



THE CONTENT AND THEORETICAL-METHODOLOGICAL FOUNDATIONS OF CRITICAL THINKING COMPETENCE

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Abstract. *This article examines the content and theoretical and methodological foundations of critical thinking competence. The views of J. Dewey, D. Halpern, R. Paul, L. Elder, R. Ennis, J. E. McPeck, M. Lipman, and D. Kuhn are analyzed. Particular attention is given to the cognitive, analytical, reflective, evaluative, metacognitive, and dialogic aspects of critical thinking, as well as its age-appropriate manifestations in preschool children. The study highlights the importance of considering children's cognitive development, activity experience, communication, and pedagogical support in developing critical thinking competence.*

Keywords: *critical thinking, critical thinking competence, theoretical and methodological foundations, cognitive development, analytical thinking, reflective thinking, metacognition, preschool education, pedagogical conditions.*

Reforms aimed at modernizing the education system in Uzbekistan are placing increasing emphasis on ensuring the intellectual and personal development of children at the preschool education stage. In particular, the Law of the Republic of Uzbekistan “On Preschool Education and Upbringing” recognizes preschool education as an important component of the continuous education system that ensures the intellectual, spiritual and moral, aesthetic, and physical development of the child. This approach necessitates shifting the focus of preschool education from merely providing knowledge to developing children's ability to use their existing knowledge, skills, and experience independently and

purposefully in various activities and real-life situations.

From this perspective, improving the content of preschool education based on the competency-based approach also transforms the child's position in the educational process. The child is regarded not as a passive recipient of ready-made knowledge, but as an active subject who draws conclusions based on personal experience, observations, and acquired knowledge, responds to problematic situations, and seeks to make independent decisions in the course of activities. Therefore, the consistent implementation of the competency-based approach in preschool education creates the necessary pedagogical conditions for developing



children's thinking processes, including their abilities to analyze, compare, evaluate, and arrive at well-founded conclusions.

As a logical continuation of the reforms implemented in this area, particular attention should be paid to the third edition of the "Ilk Qadam" State Curriculum, approved by Order No. 260 of the Minister of Preschool and School Education of the Republic of Uzbekistan dated July 17, 2026 [1, p. 1]. The updated content of the curriculum places particular emphasis on developing the key skills and competencies of preschool-aged children, integrating contemporary pedagogical and psychological approaches into the educational process, and preparing children for subsequent stages of education and lifelong learning [1, pp. 3–4].

In particular, the explicit designation of **critical thinking as one of the core competencies** in the third edition of the "Ilk Qadam" National Curriculum demonstrates a strengthened methodological focus on the development of children's thinking processes within the content of preschool education [1, p. 4]. This innovation creates a need to organize the educational process in preschool education in a way that encourages children not merely to receive information, but to understand and analyze it, ask questions, compare different viewpoints, express their own ideas, and explain them using simple reasons. Therefore, developing the scientific and methodological foundations for fostering

critical thinking competence in preschool-aged children has emerged as one of the pressing scientific and pedagogical tasks of the contemporary preschool education system.

This curriculum update further increases the socio-pedagogical relevance of the problem under investigation. Today, the need to develop critical thinking among preschool-aged children is shaped not only by contemporary trends and general pedagogical concepts observed in the global educational environment, but also directly by the current programmatic and regulatory requirements of the preschool education system of Uzbekistan. In this regard, particular scientific importance is attached to theoretically substantiating the content boundaries of critical thinking competence specific to the preschool period, identifying methodological approaches that contribute to its development, and establishing an effective integration of this competence with children's natural forms of activity.

The theoretical elucidation of the essence of critical thinking competence first requires determining the relationship among the concepts of "thinking," "logical thinking," "creative thinking," "independent thinking," and "critical thinking," which are closely related in terms of their content. Although these categories are used in pedagogy and psychology as concepts associated with human cognitive and intellectual activity, they differ in terms of their purposes, functional orientations, mechanisms of



implementation, and ultimate outcomes. Therefore, identifying the common and distinguishing features of these concepts is of methodological importance for substantiating critical thinking competence as an independent scientific category.

