



FORMING CRITICAL THINKING COMPETENCE IN STUDENTS THROUGH MODERN EDUCATIONAL TECHNOLOGIES

Sharipov Sherzod Shamsiddinovich

Master's Student at Asian International University

Abstract

This article discusses the role of modern educational technologies in the formation of critical thinking competence in students. It also analyzes the concept of critical thinking, its pedagogical essence, interactive methods, information and communication technologies, multimedia tools, and the advantages of problem-based learning technologies. The effective use of modern technologies in the educational process is based on the development of students' independent thinking, problem analysis, reasoning, and conclusion-making skills.

Keywords: Critical thinking, competence, modern educational technologies, interactive methods, pedagogical technology, multimedia, innovative approach.

Introduction

The “Action Strategy” for 2017–2021, approved by the decree of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev dated February 7, 2017, identified the development of the education sector as one of the priority areas. The document places special emphasis on the development of the social sphere, assessment of the quality of education based on international criteria, improvement of the activities of higher educational institutions, and stimulation of research and innovation activities. The fourth area of this document emphasizes the need to develop the social sphere, including assessment of the quality of education based on international standards, increase the efficiency of the activities of higher educational institutions, support for research and innovation activities, and the creation of high-tech centers and specialized laboratories. [1].

The successful implementation of these tasks is, first of all, closely related to the proper establishment of the school education system. Therefore, organizing the school education process on a scientific basis and deeply analyzing the impact of family socialization on the child's personality are emerging as one of the urgent problems of contemporary pedagogical research [2].

In today's era of globalization and informatization, the education system is facing completely new challenges. Modern society requires not only people who have acquired ready-made knowledge, but also people who can think independently, analyze problems and make the right decisions. Therefore, developing critical thinking skills in students in the educational process is one of the urgent issues [3]. Critical thinking is a complex intellectual activity based on analyzing, comparing, evaluating, reasoning, and drawing conclusions from information. Modern educational technologies serve as an important tool in the formation of such a competency [4].



The introduction of innovative pedagogical technologies and teaching students to think creatively and critically are being identified as one of the priorities of state policy in the education system of the Republic of Uzbekistan [5].

In the modern education system, teaching mathematics and implementing a number of systematic works aimed at providing students with comprehensive quality education are one of the priority goals of the current era. In implementing a quality education system, the introduction of information media and the introduction of lessons based on innovative technologies and the creation of modern software tools are one of the urgent issues of today. Since the world is changing rapidly today, students should not only be limited to acquiring knowledge, but also be able to think independently. Therefore, critical thinking skills are becoming very important. What is critical thinking? Critical thinking means not just trusting every piece of information, but analyzing, comparing, asking questions and drawing the most correct conclusion. For example, comparing something new with other sources when reading it or considering different aspects before making a decision on an issue is critical thinking. Why is this important? Students are more successful in life if they can make independent decisions. They are protected from false information, learn to solve problems quickly, and understand knowledge more deeply. How can critical thinking be developed? Asking questions: When teaching any topic, questions such as “why?” and “what if it were different?” should be taught. Discussion and debate: Discussing different ideas in small groups during the lesson strengthens students’ thinking. Using real-life situations: Students can be taught to think independently by analyzing everyday problems. Using technology: It is useful to conduct interactive Q&A using digital platforms (Google Forms, Padlet, Quizizz). Economic, political, and legal conditions are being created for high quality indicators in education [6].

The pedagogical essence of critical thinking competence - the concept of critical thinking was first widely used in Western pedagogy, which means that the student does not simply accept information, but analyzes and evaluates it. American scientist J. Dewey defined critical thinking as “the process of thinking deeply about a problem and making informed decisions.” [7].

From a pedagogical perspective, critical thinking includes the following skills:

- analyze information;
- compare evidence;
- draw independent conclusions;
- see a problem from different perspectives;
- defend an opinion with justification.

Critical thinking competence increases students' cognitive activity and develops their creativity [8].

The importance of modern educational technologies - modern educational technologies turn the student into an active subject of the educational process. While in traditional education the teacher is the main source of information, in education based on innovative technologies the student independently searches, thinks and tries to solve the problem [9]. Today, the following technologies are considered effective in developing critical thinking:



- interactive methods;
- problem-based learning;
- project method;
- ICT and multimedia tools;
- STEAM educational technology;
- debate and discussion technologies.

These technologies increase the activity of students in the lesson, encourage them to think independently, and allow them to connect knowledge with practice [10].

Developing critical thinking through interactive methods - interactive methods are based on the joint activities of students. Methods such as “Brainstorming”, “Cluster”, “Insert”, “BBB”, “Discussion”, “Case-study” activate students’ thinking [11]. For example, in the “Case-study” method, students are presented with a problematic situation. Students analyze the problem, offer various solutions and choose the most optimal option. This develops critical and logical thinking in them. “Debate” technology is also one of the effective methods. During the debate, students learn to defend their opinion based on evidence. As a result, speech culture, communication competence and analytical thinking develop [12].

The role of multimedia tools - the use of information and communication technologies, in addition to increasing the efficiency of education, also has a positive effect on the independent thinking of students. Information presented through multimedia tools is absorbed by students faster [13]. Video lessons, e-textbooks, virtual laboratories, and interactive presentations encourage students to explore. Visual materials in particular develop students' analytical and comparative skills. For example, in history or biology, comparing different processes through multimedia tools helps students draw independent conclusions [14].

The possibilities of problem-based learning technology - Problem-based learning technology directs students to solve problems independently, rather than accepting ready-made knowledge. The teacher asks students problematic questions and encourages them to explore [15]. This approach yields the following results:

- students' activity increases;
- analytical thinking develops;
- independent decision-making is formed;
- the ability to apply knowledge in practice develops.

Through problem-based learning, students not only gain knowledge, but also learn to think [16].

STEAM Education and Critical Thinking – STEAM (Science, Technology, Engineering, Art, Mathematics) education technology has been widely used in recent years. This approach is based on the integration of disciplines and develops students' practical and critical thinking skills [17]. In STEAM



lessons, students create projects, conduct experiments, and solve problems. Throughout the process, they learn to analyze data and evaluate results. This approach fosters the following skills in students:

- creativity;
- innovative thinking;
- problem analysis;
- teamwork [18].

The role of the teacher - the role of the teacher in the formation of critical thinking is very important. A modern teacher must:

- know innovative technologies;
- be able to use interactive methods;
- encourage students to think independently.

The teacher must create an atmosphere of free thinking in the classroom. Respecting students' opinions and involving them in active dialogue serves the development of critical thinking [19].

In conclusion, modern educational technologies are an important factor in the formation of critical thinking competence in students. Interactive methods, multimedia tools, problem-based learning and STEAM technologies develop students' independent thinking, analytical approach and effective problem-solving skills. In today's educational process, it is important to educate students not as recipients of ready-made knowledge, but as active seekers and independent thinkers. Therefore, teachers need to effectively use modern educational technologies and widely introduce innovative methods into the teaching process. Young people with critical thinking competence will become mature specialists who can make a worthy contribution to the development of society in the future.

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