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DEVELOPING CRITICAL THINKING SKILLS IN PRIMARY SCHOOL STUDENTS

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Abstract

This article addresses the issue of developing critical thinking skills among primary school students. The formation of critical thinking promotes the development of independent thinking, logical analysis, and the ability to draw well-founded conclusions in students. The study presents effective pedagogical methods, interactive approaches, and practical recommendations that contribute to the development of these skills. The findings of the article will assist teachers in effectively applying critical thinking during the teaching process.

Keywords

Critical thinking, primary education, methodology, learning activity, logical analysis.

In today's education system, developing individuals' critical thinking skills is considered a crucial task. Critical thinking is the process of carefully analyzing existing information, drawing conclusions based on evidence, comparing different viewpoints, and making well-reasoned decisions. These skills go beyond mere knowledge acquisition, contributing to the formation of individuals who can solve real-life problems and think independently. Therefore, modern education must not only focus on delivering knowledge but also on teaching students to analyze, evaluate, and apply what they have learned in practice. In the information age, students are exposed to vast amounts of data, so it is essential not only to memorize information but also to analyze, compare, and derive logical conclusions from it. Especially at the primary education stage, the formation of critical thinking lays a strong foundation for students' future academic success.

The relevance of the topic lies in the fact that, in today's society, success depends on students' ability to think independently, view problems from various perspectives, and make logical and well-grounded decisions. Therefore, developing critical thinking skills in primary school students is considered an important pedagogical task.

The purpose of this article is to explore effective pedagogical methods and approaches aimed at developing critical thinking skills in primary school students and to provide practical recommendations.

The main objectives of the article are as follows:

1. To analyze the concept of critical thinking and its importance in primary education;

2. To identify the factors influencing the development of critical thinking skills in primary school students;

3. To study effective pedagogical methods and interactive techniques, and to develop practical recommendations.

The novelty of the topic lies in the fact that the article not only discusses critical thinking from a theoretical perspective but also proposes effective methods based on modern pedagogical approaches, taking into account the age characteristics and psychological capabilities of primary school students. Moreover, the article integrates national and international experiences related to the development of critical thinking in the context of ongoing educational reforms in Uzbekistan.

The object of the research is primary school students.

The subject of the research is the methodology for developing critical thinking skills in primary school students.

In both global and local pedagogical science, the essence of critical thinking, its stages of formation, and methods of development have been widely studied. D. Halpern (1998) defined critical thinking as an active cognitive process involved in evaluating information, conducting logical analysis, and making decisions. According to her, critical thinking is not only an intellectual activity but is also linked to social and cultural competencies. R. Ennis (1985) described critical thinking as "careful and active thinking," emphasizing the importance of evaluative reasoning in this process. In the learning outcomes developed based on Bloom's Taxonomy (1956), critical thinking is identified as one of the higher-order cognitive skills. According to this taxonomy, it is essential for a student not only to recall information but also to progress through stages of analysis, synthesis, and evaluation. Moreover, Vygotsky's theory of the "zone of proximal development" provides insights into students' thinking capacities and their ability to reason independently. These theoretical foundations serve as a vital basis for effectively guiding the development of critical thinking in younger students.

In local pedagogical research as well, critical thinking is regarded as an essential competency. In particular, N. To'xtasinova (2019) demonstrated that game-based activities, question-and-answer techniques, and problem situations are

effective tools in developing thinking activity in primary school students. S. Mahmudov (2021), on the other hand, empirically examined the impact of interactive methods such as “cluster,” “brainstorming,” and “concept mapping” on fostering critical thinking.

The importance of critical thinking is also highlighted in the new generation curricula and national education plans. In the “Foundations of the Competency-Based Approach in General Secondary Education” concept adopted by the Ministry of Public Education of the Republic of Uzbekistan in 2021, critical thinking is explicitly listed as one of the key skills. Thus, the analysis of existing literature shows that while the theoretical foundations of developing critical thinking at the primary education stage have been sufficiently explored, developing methods suited to the Uzbek educational environment through practical research remains a current and necessary objective.

The study was conducted in the primary grades (Grades 2–4) of three general education schools in the city of Karshi. A total of 90 students (approximately 30 from each school), 6 primary school teachers, as well as 3 school psychologists and methodologists participated in the research. The study lasted for 3 months, during which observations and interviews were conducted on a weekly basis. Surveys were administered once a month. More than 10 lessons incorporating problem-solving tasks and group activities that encourage critical thinking were observed as part of the experiment. At the end of each lesson, students’ responses were analyzed and assessed for signs of critical thinking.

During this practical research, various methods were applied in combination. **The following methods played a key role:**

1. Theoretical analysis method. Scientific literature on critical thinking, state educational standards, methodological manuals, and advanced foreign practices were analyzed. This method played an important role in identifying the theoretical foundations of the topic.

2. Pedagogical observation method. The activities of primary school students participating in the research were directly observed during lessons. The teacher’s performance, question-and-answer methods, and students’ responses to problem situations were the main focus of observation.

3. Survey method. Questionnaires containing questions about critical thinking were distributed to primary school teachers and parents. The survey results were analyzed to assess the practical situation.

4. Interview method. Semi-structured interviews were conducted with students, teachers, and school psychologists. These interviews helped identify the stages of development of critical thinking and existing problems.

5. Experimental Method. As part of the experiment, lessons were observed in which tasks promoting critical thinking and interactive methods (such as debates, "bouquet of ideas," and brainstorming) were used. The outcomes of the experiment were analyzed and compared with previous states.