S.L. Rubinstein interprets thinking as a cognitive process that is closely connected with human activity. According to his view, a person comprehends reality not simply through observation, but through actively engaging with it; therefore, the initial form of thinking manifests itself as “thinking in and through action” [2, p. 336]. This theoretical perspective is particularly significant for explaining the intellectual development of preschool-aged children. At this age, children develop their understanding of the surrounding environment not through the acquisition of ready-made theoretical knowledge, but through practical interaction with objects, participation in play activities, observation, experimentation, and communication with peers and adults. Thus, studying the thinking of preschool-aged children separately from their real-life activities does not allow the natural mechanisms of cognitive development characteristic of this developmental stage to be fully revealed.

From the perspective of the pedagogical process, M.I. Mahmutov identifies logical, creative, and critical thinking among the important forms of thinking. M.L. Varlakova, analyzing these views comparatively, acknowledges the

interrelationship of these types of thinking within a unified intellectual process, while emphasizing that they differ to a certain extent in terms of their functions, the direction of mental activity, and the outcomes they produce [3, pp. 15–16]. Identifying these differences is of considerable methodological importance for determining the conceptual foundations of the study. Therefore, a separate analysis of the concepts of logical, creative, independent, and critical thinking, together with the identification of their interrelationships and distinguishing criteria, is essential for establishing the theoretical foundations of a methodology for developing critical thinking competence in preschool-aged children.

Logical thinking manifests itself as an important mechanism that ensures consistency, clarity, and substantiation in human mental activity. Through this type of thinking, common and distinctive characteristics of objects and phenomena are identified, analyzed, classified into specific groups, and generalized. Furthermore, identifying cause-and-effect relationships and establishing logical connections between individual ideas constitute its principal operations [3, p. 15]. These intellectual operations also represent an important structural foundation of the critical thinking process. Indeed, in order to evaluate how well-founded a particular idea, judgment, or conclusion is, it is first necessary to understand the logical basis upon which it has been constructed.



At the same time, it would be inappropriate to regard logical consistency as constituting the entire content of critical thinking. A logically consistent conclusion may nevertheless be based on an incorrect initial assumption or insufficiently reliable evidence. Therefore, critical thinking is not limited to identifying the internal logical structure of an idea; it also involves examining the sources upon which the idea is based, the adequacy of the evidence provided, and the validity of the conclusion. In preschool-aged children, such elements of thinking can be developed through questions and tasks based on literary texts, such as *“In what order did the events occur?”*, *“Why did the character act in this way?”*, *“What might happen next?”*, and *“What are the similarities and differences between the characters?”* As a result, children develop initial logical operations such as understanding the sequence of events, comparing characteristics, and establishing connections between causes and consequences.

Creative thinking represents the aspect of mental activity that is oriented toward generating new possibilities. It is characterized by approaching an existing situation from a new perspective, proposing multiple possible solutions to a problem, and recognizing new connections between objects or phenomena that were not previously associated with one another. M.L. Varlakova identifies the emergence of a new solution or an improved version of an existing solution as an important outcome

of creative thinking, emphasizing the interaction between logical thinking and imagination in this process [3, p. 15]. In the activities of preschool-aged children, creative thinking may manifest itself, for example, through continuing the plot of a fairy tale, changing its ending, suggesting an alternative way for a character to overcome a problematic situation, or providing different responses to open-ended questions such as *“What might have happened if the events had unfolded differently?”*

Critical thinking, in contrast to the aforementioned thinking processes, is directed not simply toward accepting an existing idea, assumption, or proposal, but toward determining its validity, examining the evidence supporting it, comparing it with alternative options, and evaluating it according to certain criteria. For this reason, critical thinking is closely interconnected with logical thinking. Evaluating any piece of evidence or conclusion requires an understanding of its logical structure and the relationships among its constituent elements. Similarly, critical thinking is closely associated with creative thinking, since the ability to generate alternative ideas is necessary for evaluating existing options and selecting the most appropriate one among them [3, pp. 15–16].

