The OSCAR PUBLISHING Services
International Journal of Pedagogics

VOLUME Vol.05 Issue11 2025
PAGE NO. 341-343
DOI 10.37547/ijp/Volume05Issue11-80

Developing Critical Thinking In Primary School Students As A Pedagogical Issue

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Received: 12 October 2025; **Accepted:** 09 November 2025; **Published:** 30 November 2025

Abstract: Developing critical thinking in primary school students is a major pedagogical priority in modern education. As societies face rapid technological, informational, and social transformations, the ability to analyze, evaluate, and reflect has become essential for young learners. This article explores the theoretical foundations, pedagogical challenges, and effective instructional approaches for developing critical thinking in primary school children.

Keywords: Critical thinking, primary school students, cognitive development, inquiry-based learning, problem-solving skills, pedagogical strategies, reflective thinking, analytical skills, classroom engagement, higher-order thinking.

Introduction: The 21st century has transformed the expectations placed on education systems. Today's learners must think independently, evaluate information critically, solve problems creatively, and communicate effectively. Critical thinking is recognized globally as a core competency for lifelong learning and social participation. However, developing these skills from early schooling remains a complex pedagogical issue. In primary education, students acquire foundational cognitive processes such as comparison, inference, classification, reasoning, and reflection. If nurtured properly, these processes become the basis for higher-order thinking in later academic stages [2]. Yet many education systems still rely heavily on rote learning, memorization, and teacher-centered instruction, which limit opportunities for analytical thinking and student autonomy. Research shows that even very young learners are capable of engaging in reasoning, questioning, and problem-solving when instruction is appropriately designed [1; p 53]. Uzbek scholars also emphasize the importance of introducing critical thinking strategies in early schooling, noting their positive effect on literacy, communication, and independent learning [6]. Given these considerations, the pedagogical problem of developing critical thinking in primary school students needs deep theoretical and practical analysis. This study examines existing research, identifies challenges, and proposes effective instructional strategies for enhancing critical thinking in early learners.

LITERATURE REVIEW

Critical thinking has been conceptualized in various ways. International literature describes it as reflective, reasoned thinking aimed at making sound judgments [5; p11]. Core components of critical thinking include analysis, evaluation, inference, interpretation, and reflection. Such skills require learners to process information, consider different perspectives, and justify their decisions.

In the Uzbek context, scholars similarly define critical thinking as the ability to think independently, question information, and make evidence-based conclusions [7]. These skills support deeper understanding in reading, mathematics, and science and prepare students for complex problem-solving tasks.

Piaget's theory places primary school children in the "concrete operational stage," during which they can reason logically about concrete situations. Inquiry, observation, and classification become effective tools

for learning at this age.

Vygotsky's sociocultural theory adds that social interaction, language, and teacher support (scaffolding) play essential roles in developing higher-order thinking. Dialogues, collaborative activities, and guided questioning stimulate reasoning and reflection [1]. Uzbek researchers emphasize that with systematic pedagogical support, even early-grade students can demonstrate critical thinking behaviors such as argumentation, justification, and evaluative judgment [8]. Inquiry-Based Learning. A strong body of research supports inquiry-based learning as a powerful method for promoting critical thinking. In this approach, learners explore questions, conduct investigations, collect evidence, and draw conclusions [2; p 22]. Reports similar outcomes in Uzbek primary classrooms, where inquiry activities strengthened reading comprehension and analytical skills. Problem-Based Learning. Problem-based tasks require students to apply reasoning, evaluate alternatives, and generate solutions. This approach strengthens decision-making and creativity. Dialogic Teaching. Dialogic teaching involves open-ended questioning, discussion, and collaborative reasoning. Kanat and Temel found that the Socratic method significantly enhanced primary learners' ability to evaluate and justify ideas. Metacognitive Strategies. Reflective journaling, self-assessment checklists, and "think-aloud" methods help learners understand their own cognitive processes. Iskandarova [10; p79] notes that metacognition significantly supports logic and critical thinking in early childhood education.

