are directly related to logical thinking. Many educational psychologists have conducted research on

logical thinking. Below I will cite the opinion of one of the philosophers, Aristotle. Aristotle considered logical thinking to be the basis of scientific knowledge. He developed the theory of syllogism (premise) and for the first time formulated logic as an independent science. In his opinion, "Reasonable knowledge should be based on the rules of logic." In order to develop thinking, a person must analyze and carefully study each thought in every situation. Programmers, engineers and scientists rely on logical thinking to solve complex problems in their work. Strategic thinking and quick decision-making are essential in the competitive business world. It is clear that logical thinking is needed in every area of life. Especially in everyday life, a person who can think logically does not believe false news, does not make wrong decisions and can rationally assess different situations. Independent thinking - Students learn to make independent decisions and defend their opinions. The ability to think logically increases the level of students' mastery in all subjects.

#### Main methods of developing logical thinking

The following methods are recommended to be used to develop students' logical thinking skills: For example:

##### 1. Question and answer method

Teachers should ask students open-ended and critical thinking questions. For example: Students should ask real-life problems presenting and directing them to solve them independently or in groups is one of the effective methods. Students' thinking can be sharpened through mathematical and logical puzzles. For example, sudoku, chess, and logic puzzles are useful.

##### 2. Debates and discussions

Students should participate in debates on specific topics and learn to justify their opinions with evidence. Students develop logical thinking by conducting research on topics they are interested in, collecting information, and drawing conclusions.

##### 3. The role of the teacher

The teacher plays a key role in developing logical thinking in school. It can help students through the following methods: Giving students the opportunity to think independently, creating and discussing problem situations, stimulating students' creative thinking, using various didactic games and interactive methods

##### 4. The role of modern technologies in the development of logical thinking

Today, modern technologies play a great role in the development of logical thinking.

In the process of forming logical thinking, it is also important to assess the development of students. For this: the level of logical thinking of students is

determined through tests and assignments. The approach of students is assessed by analyzing problem situations. Attention is paid to the ability of students to think independently.

In conclusion, logical thinking is the main criterion of human thinking and plays an important role in any scientific and philosophical research. As Aristotle noted, thinking should be based on discipline, clear rules and evidence. This leads a person to the truth and protects against incorrect conclusions. Therefore, the formation and development of logical thinking is not only scientific, but also of great importance in our daily lives. Logical thinking plays an important role in the intellectual development of students. To equip them with this skill, teachers should effectively use various methods. The use of modern educational methods and technologies greatly contributes to increasing the level of logical thinking of students. In order to raise a generation that can think successfully and critically in the future, the formation of logical thinking in the educational process should be a priority. After all, logical thinking is the force that creates the future.

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