From this perspective, it would be one-sided to regard creative and critical thinking as mutually exclusive or opposing intellectual processes. Although their functional orientations differ, these processes have complementary



characteristics. Conventionally, creative thinking expands the range of ideas by asking, “*What other possibilities are there?*”, whereas critical thinking serves to analyze and select among these alternatives by asking, “*Which of them is more appropriate, and what reasons support this choice?*” M. Lipman likewise does not restrict developed thinking to critical thinking alone; rather, he interprets it as an integration of critical, creative, and caring thinking [10, pp. 254–255, 261–274]. Thus, generating an idea and evaluating it should not be regarded as completely separate processes; rather, they can be viewed as different functional dimensions of a unified intellectual activity.

The interrelationship between critical and creative thinking has also been examined within the framework of empirical research. In particular, the findings of a study conducted by K. Ulger with student participants demonstrated an overall positive, but weak, correlation between these two constructs [12]. At the same time, the strength of this relationship was not consistent across different fields of study, and statistically significant results were not observed in some groups. Therefore, these empirical findings may be regarded as evidence of an interrelationship between critical and creative thinking; however, they do not provide sufficient grounds for treating the two as a single intellectual construct.

A study conducted by W. Linares involving five-year-old children also provides an opportunity to examine this

issue in the context of the preschool age period. The study jointly investigated aspects of critical and creative thinking associated with play activities and proposed a model of play-based strategies aimed at developing these two types of thinking [13, pp. 168–184]. Within the framework of the study, the initial diagnostic indicators of 25 five-year-old children were analyzed. Therefore, it is more appropriate to interpret the findings of this study not as evidence of the full experimental effectiveness of the proposed model, but rather as a methodological basis demonstrating the possibility of developing critical and creative thinking in preschool-aged children in an interconnected manner through play activities.

Independent thinking, in turn, can be regarded as one of the personal and intellectual conditions necessary for the manifestation of the types of thinking discussed above. Its essence prioritizes the individual’s ability to formulate their own views, express a personal attitude toward questions and problems, and arrive at independent conclusions, rather than simply accepting ready-made ideas. D. Kluster emphasizes that independence is one of the important characteristics of critical thinking. The author also notes that critical thinking is based on information, begins with a problem or question, relies on arguments, and has a social character [9, pp. 5–13].

However, interpreting independent thinking and critical thinking as identical concepts is not scientifically justified. An



individual may independently put forward their own point of view without any external direction; however, this does not necessarily mean that such a view is sufficiently supported by evidence or logically substantiated. Critical thinking, alongside adopting an independent position, also encompasses the ability to justify that position, analyze evidence, take other points of view into consideration, examine the reliability of a conclusion, and reconsider one's own views when new evidence emerges.

For example, a child may express a personal opinion about the behavior of a literary character by stating, *"I think the character did the wrong thing."* This primarily demonstrates the presence of an independent opinion. If the child explains their opinion through statements such as *"Because the character deceived a friend,"* *"The character could have solved the problem in another way,"* or *"There is also some basis for the other character's point of view,"* it can be observed that the child's thinking has moved beyond a simple personal attitude toward the level of analytical and evaluative reasoning. It is precisely in this process that independence manifests itself as an important condition for critical thinking.

Generalizing the theoretical perspectives discussed above, the functional relationship among logical, creative, independent, and critical thinking can be characterized as follows: **logical thinking** ensures consistency and substantiation among ideas; **creative thinking** generates new ideas,

possibilities, and alternative solutions; **independent thinking** provides the foundation for an individual to formulate their own intellectual position; and **critical thinking** involves analyzing, comparing, determining the validity of, and evaluating available information, ideas, evidence, conclusions, and alternative options according to established criteria.

