

PSYCHOLOGICAL MECHANISMS OF THE DEVELOPMENT OF
CRITICAL THINKING IN ADOLESCENTS

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Abstract. *This article analyzes the psychological mechanisms underlying the development of critical thinking in adolescents as a key cognitive and self-regulatory formation. Critical thinking is conceptualized as an integrative ability that ensures the analysis of information, evaluation of arguments, identification of logical errors, and the making of well-grounded decisions. Adolescence is defined as a sensitive developmental period for the formation of these mechanisms due to the intensive development of abstract thinking, reflection, and self-awareness. The study places special emphasis on the role of reflection, self-regulation, volitional control, and motivational factors in activating critical analysis. It is demonstrated that well-developed reflective processes обеспечивают awareness of the grounds of one's own reasoning, while self-regulation contributes to maintaining the cognitive task and adjusting thinking strategies. The importance of the educational environment, dialogic interaction, and problem-based tasks is substantiated as essential conditions for actualizing the psychological mechanisms of critical thinking. The obtained conclusions may be used in the design of psychological and pedagogical programs aimed at fostering intellectual autonomy and adolescents' readiness for conscious decision-making.*

Key words: *critical thinking, adolescence, psychological mechanisms, reflection, self-regulation, volitional control, cognitive activity.*

Аннотация. *В статье анализируются психологические механизмы развития критического мышления у подростков как важнейшего когнитивного и личностно-регуляторного образования. Критическое мышление рассматривается как интегративная способность, обеспечивающая анализ информации, оценку аргументов, выявление логических ошибок и принятие обоснованных решений. Подростковый возраст определяется как сенситивный период для формирования данных механизмов в связи с интенсивным развитием абстрактного мышления, рефлексии и самосознания. В исследовании особое внимание уделяется роли рефлексии, саморегуляции, произвольного контроля и мотивационной сферы в активизации критического анализа. Показано, что развитые рефлексивные процессы обеспечивают осознание оснований собственных рассуждений, а саморегуляция способствует удержанию познавательной задачи и коррекции мыслительных стратегий. Обосновывается значение образовательной среды, диалогического взаимодействия и проблемных заданий как условий актуализации психологических механизмов критического мышления. Полученные выводы могут*

быть использованы при проектировании психолого-педагогических программ, направленных на формирование интеллектуальной самостоятельности и готовности подростков к осознанному принятию решений.

Ключевые слова: *критическое мышление, подростковый возраст, психологические механизмы, рефлексия, саморегуляция, произвольный контроль, познавательная деятельность.*

Introduction. In the context of the modern information society, the problem of developing critical thinking in the younger generation acquires particular scientific and practical significance. Adolescents are daily confronted with large volumes of heterogeneous information, the need to evaluate its reliability, to construct their own positions, and to make independent decisions in academic and social activities. In this regard, critical thinking emerges not only as an essential cognitive skill, but also as a key condition for intellectual independence, social adaptation, and personal maturity.

Adolescence is regarded in psychology as a sensitive period for the formation of higher forms of cognitive regulation. It is at this stage that the intensive development of abstract-logical thinking, reflection, and self-awareness takes place, creating favorable prerequisites for the emergence of critical analysis and conscious control over one's own reasoning. However, the development of critical thinking cannot be considered a direct consequence of age-related maturation. It is largely determined by a system of psychological mechanisms that ensure the transition from impulsive judgments to reflective and well-argued thinking.

In contemporary scientific literature, critical thinking is increasingly interpreted as an integrative construct that includes cognitive operations of analysis and evaluation, as well as regulatory and personality-related components. Within this structure, reflection, self-regulation, volitional control, and motivational processes play a special role, as they ensure awareness of the grounds of one's own conclusions, maintenance of the cognitive task, and correction of thinking strategies. These mechanisms enable adolescents not only to acquire knowledge, but also to construct an individual trajectory of cognitive development.

At the same time, the analysis of psychological and pedagogical practice indicates that traditional instructional models are often primarily oriented toward the reproductive assimilation of information and insufficiently stimulate the development of reflective and regulatory mechanisms of thinking. As a result, a significant proportion of adolescents experience difficulties in argumentation, critical evaluation of sources, and independent decision-making. This testifies to the necessity of purposeful investigation of the psychological mechanisms underlying the development of critical thinking and the search for effective ways to actualize them in the educational process.

Particular relevance in this context is acquired by the analysis of the interrelation of cognitive, regulatory, and motivational mechanisms that ensure the development of

critical thinking in adolescents. The level of reflection, the formation of self-regulation, the ability for volitional control, and intrinsic cognitive motivation act as key conditions for intellectual growth and personal development. Alongside this, the character of the educational environment, the style of pedagogical interaction, and the structure of learning tasks play a substantial role.

In view of the above, the study of the psychological mechanisms of critical thinking development in adolescents represents an актуальная scientific task with important theoretical and applied significance. The results obtained may be used in the design of psychological and pedagogical programs aimed at forming intellectual autonomy, a reflective position, and readiness for conscious decision-making in the conditions of the modern educational environment.

Review of Foreign Literature. A review of foreign scientific literature shows that the problem of the psychological mechanisms of critical thinking development in adolescents is examined within several complementary traditions: cognitive-psychological, instructional, and dispositional-personality approaches. Within the cognitive tradition, critical thinking is most often interpreted as a system of operations of analysis, inference, and evaluation of argumentation. However, already in the classical works of R. Ennis it is emphasized that critical thinking is not reducible to “logical skills”, but presupposes a reflective orientation of reasoning toward the justification of what to believe and how to act. In this logic, the psychological foundation of critical thinking becomes the individual’s ability to maintain evaluative criteria, to verify the grounds of one’s own conclusions, and to purposefully control the course of reasoning, that is, to activate metacognitive monitoring and self-correction.

