

THEORETICAL IMPORTANCE OF DEVELOPING LOGICAL AND CRITICAL THINKING SKILLS IN ELEMENTARY SCHOOL STUDENTS

Kayumova Shoxsanam To'lqin qizi

Doctor of Philosophy in Educational Sciences (PhD), Associate Professor,

Email: shoxsanamkayumova0523@gmail.com

Qo'chqorova Kamola Yusupjonovna

Gulistan State University, Faculty of Psychology and Social Sciences, 4th grade student

Email: quchqarovakamola0899@gmail.com

Annotation: Through developing logical and critical thinking skills in elementary school students, a different perspective towards subjects and textbooks is formed, namely critical analysis, questioning assumptions, basing conclusions on evidence, thinking differently from other students, and developing the ability to approach situations differently.

Key Words: Logic, criticism, success, income, strong memory, movement, motivation, decision-making, proving evidence

Currently, the development of logical and critical thinking skills in elementary classrooms is increasingly emphasized. In this scenario, through the development of these abilities, children are observed to look at their surroundings differently, not with ordinary and simple thoughts like other children in lessons and subjects, but instead with skeptical views, critical analysis, and the ability to draw conclusions based on evidence. Through this, children are seen to engage in thinking differently from others and handle situations such as questioning and adapting. Based on the above ideas, let's delve into the meaning of Logic. What is Logic? What is logical thinking?

Before discussing the concepts of critical and logical thinking and forming opinions about them, let's briefly review their history. Criticism, logic, and similar concepts are also present in ancient and famous terminologies. In ancient times, figures like Socrates and Plato also speculated on these topics and developed some ideas. The term "criticism" originated from words like "evaluation" and "exam," and in addition to this, it has meanings close to words like "thought," "mind," and "speech."

Logic is not just the ability to think but also the ability to reason and make correct conclusions. That is, in daily human activities and relationships, the ability to think logically, orderly, clearly, and fundamentally is understood. Human thought is always governed by logical laws. People who speak correctly without knowing many spelling rules also think correctly. However, this does not mean that the practical importance of logic is absent. Logical thinking is a concept that explains the intellectual and practical activity of a person observing and understanding life, the world, or phenomena in a clear, precise, and understandable manner for others, including the insight of reality or imagination. Logical thinking ability is unique to all healthy individuals. Logical thinking is universal for human cognitive activities. Thinking is a complex, intricate process that forms a whole with various, complex, and coherent intellectual processes. When we talk about logic, it is understood that in daily human activities and relationships, people think logically, orderly, clearly, and fundamentally. We can understand the meanings of words in various languages because all human thinking conventions are the same. Logical thinking is of great importance in the scientific and practical activities of a person.

The logical nature of thinking ensures the effectiveness, influence, and productivity of spiritual and cognitive events related to the activity. Logical thinking is one of the highest functions of thinking, indicating the connection of thoughts based on reasoning, coherence, and consistency.

Therefore, logical thinking explains the observing, listening, knowing, feeling, and understanding of phenomena, reality, or imagination in a clear and understandable manner for others. Logic is the process of thinking in written and oral speech. In this process, the laws of identity, contradiction, and the excluded middle manifest themselves in a harmonious manner. The law of identity indicates that every object-event is exactly equal to itself and the correct use of repeated words in thought, speech, and text. The law of contradiction stipulates that at any one time, every event is not contradictory. The law of sufficient reason in an appropriate condition indicates whether the event or event should be in the same state or not. It is necessary for the human voice, educational, and leadership activities to be suitable for logical thinking. This indicates the importance of logical continuity, memory, and achieving specific outcomes in all areas of activity. Illogicality is the opposite of logical thinking. Logical thinking also acquires great importance in the field of spiritual-moral. The organization of this activity on the basis of logical principles ensures the effectiveness, influence, and productivity of spiritual-moral events. Logical thinking is one of the highest functions of thinking, indicating the connection of thoughts based on reasoning, coherence, and consistency. Therefore, logical thinking explains the observing, listening, knowing, feeling, and understanding of phenomena, reality, or imagination in a clear and understandable manner for others. Logic is the process of thinking in written and oral speech. In this process, the laws of identity, contradiction, and the excluded middle manifest themselves in a harmonious manner. The law of identity indicates that every object-event is exactly equal to itself and the correct use of repeated words in thought, speech, and text. The law of contradiction stipulates that at any one time, every event is not contradictory. The law of sufficient reason in an appropriate condition indicates whether the event or event should be in the same state or not. It is necessary for the human voice, educational, and leadership activities to be suitable for logical thinking. This indicates the importance of logical continuity, memory, and achieving specific outcomes in all areas of activity.