It is therefore appropriate to interpret critical thinking not as an entirely separate, autonomous, and closed intellectual process, but rather as an **integrative form of intellectual activity** that relies on the capacities of logical, creative, and independent thinking. Its distinctive nature is determined primarily not by the mere creation or acceptance of ideas and information, but by the integration of the functions of **analyzing them, examining evidence, comparing alternative perspectives, evaluating them, and arriving at well-founded conclusions.** This theoretical conclusion provides an important conceptual basis for determining the substantive structure of critical thinking competence in preschool-aged children and for developing a methodology for its development through children's literature.

An examination of the formation and development of the concept of critical thinking from a scientific and theoretical perspective demonstrates that it is a complex and multidimensional phenomenon. Throughout the evolution of scholarly perspectives on this concept, **reflective, logical-analytical, skill-based, dispositional, metacognitive, contextual,**



and dialogic approaches have emerged. Each of these approaches gives priority to a particular dimension of critical thinking. Therefore, through a comparative analysis of these approaches, it is possible to identify the key aspects that are common to different theoretical interpretations of critical thinking and that have methodological significance for the present study.

The concept of reflective thinking proposed by **J. Dewey** occupies a particularly fundamental position in the theoretical formation of critical thinking. The scholar interprets reflective thinking not as the mere acceptance of existing ideas or knowledge, but as a process of actively, systematically, and thoroughly analyzing their underlying grounds and the consequences that may follow from them [4, p. 6]. According to J. Dewey's perspective, the activation of the thinking process is primarily associated with situations in which no ready-made answer is available or in which a certain degree of uncertainty and doubt arises. In such circumstances, an individual does not simply accept an existing judgment, but examines the extent to which it is justified, considers the available evidence, and anticipates and evaluates the possible consequences that may arise from that judgment. Thus, the emergence of a problem, the experience of doubt, inquiry, examination of evidence, and arriving at a well-founded conclusion constitute interconnected stages of reflective thinking.

J. Dewey's concept is of considerable importance for understanding the essence of criticality from a methodological perspective. In this view, a critical attitude is not defined by rejecting or opposing a ready-made idea, but rather by carefully examining the grounds of that idea before accepting it. From this perspective, equating the concept of "**critical**" with such everyday meanings as "looking for shortcomings," "raising objections," or "rejecting something" is not scientifically sufficient. From a pedagogical standpoint, criticality primarily refers to intellectual activity aimed at determining the degree of validity of an idea, judgment, or conclusion, examining the available evidence, and only then arriving at an appropriate conclusion.

In **E. Glaser's** conception, the analytical and evaluative components of critical thinking are articulated more explicitly. According to the comparative analysis conducted by M. L. Varlakova, Glaser's approach regards analyzing evidence, identifying implicit or explicit assumptions, examining the extent to which conclusions are justified, and determining the scope within which a particular judgment is applicable as important constituent operations of critical thinking [3, p. 17]. Such an interpretation further concretizes the concept of reflective thinking established by J. Dewey. In other words, whereas Dewey places the reflective nature of thinking and its emergence in response to a problematic situation at the center of his approach,



Glaser's perspective provides a more specific account of the analytical, verification, and evaluative operations that practically support this process.

In **D. Halpern's** theoretical perspective, critical thinking is characterized as goal-directed, logical, and carefully considered intellectual activity. Her conception places particular emphasis on the conscious use of cognitive skills and strategies that increase the likelihood of achieving the desired outcome in processes such as problem solving, drawing conclusions, evaluating possible outcomes, and making decisions [5, p. 22]. In Halpern's approach, critical thinking is not limited to determining the quality of the final decision or conclusion. An important aspect is that an individual should also be able to analyze and evaluate the thinking process through which that decision or conclusion was reached [5, pp. 22–23]. In this respect, the approach demonstrates that critical thinking involves not only evaluating the outcome, but also monitoring the intellectual process that leads to that outcome.