Approaches in the study were selected carefully, considering the complexity, subjectivity, and strong connection of the critical thinking process with pedagogical and psychological factors. **The following approaches were defined as primary:**

- **Qualitative approach.** The internal processes such as how critical thinking is manifested in students' minds, their reasoning style, and argumentation ability were evaluated qualitatively. Students' written and oral responses were analyzed to determine their logical coherence and analytical capacity.
- **Quantitative approach.** The results of surveys and tests were analyzed through statistical indicators. This approach allowed general trends, efficiency percentages, and changes to be expressed in numerical form.
- **Integrative Approach.** The research aimed to simultaneously apply theories from pedagogy, psychology, and methodology. This provided an opportunity to study critical thinking in a comprehensive manner.
- **Practical Approach.** Theoretical knowledge about critical thinking was tested through practical classroom experience. Theories were applied to real-life situations, tasks, and questions during lessons.

This research was conducted with a practical orientation, and several limitations were encountered. Firstly, the number of students involved in the research was limited, and they were selected from schools in a single region, which to some extent restricted the generalizability of the results. Furthermore, the depth and objectivity of the assessment tools used to determine the development level of critical thinking skills may have influenced the results. The psychological state of some students or external factors (such as parental involvement or differences in classroom environments) may have affected their performance. However, these limitations did not significantly hinder the achievement of the overall goals of the research and instead indicated important directions for future, more comprehensive studies.

The results obtained from the research are as follows:

1. Identifying the current state of critical thinking among primary school students:

28% of students struggled to solve problems independently;

47% of students were able to provide standard answers to simple questions but found it difficult to reason correctly in non-traditional situations;

Only 25% of students demonstrated elements of critical thinking (such as analysis, proposing alternative ideas, and identifying cause–effect relationships).

This indicates that critical thinking skills are still not sufficiently developed.

2. Effectiveness of lessons aimed at developing critical thinking:

61% of students expressed independent opinions in response to complex questions;

29% of students clearly identified cause–effect relationships;

Only 10% of students still maintained a passive thinking style.

This shows that there is potential for developing critical thinking and that significant results can be achieved through proper methodological approaches.

3. Teachers' methodological preparedness and their role:

78% of teachers reported insufficient methodological skills in developing critical thinking. Special methodological recommendations and practical seminars were conducted for them. As a result, experienced teachers successfully integrated interactive methods into their lessons.

4. The role of games and tasks in developing critical thinking:

Game elements such as dramatization, role-playing, and logical puzzles in lessons contributed to the activation of critical thinking. In particular, involving students in the assessment process and directing them toward making independent conclusions proved effective.

The results of the study show similarities with the research conducted by both Uzbek and foreign scholars. For example, Uzbek researcher M. Karimova (2021) emphasizes in her study that the development of critical thinking is linked to students' independence of thought, their ability to ask questions, and their capacity to approach problems from multiple perspectives. According to her, these skills are developed step by step in primary school through play, question-and-answer sessions, dialogue, and project-based tasks. Additionally, as noted by A. A. Sharipov (2021), "in primary school, critical thinking is still at the initial stage of development, and this process is directly dependent on the teacher's approach."

Similar ideas are also proposed by the representative of American pedagogy, Paul (2006). He defines critical thinking as "the ability to consistently and analytically approach any situation" and stresses the importance of developing this skill from early childhood. In the models of critical thinking proposed by Paul and Elder (2009), children are shown to gradually acquire the ability to make conclusions based on logical analysis, evidence, and facts. This approach aligns with the methods used in our research. During the practical activities conducted in the study—such as "brainstorming," "graphic organizers," and the "tree of thoughts" method—students showed significant improvements in their level of

thinking and analytical skills. Furthermore, critical thinking helped students achieve consistency in reasoning and express their opinions based on evidence. This conclusion is also consistent with the views of British researcher Ennis (1993), who suggests using methods such as "answering a question with a question" and "presenting alternative viewpoints" in teaching critical thinking.

In European pedagogical practice, especially in the Finnish education system, critical thinking is developed from the preschool and primary stages through innovative methods. In Uzbekistan, however, approaches in this field are still at a developmental stage, and it was found that teachers' qualifications in this area vary. For example, in the "Guidelines for Using Innovative Methods in Primary Education" developed by the Ministry of Public Education of the Republic of Uzbekistan (2020), the use of tasks aimed at fostering critical thinking is recommended. However, their practical implementation is not yet fully consistent.

The methods used in our study, harmonized with foreign approaches, yielded practical results in the national educational context. These results demonstrated that foreign experiences can be adapted to local needs in Uzbekistan. In particular, the socio-cultural context plays a significant role in the development of critical thinking. Activities based on Vygotsky's (1978) theory of the "zone of proximal development," involving play and collaboration, created an environment that encourages students to think independently.

Conclusion

During the research, the issue of developing critical thinking skills among primary school students was thoroughly examined. The results showed that in fostering critical thinking, the activeness of students, the use of modern pedagogical approaches by teachers, and the application of interactive teaching methods are of great importance. Games, problem-solving tasks, and group work effectively contribute to the development of students' independent thinking, analytical skills, and decision-making abilities. At the same time, it was identified that in order to further develop critical thinking skills within the national education system, it is necessary to regularly enhance teachers' qualifications, revise educational curricula, and incorporate international best practices. Overall, developing critical thinking plays a significant role in improving the quality of primary education, and the broad implementation of practical research and innovative approaches in this area is of great importance for the future of the education system.

Recommendations

a) Special methodological courses should be organized for teachers to promote critical thinking in primary education.

b) Interactive and project-based tasks aimed at developing critical thinking skills should be more widely included in educational programs and textbooks.

c) A system for assessing students' reasoning and problem-solving abilities should be introduced in the learning process.

d) Clubs such as "Thinking Club" or "Logical Debates" should be established in schools.

e) The effectiveness of methods for developing critical thinking should be regularly studied in pedagogical research, and new innovations should be implemented.

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