We have learned about logical thinking, and logic concepts, but they need to be developed in a certain order, what changes occur in children when they are formed. What is the optimal variant that has been advanced today? Let's talk about the best ways to successfully improve logical thinking and teach children.

Ways to develop logical thinking - logical games, puzzles, problems and decision-making, playing chess, reading books, learning critical thinking, participating in debates, imagining the thinking process, simulating situations, daily activities, and more. In this process, paying serious attention to each element, finding unrelated or ambiguous aspects between different subjects, discovering new facts and comparing them allows for the development of logical thinking. In the learning process, using tasks aimed at developing logical thinking, using project methods, research methods, programming and problem-based learning methods is recommended.

Why should logical thinking be developed in elementary school students? What can it give to them by developing logical thinking skills in our students? Based on my experience, I would like to start my opinion with observations made in the early grades of school. At the beginning of the new school year, various places are filled with students who have enjoyed themselves and continued their education in various places. During this time at school, there are

always such difficulties as mental development, the liveliness of dreams, and the lack of attention. In this case, the teacher used the test method to easily increase the attention, improve the attention of the students, and carry out tasks other than difficult tasks with other students. The test was not based on one subject but was based on logic. This test revealed the difficult situations in which the students were working. However, the continuity of these tests, the help of the teacher in the quality of their performance and the timely transformation into quality helped. From this conclusion, it is possible to think that the development of logical and critical thinking abilities in students will provide them with great and wide opportunities. Through this, students can learn a lot of information and apply it, the strong memory can be effectively utilized, understand their goals, thoughts, and good relationships, questions from others, good thinking, and developing the ability to do what others do not.

The most fundamental of these is the idea that "Through this method, we evaluate the imaginative ideas, classify the best ones and use them to improve our lives" are formed in them. Along with the development of logical thinking abilities in children, the ability to analyze at the same time with the formation of logical reasoning is also developing. Analysis is the process of breaking down a complex problem into smaller parts to understand it better. In this case, the child can have various advantages, let's see how:

- Evaluate the situation;
- Search for information;
- We make decisions;
- We compare evidence.

We have summarized all of the above and made them tangible and shaped them into habits, adding them to the system of values in the student, of course, not only in the early grades but also in other positions will ensure great success. Developing such techniques in students, especially in the early grades, requires the ability to quickly develop this situation. It is very effective to use a set of tests, mobile applications, and websites for solving this problem and for learning.

The development of logical and critical thinking skills in elementary school students holds profound theoretical significance, shaping cognitive processes and fostering intellectual growth. This article explores the theoretical foundations and importance of nurturing these essential skills during early education.

Foundations of Logical and Critical Thinking. Logical thinking involves the ability to reason systematically, make connections between ideas, and draw conclusions based on evidence. It adheres to principles of consistency, coherence, and rationality in thought processes. Critical thinking, on the other hand, entails analyzing information, questioning assumptions, and evaluating arguments to form well-grounded judgments.

Theoretical Perspectives. Piaget's Cognitive Development Theory: Jean Piaget emphasized that children actively construct their understanding of the world through cognitive processes like classification, seriation, and conservation. Logical thinking plays a key role in Piaget's stages of cognitive development, such as concrete operational and formal operational stages.

Vygotsky's Socio-Cultural Theory: Lev Vygotsky emphasized the role of social interactions and cultural tools in cognitive development. According to Vygotsky, logical thinking is scaffolded through social interactions and language use within the zone of proximal development (ZPD).

Bloom's Taxonomy: Benjamin Bloom's taxonomy categorizes cognitive skills into a hierarchy, with higher-order thinking skills like analysis, synthesis, and evaluation at the top. Logical and critical thinking skills align with these higher-order cognitive processes.

Importance of Developing Skills in Elementary Students

Cognitive Development: Developing logical and critical thinking skills enhances cognitive development by promoting abstract reasoning, problem-solving abilities, and metacognitive awareness.

Academic Achievement: Proficiency in logical and critical thinking correlates with academic success across various subjects. These skills enable students to comprehend complex concepts, evaluate information, and articulate reasoned arguments.

Lifelong Learning: Early cultivation of logical and critical thinking fosters a disposition for lifelong learning. Students equipped with these skills are better prepared to navigate intellectual challenges and engage critically with new information throughout their lives.

Decision-Making and Problem-Solving: Logical and critical thinking skills empower students to make informed decisions and solve problems effectively. They learn to approach challenges analytically, weigh evidence, and consider multiple perspectives.

Creativity and Innovation: Contrary to popular belief, logical and critical thinking complement creativity by providing a structured framework for innovative ideas. Creative thinking often involves critically evaluating unconventional solutions.