In her subsequent theoretical developments, D. Halpern also places considerable emphasis on the effective **transfer of critical thinking skills from one situation to another**. In this context, she emphasizes that the mere possession of critical thinking skills is not sufficient in itself. Rather, a disposition to activate these skills in an appropriate situation, an understanding of the structural characteristics of problems and arguments, and the metacognitive monitoring of one's

own thinking process need to be integrated. Consequently, this perspective strengthens the interpretation of critical thinking not as a simple sum of separate cognitive operations, but as a **system of cognitive strategies that is consciously activated and regulated in response to the demands of a particular problematic situation**.

A systematic analysis of the perspectives of **J. Dewey, E. Glaser, and D. Halpern** demonstrates that the theoretical content of the concept of critical thinking has gradually expanded. While J. Dewey laid the foundation for the reflective and problem-oriented nature of this process, E. Glaser clarified its analytical and evaluative operations, and D. Halpern further developed the aspects related to the purposeful application of cognitive skills, their transfer to new situations, and the metacognitive monitoring of the thinking process. When these theoretical perspectives are considered collectively, critical thinking can be interpreted as a complex intellectual activity through which an individual consciously analyzes existing information, ideas, evidence, and conclusions, evaluates their validity, and arrives at a well-founded decision appropriate to a problematic situation.

The conceptual approach developed by **R. Paul and L. Elder** provides a deeper understanding of the reflective and metacognitive nature of critical thinking. According to them, critical thinking is a process aimed at becoming aware of one's own thinking activity, analyzing and



evaluating it, and, on this basis, improving the quality of thinking [6, p. 6]. Within this conception, the constituent elements of the thinking process—purpose, question, information, inference, concepts, assumptions, implications, and point of view—should be analyzed and examined according to universal intellectual standards [6, pp. 17–25]. In this context, criteria such as **accuracy, clarity, logic, relevance, depth, and breadth** serve as means of determining the quality of thinking and evaluating the degree to which it is well-founded.

An important aspect of the approach developed by R. Paul and L. Elder is that they do not reduce critical thinking merely to a particular cognitive method or a set of technical skills. In their conception, critical thinking is considered in an integral relationship with intellectual dispositions. In particular, qualities such as **intellectual independence, intellectual integrity, open-mindedness, empathy, perseverance, and reliance on well-founded conclusions** create the conditions for an individual to use their existing cognitive capacities effectively and meaningfully [6, pp. 26–32]. Accordingly, the practical and skill-based dimension of critical thinking and its dispositional dimension, which reflects an individual's readiness to apply these skills, should not be considered separately, but rather as an interconnected system.

The scholarly views of **R. H. Ennis** are particularly significant in explaining the dispositional characteristics of critical thinking. The scholar interprets critical

thinking as reasonable and reflective thinking manifested in the process of determining whether a particular belief or action is justified and arriving at an appropriate decision. R. Ennis distinguishes between an individual's ability to think critically and their inclination to apply this ability in real-life situations as closely related, but conceptually distinct, phenomena. For this reason, he emphasizes the need in the educational process to develop both cognitive abilities and the dispositions that motivate individuals to use them [7, pp. 165–182].

The methodological value of R. Ennis's conception lies in the fact that the presence of critical thinking is not determined solely by an individual's ability to perform a particular mental operation. For critical thinking to be effectively manifested, individuals should also develop intellectual dispositions such as seeking evidence and reasons, clarifying their own views, considering alternative solutions to an existing problem, remaining open to other people's perspectives, and reconsidering previous conclusions when new information or evidence emerges [7, pp. 165–182]. Consequently, within the theory of critical thinking, the **unity of cognitive ability and readiness to apply that ability** can be regarded as an important methodological principle.