METHODOLOGY AND RESULTS

This article uses a qualitative research design, specifically theoretical analysis and synthesis. The methodology includes: The study examines ten scholarly sources—five international and five Uzbek—selected based on relevance to critical thinking and primary education. These sources provide theoretical frameworks, empirical evidence, and pedagogical recommendations. International and local studies are compared to identify similarities and differences in approaches to developing critical thinking. Findings are synthesized to propose a conceptual model for fostering critical thinking in primary students. Because this study is conceptual and not empirical, it does not involve data collection from participants. Instead, it aims to deepen understanding of the pedagogical problem.

The analysis yields several major themes concerning critical thinking development in primary education. A classroom climate that values questioning, exploration, and dialogue is essential. Students must feel safe to express ideas, challenge viewpoints, and experiment with different solutions. Uzbek researchers similarly highlight that supportive environments increase motivation and cognitive engagement. Effective questioning elevates thinking. Kanat and Temel demonstrate that Socratic questions guide learners toward deeper reasoning. International and Uzbek studies agree that:

- Open-ended questions stimulate analysis
- Probing questions clarify understanding
- Reflective questions encourage metacognition.

The findings show that inquiry-based, problem-based, and activity-centered lessons significantly promote critical thinking. In Uzbekistan, inquiry tasks in reading and science classes enhanced reasoning and interpretation [7; 10].

Critical thinking is not limited to a single subject. Evidence shows effectiveness across:

- Reading and language arts (comparison, prediction, interpretation)
- Mathematics (logical reasoning, justification of solutions)
- Science (hypothesis development, evidence evaluation)
- Social studies (argumentation, ethical reasoning)

Metacognitive strategies significantly strengthen reflection and self-regulation. Both international and Uzbek scholars highlight these strategies as essential for independent learning.

Teacher competence is the strongest determinant of critical thinking outcomes. Teachers need training in:

- Questioning
- Scaffolded instruction
- Dialogic methods
- Formative assessment

Parpiyev & Pozilov (2025) found that formative assessment tools improved critical thinking in 3rd-grade students.

DISCUSSION

Traditional rote-based instruction limits exploration, creativity, and reasoning. Critical thinking requires a shift toward learner-centered pedagogy. In Uzbek schools, rapid curricular reforms demand improvements in teaching practices to encourage autonomy and inquiry. Dialogue plays a central role in cognitive development. Students must be provided linguistic tools—vocabulary, sentence structures, reasoning phrases—to articulate thoughts. Uzbek-language subjects provide strong opportunities for

critical literacy development. Primary learners require concrete examples and hands-on experiences. Thus, teachers should employ storytelling, simple experiments, visual supports, and real-life tasks. These methods align with both Piagetian and Vygotskian perspectives.

Key barriers include:

- Limited teacher preparation
- Time constraints
- Curriculum overload
- Assessment systems focused on memorization.

Addressing these requires systemic reforms and long-term policy planning.

Uzbek research emphasizes increasing the role of interactive methods, critical questioning, and formative assessment. Attention to teacher training, resource development, and methodological support is essential for sustainable progress [8].

CONCLUSION

Developing critical thinking in primary school students is crucial for preparing young learners for the demands of modern society. The analysis of international and Uzbek literature shows that critical thinking can indeed be cultivated from early grades through purposeful pedagogical design.

Key conditions include:

- Inquiry-based learning
- Problem-solving activities
- Dialogic teaching
- Metacognitive strategies
- Supportive classroom climate
- Strong teacher preparation

Integrating critical thinking into curriculum standards, instructional materials, and teacher professional development programs will significantly strengthen student outcomes. Future research may focus on classroom-based experiments, assessment models, and digital tools for critical thinking. This study highlights that the development of critical thinking in primary school is both a challenge and an opportunity—one that requires collaboration among educators, policymakers, and researchers.

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