Strategies for Developing Logical and Critical Thinking

Inquiry-Based Learning: Encourage exploration, questioning, and investigation to stimulate logical thinking and problem-solving skills.

Socratic Questioning: Promote critical thinking through open-ended questions that challenge assumptions and encourage deeper reflection.

Collaborative Activities: Engage students in group discussions, debates, and cooperative projects to enhance reasoning and communication skills.

Analytical Tasks: Assign tasks that require students to analyze information, evaluate arguments, and draw evidence-based conclusions.

Reflection and Metacognition: Encourage self-assessment and reflection to develop metacognitive skills, such as monitoring and adjusting thinking processes.

CONCLUSION

In conclusion, the theoretical underpinnings of developing logical and critical thinking skills in elementary school students are rooted in cognitive psychology and educational theory. By fostering these skills early in education, educators pave the way for intellectual growth, academic achievement, and lifelong learning. Through intentional pedagogy and targeted strategies, schools can empower students to become independent thinkers, problem-solvers, and contributors to a knowledge-driven society. It is possible to improve the critical and logical thinking abilities of students, to change their attitude towards the outside world, and to provide them with the ability to adapt to difficult and complex situations with mandatory and firm answers. The ability to adapt to situations is enhanced by providing them with critical situations, assessing them positively with positive skeptical views. It is worth noting that each parent is superior to their child in terms of contribution to their homeland, their need, their profit, and they must participate in the growth of their child in this way, in a timely and opposite manner, in line with the demands of the time, and by looking at their education, and by taking a backward look at what the child has done.

REFERENCES:

1. Qayumova, S. (2022). БЎЛАЖАК БОСШЛАНҒИЧ СИНФ ЎҚИТУВСЧИЛАРИНИ TIMSS ХАЛҚАРО БАҲОЛАШ ДАСТУРИ АСОСИДА МЕТОДИК ТАЙЁРГАРЛИГИНИ РИВОЖЛАНТИРИШДА МУЛТИМЕДИЯ ВОСИТАЛАРИНИНГ ЎРНИ. *Science and innovation*, 1(B4), 159-162.
2. Shohsanam, K. (2023). THEORETICAL IMPORTANCE OF ARTIFICIAL INTELLIGENCE. *Science and innovation*, 2(Special Issue 3), 159-162.
3. Kayumova, S. T. qizi, Sharipov, S. R., Abdullayev, K. A. ugli, & Nurmatov, I. S. (2023). THE THEORETICAL FOUNDATIONS OF IMPROVING STUDENTS' READING PROFICIENCY BASED ON MODERN TRENDS. *RESEARCH AND EDUCATION*, 2(12), 57-61.
4. To'liqin qizi Kayumova, S., Sharipov, S. R., ugli Abdullayev, K. A., & Nurmatov, I. S. (2023). THE THEORETICAL FOUNDATIONS OF IMPROVING STUDENTS' READING PROFICIENCY BASED ON MODERN TRENDS. *RESEARCH AND EDUCATION*, 2(12), 57-61.
5. Kayumova, S. T. K. (2022). DIFFERENCES BETWEEN PISA AND TIMSS INTERNATIONAL ASSESSMENT PROGRAM. *Academic research in educational sciences*, 3(NUU Conference 2), 753-757.
6. Sh. Kayumova (2023). DIDACTIC PRINCIPLES FOR DEVELOPING NATIVE LANGUAGE AND READING LITERACY OF FUTURE PRIMARY SCHOOL TEACHERS. *Science and innovation*, 2 (B9), 57-60. doi: 10.5281/zenodo.8348958
7. Sh. Kayumova (2023). DEVELOPMENT OF STUDENTS' READING LITERACY THROUGH TRIZ PEDAGOGY. *Science and innovation*, 2 (B10), 157-160. doi: 10.5281/zenodo.8433398
8. Qayumova, S. (2022). БЎЛАЖАК БОСШЛАНҒИЧ СИНФ ЎҚИТУВСЧИЛАРИНИ TIMSS ХАЛҚАРО БАҲОЛАШ ДАСТУРИ АСОСИДА МЕТОДИК ТАЙЁРГАРЛИГИНИ РИВОЖЛАНТИРИШДА МУЛТИМЕДИЯ ВОСИТАЛАРИНИНГ ЎРНИ. *Science and innovation*, 1(B4), 159-162.
9. Urol o'gli, M. M. (2024, April). ENHANCING READING LITERACY THROUGH TECHNOLOGY INTEGRATION. In *International conference on multidisciplinary science* (Vol. 2, No. 4, pp. 229-233).
10. To'liqin qizi Kayumova, S., ugli Abdullayev, K. A., ugli Khujamurodov, O. M., & Markabayev, F. T. (2024). THE THEORETICAL IMPORTANCE OF THE STEAM PROGRAM IN THE DEVELOPMENT OF THE QUALITY OF EDUCATION. *RESEARCH AND EDUCATION*, 3(1), 29-33.
11. Qizi, Q. S. T. L. (2024). ENHANCING THE READING LITERACY OF ELEMENTARY SCHOOL STUDENTS THROUGH MODERN TRENDS. *Science and innovation*, 3(Special Issue 18), 190-193.
12. Kayumova, S., Naraliyeva, S., & Musurmonkulov, M. (2024). IMPROVING READING LITERACY SKILLS IN FUTURE PRIMARY SCHOOL TEACHERS. *Modern Science and Research*, 3(5), 4-10.
13. Shahridinovna, K. S. (2023). Didactic Features Of Development Of Nature Perception Skills Of Primary School Students. *Eurasian Journal of Learning and Academic Teaching*, 19, 183-187.