Another important scholarly issue in the theory of critical thinking concerns whether this form of thinking should be interpreted as a universal process



independent of content or as an activity closely connected with a particular field of knowledge and context. **J. E. McPeck** approaches with caution the interpretation of critical thinking as a set of universal operations detached from specific content and applied in the same manner across all situations. According to his perspective, thinking is always directed toward a particular object, issue, or subject matter. Therefore, knowledge of the relevant field is also considered an important prerequisite for making well-founded and meaningful judgments [8, pp. 4–9].

McPeck's position makes it possible to draw an important methodological conclusion concerning the development of critical thinking in preschool education. When developing critical thinking in preschool-aged children, rather than relying on abstract arguments detached from content, it is more natural and potentially more effective to organize thinking around objects, events, interpersonal relationships, play activities, and situations presented in literary works that are closely connected with children's immediate experiences. In such situations, children have opportunities to formulate questions, identify the causes of events, compare different options, express their own views, and draw conclusions. However, it would also be inaccurate to interpret McPeck's emphasis on the importance of content as a position that completely denies the existence of general methods of thinking within critical thinking. Therefore, within the framework of the present study, the **interrelationship**

between specific content and general methods of thinking is adopted as a methodologically appropriate approach.

M. Lipman's conception of "**Thinking in Education**" represents one of the important theoretical foundations for understanding the dialogic and social characteristics of critical thinking. In the concept of the "**community of inquiry**" proposed by the scholar, the development of thinking is associated with processes such as asking questions, exchanging thoughts and ideas, proposing hypotheses, discussing the reasons underlying them, listening to the perspectives of other participants, and actively engaging in collective inquiry [10, pp. 83–104]. Thus, the development of thinking is ensured not only through individual reasoning but also through meaningful communication and collaborative inquiry.

M. Lipman does not interpret developed thinking solely within the framework of critical thinking. In his conception, the integration of **critical, creative, and caring thinking** is regarded as an important condition for mature thinking [10, pp. 243–274]. From this perspective, it is insufficient to interpret critical thinking merely as a set of internal cognitive operations taking place within the individual mind. By expressing their ideas in the process of communication, individuals clarify and substantiate their views, while listening to the perspectives of others enables them to recognize the boundaries and weaknesses of their own positions. When new evidence, questions, or alternative perspectives emerge, they



may also reconsider their previous views. In this respect, M. Lipman's conception reveals the **social-dialogic nature of critical thinking, which develops through communication, collaboration, questioning and answering, and collective inquiry.**

A synthesis of the theoretical perspectives discussed above demonstrates that critical thinking cannot be explained solely in terms of a single cognitive skill or intellectual operation. **R. Paul and L. Elder** reveal its metacognitive and intellectual-standard dimensions; **R. H. Ennis** emphasizes the unity of cognitive abilities and dispositions; while **J. E. McPeck** highlights the dependence of thinking on specific content and context. In **M. Lipman's** perspective, the dialogic and social nature of critical thinking assumes particular importance. What these approaches have in common is that critical thinking does not involve an individual's passive acceptance of existing ideas or information in ready-made form; rather, it entails understanding, examining, substantiating, evaluating, considering alternative perspectives, and, when necessary, reconsidering one's own position.

A comparative analysis of the scientific and theoretical approaches discussed above demonstrates that the concept of critical thinking is not confined to a single theoretical perspective, but has developed through several complementary conceptual directions. In particular, **J. Dewey** emphasizes the reflective

dimension of this phenomenon, whereas **E. Glaser** regards the analysis of evidence and the examination of the validity of conclusions as essential. **D. Halpern** connects critical thinking with cognitive skills and strategies that serve the achievement of a particular goal. **R. Paul and L. Elder**, in turn, place at the center the mechanisms through which thinking itself is analyzed and monitored according to intellectual standards. In **R. Ennis's** approach, critical dispositions that motivate individuals to apply cognitive skills in practice occupy an important position alongside cognitive abilities. **J. E. McPeck** substantiates the relationship between critical thinking and specific content and context, while **M. Lipman** places particular emphasis on the dialogic, social, and collaborative nature of this process.