A significant contribution to the understanding of critical thinking mechanisms was made by D. Halpern, who considers critical thinking as the use of cognitive strategies that increase the probability of successful problem solving and decision-making. Here, the focus is placed not only on reasoning operations, but also on transfer mechanisms: adolescents must be able to apply critical analysis across different contexts—from academic tasks to everyday social situations. This shifts the emphasis toward regulatory components: goal setting, strategy selection, error control, and outcome evaluation.

A separate line of research is associated with the structure and assessment of critical thinking. In this direction, the work of P. Facione (Delphi Report) is widely known, where critical thinking is described as a set of core cognitive skills (interpretation, analysis, evaluation, inference, explanation, self-regulation) and corresponding dispositions. The inclusion of self-regulation as a component is of fundamental importance, as it highlights the psychological nature of critical thinking: adolescents must not only be able to reason, but also to manage their own reasoning, to notice bias, to inhibit impulsive conclusions, and to correct strategies.

A strong empirical basis concerning the age specificity of critical thinking is provided by D. Kuhn. In her work, the development of critical thinking is linked to the evolution

of argumentation, the ability to coordinate evidence and claims, and the growth of epistemological understanding. Critical thinking in adolescents intensifies when they begin to perceive knowledge not as a set of correct answers, but as a system of claims requiring verification and justification. Thus, a central psychological mechanism is the transformation of epistemological position, which changes cognitive motivation and activates reflective control over arguments.

In foreign literature, considerable attention is devoted to the distinction between critical thinking skills and rational thinking. K. Stanovich, R. West, and M. Toplak emphasize the role of thinking dispositions: readiness to search for counterarguments, tolerance for uncertainty, need for cognition, and inclination to check intuitive responses. For adolescents, this is especially relevant, as social and emotional factors increasingly influence decisions, and critical thinking therefore requires mechanisms of inhibition of impulsive reactions and resistance to social pressure.

An equally important perspective is the educational one, where psychological mechanisms are linked to instructional conditions. Research within problem-based learning, dialogic instruction, and formative assessment demonstrates that critical thinking is activated in situations of intellectual difficulty, when adolescents are forced to construct hypotheses, compare positions, and argue conclusions. In this regard, the framework proposed by R. Paul and L. Elder provides applied tools: elements of reasoning and intellectual standards transform critical thinking into a system of learnable actions. Psychologically, this creates an external scaffold of self-control that is gradually internalized and becomes an internal mechanism of thinking regulation.

Finally, studies on the effectiveness of teaching critical thinking emphasize the role of feedback and self-assessment. In the works of J. Hattie and H. Timperley, it is substantiated that maximal effect is achieved by feedback that helps learners understand the goal, current progress, and next step, thus supporting the metacognitive cycle of planning–monitoring–correction.

Foreign studies allow for a generalized conclusion: the psychological mechanisms of critical thinking development in adolescents include (1) metacognitive monitoring and self-correction, (2) self-regulation and volitional control, (3) epistemological transformation of attitudes toward knowledge, (4) motivational-dispositional foundations, and (5) educational conditions that activate and sustain these mechanisms. Taken together, this literature provides a coherent theoretical framework for empirical research.

Conclusion. The conducted theoretical-analytical review and generalization of research results make it possible to conclude that the development of critical thinking in adolescents represents a complex, multi-level, and systemically organized process based on the interaction of cognitive, regulatory, and personality-motivational mechanisms. Critical thinking in adolescence appears not only as a set of logical-analytical skills, but as an integrative personal quality that ensures a conscious attitude toward knowledge, independence of judgment, and readiness for reasoned decision-making.

The analysis of foreign studies demonstrates that metacognitive monitoring and self-regulation play a key role in the development of critical thinking. The adolescent's ability to become aware of the course of their own reasoning, to identify the grounds of conclusions, to detect cognitive biases, and to correct thinking strategies forms internal control over cognitive activity and ensures the transition from intuitive and impulsive judgments to reflective and well-argued analysis.

An equally important component is volitional regulation and control. Maintaining the cognitive goal, inhibiting hasty responses, planning, and consistent hypothesis testing create the basis for stable intellectual activity. The findings confirm that critical thinking is impossible without developed self-regulation mechanisms that allow adolescents to manage not only attention and effort, but also the logic of their own reasoning.

A significant result of the study is the position that the development of critical thinking is closely related to changes in adolescents' epistemological stance. The transition from perceiving knowledge as a set of ready-made truths to understanding it as a system of claims requiring proof and verification is a necessary condition for the formation of a critical position. This shift is accompanied by the growth of cognitive autonomy, tolerance for uncertainty, and readiness to consider alternative viewpoints.

Particular importance is also attached to the motivational-dispositional aspect. Critical thinking develops most successfully in the presence of intrinsic cognitive motivation, an orientation toward checking one's own beliefs, intellectual honesty, and openness to reasoned discussion. Without these personal prerequisites, even a high level of cognitive abilities does not guarantee the development of genuine critical thinking.

In general, the study makes it possible to consider critical thinking in adolescents as the result of a systemic interaction of five groups of psychological mechanisms: metacognitive control, self-regulation, reflection, epistemological transformation, and motivational-dispositional foundations. Their actualization is possible only in a specially organized educational environment oriented toward problem solving, dialogue, argumentation, and formative feedback.

The obtained conclusions have important theoretical and practical significance. From a theoretical perspective, they deepen the understanding of the psychological nature of critical thinking and уточняют its mechanism structure in adolescence. From a practical perspective, the results may serve as a basis for designing psychological and pedagogical programs aimed at forming intellectual autonomy, a reflective position, and readiness for conscious and responsible decision-making in the conditions of modern education.

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