14. Shahriddinova, K. S. (2023). INTRODUCING CHILDREN OF PRIMARY SCHOOL AGE WITH THE WORLD. *American Journal of Applied Science and Technology*, 3(06), 09-14.

15. Shahriddinova K. S. Didactic Features Of Development Of Nature Perception Skills Of Primary School Students //Eurasian Journal of Learning and Academic Teaching. – 2023. – T. 19. – C. 183-187.

16. Shahriddinova K. S. INTRODUCING CHILDREN OF PRIMARY SCHOOL AGE WITH THE WORLD //American Journal of Applied Science and Technology. – 2023. – T. 3. – №. 06. – C. 09-14.

17. Karimova, S. (2022). THE ROLE AND IMPORTANCE OF" NATURAL SCIENCES" IN THE DEVELOPMENT OF UNDERSTANDING OF NATURE IN GENERAL SECONDARY SCHOOLS. *Science and innovation*, 1(B6), 214-218.

18. Karimova S. THE ROLE AND IMPORTANCE OF" NATURAL SCIENCES" IN THE DEVELOPMENT OF UNDERSTANDING OF NATURE IN GENERAL SECONDARY SCHOOLS //Science and innovation. – 2022. – T. 1. – №. B6. – C. 214-218.

19. Karimova S. CHARACTERISTICS OF NATURAL TEACHING METHODOLOGY //Oriental renaissance: Innovative, educational, natural and social sciences. – 2021. – T. 1. – №. 11. – C. 737-740.

18. Karimova, S., & Ashurova, M. (2023). TYPES OF EDUCATION. *Modern Science and Research*, 2(8), 161–163. Retrieved from <https://inlibrary.uz/index.php/science-research/article/view/22537>

20. Mamatova, X., Karimova, S., & Turg'unboyeva, M. (2023). EDUCATION IS UPBRINGING, KNOWLEDGE IS SALVATION. *Modern Science and Research*, 2(8), 164–166. Retrieved from <https://inlibrary.uz/index.php/science-research/article/view/22538>

21. Mamatova, . H., Karimova, S., & Mamayusupova, . Z. (2023). PEDAGOGICAL ANALYSIS IN THE WORKS OF ALISHER NAVOI. *Modern Science and Research*, 2(9), 5–8. Retrieved from <https://inlibrary.uz/index.php/science-research/article/view/23865>

22. Karimova S., Habibullayeva S. THE ESSENCE OF THE EDUCATIONAL PROCESS IN PEDAGOGY //Modern Science and Research. – 2024. – T. 3. – №. 1. – C. 40-44.

23. Karimova Sevara Shaxriddin Qizi. (2023). FORMATION OF NATURE AWARENESS SKILLS OF PRIMARY SCHOOL STUDENTS. *International Scientific and Current Research Conferences*, 1(01), 43–45. Retrieved from <https://www.orientalpublication.com/index.php/iscrc/article/view/1105>

24. Mamatova H., Karimova S., Mamayusupova Z. PEDAGOGICAL ANALYSIS IN THE WORKS OF ALISHER NAVOI //Modern Science and Research. – 2023. – T. 2. – №. 9. – C. 5-8.

25. Sevara, K., & Maftuna, S. (2024, February). BOSHLANG 'ICH SINFLARDA ONA TILI DARSLARIGA QO 'YILGAN ZAMONAVIY TALABLARNING XUSUSIYATI VA AHAMIYAT. In *International conference on multidisciplinary science* (Vol. 2, No. 2, pp. 65-67).

26. Sevara, K., & Mahliyo, X. (2024, February). BOSHLANG'ICH SINF O'QUVCHILARIDA MATEMATIK QOBILİYATLARINI RIVOJLANTIRISHDA QO'LLANILADIGAN METODLAR. In *International conference on multidisciplinary science* (Vol. 2, No. 2, pp. 68-70).