The differences among these theoretical perspectives do not imply that they contradict or reject one another. On the contrary, their comparative and synthetic integration makes it possible to reveal more fully the complex and multidimensional nature of critical thinking. From this perspective, critical thinking can be interpreted as a multidimensional intellectual activity that integrates interrelated characteristics such as **reflection, analysis and evaluation, goal-directed cognitive activity, relevant dispositions, reliance on content and context, and dialogic collaboration.**

In revealing the essence of critical thinking, taking into account its dynamic



and developmental nature is also an important methodological requirement. D. Kuhn interprets this phenomenon not as an ability that emerges fully formed at once or remains unchanged, but as an intellectual process that gradually becomes more complex throughout cognitive development. The researcher highlights the importance of metacognitive, metastrategic, and epistemological forms of “**meta-knowing**” in the development of critical thinking [11, pp. 16–25]. This approach leads to an important methodological conclusion, particularly in the study of critical thinking among preschool-aged children: it is not scientifically justified to directly equate the thinking of a young child with the criteria of critical thinking developed in adults.

This is because it is not natural for all dimensions of critical thinking to manifest at the same level or in a fully developed form during the early stages of a child’s development. Rather, children gradually develop initial cognitive actions such as asking questions, attempting to identify simple causes of events or actions, comparing objects and events, predicting what may happen next, explaining the reasons for their choices, and demonstrating readiness to listen to and take into account the opinions of others. These actions serve as the necessary intellectual foundation for the subsequent development of more complex abilities to analyze, evaluate information and ideas, substantiate one’s own views, and engage in reflective thinking.

The developmental nature of critical thinking constitutes one of the important methodological principles in its theoretical interpretation. Without denying the universal characteristics associated with critical thinking, this principle requires consideration of the forms in which these characteristics manifest themselves in accordance with the child’s individual level of development, age, and cognitive capacities. Therefore, in studying and developing critical thinking among preschool-aged children, it is methodologically more appropriate to identify the age-appropriate initial indicators and developmental dynamics of this form of thinking rather than directly applying complex logical and evidentiary criteria characteristic of adults.

A comparative examination of various scientific conceptions of critical thinking reveals a number of common characteristics that recur across different theoretical interpretations of this phenomenon. These primarily include **recognizing and becoming aware of a problematic situation or uncertainty; formulating questions; analyzing available information; distinguishing facts, assumptions, and subjective opinions from one another; identifying cause-and-effect relationships; seeking relevant evidence; considering alternative solutions and perspectives; taking the viewpoints of others into account; re-evaluating a conclusion or decision that has been reached or adopted; substantiating one’s own position; and being willing to modify a**



previous position on the basis of new information. In addition, monitoring and evaluating one's own thinking activity, that is, a **reflective orientation**, constitutes an important component of this system of characteristics [3, pp. 17–25; 5, pp. 22–23; 6, pp. 6, 17–32; 7, pp. 165–182].

At the same time, applying these general characteristics directly and without modification to the thinking activities of preschool-aged children is not methodologically appropriate. This is because certain aspects of the conceptions developed by J. Dewey, D. Halpern, R. Paul, L. Elder, R. Ennis, and J. E. McPeck presuppose a relatively advanced level of verbal-logical thinking, conscious reflection, and argumentative activity. During the preschool period, however, such intellectual processes have not yet fully developed and manifest themselves in forms that correspond to children's age and psychological capacities, including **simple, practical-action-based, figurative, and dialogic forms.**

Based on the foregoing, when applying the general theoretical construct of critical thinking to preschool education practice, it is necessary to maintain a balance between two aspects: on the one hand, preserving the essential theoretical nature and fundamental characteristics of critical thinking; and on the other hand, expressing these characteristics in forms that correspond to the child's age, level of cognitive development, and experience of participation in different activities. This methodological approach constitutes an

important condition for the scientifically grounded study and development of critical thinking in preschool-aged children.

