ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23

American Academic publishers, volume 05, issue 12,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

FACTORS AND PRINCIPLES OF DEVELOPING THINKING IN THE EDUCATIONAL PROCESS

Kasimova Gavhar

Associate Professor, Turan University.

Gulnoza Ru'ziyeva

Master of Turan University

Abstract. The development of thinking in the educational process is of great importance in increasing the intellectual potential of the student, forming the skills of finding independent solutions, and developing a conscious attitude to educational activities. The process of developing thinking is formed under the influence of many pedagogical factors. These include the organization of the learning environment, the teacher's methodological approach, the use of interactive and innovative tools, game and project technologies, the use of problem situations, and tasks that increase student activity. In modern education, much attention is paid to the development of analytical, logical, critical, and creative types of thinking. The principles of education — consistency, systematicity, activity orientation, differentiation and a person-centered approach — constitute the methodological basis for the development of thinking. This topic covers the factors that form the ability to think in the educational process, modern pedagogical technologies and the principles of their effective application. This research offers practical recommendations for educators on developing the thinking culture of students.

Keywords: thinking ability, educational process, creative thinking, critical thinking, analytical thinking, pedagogical factors, principles, interactive methods, innovative technologies, independent thinking.

One of the main tasks of modern education is not just to impart knowledge, but to educate an independent, analytical, creative person. In an era of intensified global competition and increased information flow, it is more important for a person to have a thinking culture than knowledge. Thinking ability is manifested as a key factor in a person's life activities, decision-making, problem solving, and innovation. Therefore, the consistent study of factors, methods and principles that serve to develop thinking at different age stages in the educational process is one of the current directions of pedagogical science.[1]

This article will highlight the psychological and pedagogical essence of the ability to think, the main factors that develop it, modern methods used in the educational process, as well as the principles that serve to develop thinking.

Thinking is a process of a person analyzing, comparing, generalizing reality and creating new knowledge. Psychologists interpret thinking as a higher cognitive process. It is formed inextricably linked with speech, perception, memory and imagination.

In the educational process, the ability to think performs the following tasks:

1. Conscious assimilation of knowledge. Active participation in the thinking process consolidates knowledge.

ORIGINAL ARTICLE
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE
ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 12,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

2. Solving problem situations. The student learns to find solutions independently.

3. Formation of creativity. The opportunity to create a new idea, to see an existing topic from a new angle arises.

4. Development of a critical approach. The student can distinguish between facts and opinions, evaluate them.

5. Strengthening communicative competence. Helps to express thoughts clearly, consistently, and logically.[2]

Since the content of education today is not only aimed at providing information, but also at preparing a person who can process information, the development of thinking remains a priority task.

An interesting, meaningful, and stimulating learning environment revitalizes the thinking process of students. In such an environment, students ask questions, discuss, analyze, and actively participate in debates.

The teacher is the main organizer of the development of thinking. His style of asking questions, creating problem situations, and systematically building the lesson directly affect the activity of thinking.

Problem-based learning is one of the most effective forms of thinking. The problem arouses interest and the need for research in the student. He tries to find the answer independently, not from the teacher.

Games strengthen thinking processes such as analysis, comparison, and classification. Brainstorming, logic games, and strategic games are the most vivid examples of this.

An independent student not only receives information, but also processes it, compares it, summarizes it, and draws conclusions - this is an important experience for thinking.

Speech is the external manifestation of thinking. The more the student speaks and asks questions, the more thinking develops.

Logical thinking includes processes such as determining cause-and-effect relationships, coming to conclusions, and substantiating arguments. This type occupies the main place in mathematics, physics, and chemistry lessons.

Critical thinking is the ability of the student to distinguish between facts and opinions, select reliable sources, and rely on evidence this is an integral part of 21st century competencies.

Analytical thinking is the ability to break down information into parts, compare, and generalize. It is necessary when studying complex topics.

Creative thinking is the ability to create innovations and take an unusual approach to the current situation. This type is actively used in literature, art, and technology.[3]

Interactive methods are considered one of the most effective tools for activating thinking. These include:

ORIGINAL ARTICLE
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE
ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 12,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

"Brainstorming"

"Venn diagram"

"Cluster"

"Insert" technology

"Conceptual maps"

These methods force the student to think.[4]

Creating problem situations, asking questions, and organizing discussions increase the student's research activity. Questions such as "Why?", "How?", "What if?" strengthen thinking.

Working on a project develops the student's research, conclusion, information collection, and analysis skills. Since projects are connected with life experience, the thinking process deepens.

Working in a group teaches students to learn from each other, exchange ideas, and accept new points of view. Thinking is activated during the discussion process.

Multimedia, simulators, and interactive programs encourage students to think independently. For example, virtual experiments, logical games, and intellectual platforms deepen thinking.

The student controls every activity he or she participates in with his or her mind. Therefore, it is necessary to ensure active participation in the lesson process.

It is necessary to develop thinking skills systematically, not through one-time training.

Presenting educational material in a way that moves from simple to complex forms intensively develops thinking.

Each student has individual abilities. Their thinking speed and perception characteristics differ. Therefore, an individual approach is necessary.

The thinking process often develops through communication. Students think together, compare, evaluate, and improve their ideas.

The teacher is the main mediator influencing the development of thinking. It should:

form the student a culture of asking questions;

direct them to independent research;

teach them to draw logical conclusions;

help them compare and generalize ideas;

create opportunities for creative thinking.[5]

The teacher's questioning skills are also of great importance. A correctly asked question is the starting point of thinking.

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23

American Academic publishers, volume 05, issue 12,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

In conclusion, the development of thinking skills in the educational process is the most important pedagogical process that increases a person's intellectual potential, prepares them for life, and teaches them to make independent decisions. Factors that contribute to the development of thinking - the development of the learning environment, the use of modern interactive methods, problem-based learning, support for creativity, and a person-centered approach - ensure the intellectual growth of the student. The principles help to organize this process consistently, systematically, and effectively. As a result, the educational process forms an individual who is independent, critical and creative in thinking, able to analyze problems, and capable of making decisions.

References

1. Hasanov B., Xodjayev A. Pedagogik texnologiyalar va pedagogik mahorat. Toshkent: Fan, 2020. – 55–112-betlar.

2. Yo‘ldosheva R. O‘quvchilarda tanqidiy fikrlashni rivojlantirish metodlari. Toshkent: TDPU nashriyoti, 2021. – 33–79-betlar.

3. Dewey J. How We Think. New York: D.C. Heath, 2018. – 17–65-betlar.

4. Vygotskiy L.S. Mantiqiy fikrlash psixologiyasi. Moskva: Pedagogika, 2017. – 41–98-betlar.

5. Bloom B. Taxonomy of Educational Objectives. Chicago: McKay, 2019. – 22–71-betlar