The necessity of such age-appropriate adaptation can also be explained on the basis of L. S. Vygotsky's cultural-historical theory. His view that higher mental functions initially develop through social interaction and subsequently become part of the child's individual mental activity [23] highlights the particular importance of communication and cooperation with adults and peers in the development of thinking. From this perspective, interpreting critical thinking in preschool-aged children solely as an internal and individual cognitive process is insufficient. Its initial manifestations emerge through intellectual actions that develop in the course of question-and-answer interactions, exchange of ideas, joint discussion, teachers' guiding questions, and collaborative activities with peers.

A. N. Leontiev's activity theory further complements this methodological perspective. According to this theory, the formation and development of mental processes are intrinsically connected with an individual's active engagement in activities [25]. Therefore, organizing the development of critical thinking in preschool-aged children as a process separated from their everyday and natural activities and based exclusively on specially designed theoretical tasks would constitute a limited approach. Instead,



activities that are natural and meaningful for children—such as play, observation, communication, experimentation, comparison, and solving problematic situations—should be regarded as practical contexts for developing elements of critical thinking.

J. Piaget's views on cognitive development, in turn, demonstrate the necessity of ensuring correspondence between children's intellectual capacities and the cognitive demands placed upon them [24]. From this perspective, requiring preschool-aged children to engage in complex forms of reasoning based on formal logical laws, highly developed forms of abstract argumentation, or advanced levels of metacognitive reflection characteristic of adults would not correspond to their developmental capacities. However, this does not mean that the development of critical thinking is impossible during the preschool period. Rather, it indicates the need to determine how this competence manifests itself in terms of content and form at this particular developmental stage, to define expected outcomes in accordance with age-related characteristics, and to develop assessment criteria that correspond to these characteristics.

Theoretical conclusions are also supported, to a certain extent, by contemporary empirical research conducted in preschool education settings. In a systematic review covering 25 empirical studies, C. O'Reilly, A. Devitt, and N. Hayes identified reasoning and

problem-solving processes as among the most frequently examined aspects of critical thinking in preschool-aged children. The authors also considered dialogic interaction and question-and-answer processes, the use of the "language of thinking," and story-based pedagogical approaches to be promising means of activating elements of critical thinking in preschool-aged children [14].

This line of research was further developed in subsequent studies by O'Reilly, Devitt, and Hayes. A study involving 17 children aged 3–5 and two educators demonstrated that, when appropriate pedagogical conditions are established, adult guidance and peer collaboration are provided, certain manifestations of critical thinking can be observed in preschool-aged children [15; pp. 576–594]. However, methodological caution is required when generalizing these findings to all preschool-aged children. The number of participants was relatively small, and the study was conducted within a specific pedagogical context. Therefore, its scientific significance should not be interpreted as providing a universal conclusion applicable to all children; rather, it should be regarded as evidence that certain elements of critical thinking in preschool-aged children can be empirically observed under conditions involving purposeful pedagogical influence, adult support, and a collaborative environment.

Thus, a synthesis of theoretical and empirical sources demonstrates the necessity of taking into account the



interrelationship among the **“general theoretical construct – age-appropriate form of manifestation – pedagogical condition – observable cognitive action”** in the development of critical thinking in preschool-aged children. While preserving the universal essence of critical thinking, its manifestations at the preschool level should be specified through observable actions within children’s actual activities, such as asking questions, seeking causes, comparing, making predictions,

considering alternative options, providing simple explanations for their choices, listening to others’ opinions, and, when necessary, modifying their own views. This conclusion provides a theoretical and methodological basis for determining the **pedagogical and psychological essence, structure, and constituent components of critical thinking competence** in preschool-aged children at the subsequent stage of the study.

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