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MODERN PEDAGOGICAL MECHANISMS FOR FORMING PRIMARY SCHOOL STUDENTS' INDEPENDENT THINKING SKILLS IN THE EDUCATIONAL PROCESS

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Abstract:

This article examines modern pedagogical mechanisms for forming independent thinking skills among primary school students within the educational process. The study is grounded in the idea that independent thinking constitutes a core educational outcome in contemporary primary education, as it enables learners to analyze information, compare ideas, make reasoned judgments, solve practical and cognitive problems, and demonstrate initiative in learning situations. The paper explores the pedagogical value of learner-centered instruction, problem-based tasks, dialogic interaction, reflective activities, collaborative learning, formative assessment, and interdisciplinary integration as effective mechanisms for stimulating intellectual autonomy in young learners. Particular attention is given to the age-specific psychological and didactic features of primary school children, which require the use of flexible, development-oriented, and motivationally rich teaching strategies. The article argues that independent thinking does not emerge spontaneously, but is formed through purposefully

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organized educational conditions in which the teacher acts as a facilitator, guide, and creator of cognitively stimulating environments. The study also highlights the importance of encouraging questioning, hypothesis-building, interpretation, creative reasoning, and self-evaluation in classroom practice. As a result, the formation of independent thinking skills is presented not only as a methodological task, but also as a strategic priority for improving the quality of primary education. The findings may be used in teacher education, curriculum design, and the modernization of pedagogical practice in primary schooling.

Keywords: Independent thinking, primary education, pedagogical mechanisms, learner-centered instruction, cognitive activity, problem-based learning, reflective skills, critical reasoning, educational process, formative assessment

BOSHLANG‘ICH TA‘LIM JARAYONIDA O‘QUVCHILARNING MUSTAQIL FIKRLASH KO‘NIKMALARINI SHAKLLANTIRISHNING ZAMONAVIY PEDAGOGIK MEXANIZMLARI

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Annotatsiya

Maqolada boshlang‘ich sinf o‘quvchilarida ta‘lim jarayonida mustaqil fikrlash ko‘nikmalarini shakllantirishning zamonaviy pedagogik mexanizmlari tahlil qilinadi. Tadqiqot zamonaviy boshlang‘ich ta‘limda mustaqil fikrlash muhim

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ta'limiy natija ekanligi g'oyasiga asoslanadi, chunki u o'quvchilarga axborotni tahlil qilish, g'oyalarni taqqoslash, asosli xulosalar chiqarish, amaliy va bilish muammolarini hal etish hamda o'quv vaziyatlarida tashabbus ko'rsatish imkonini beradi. Maqolada o'quvchiga yo'naltirilgan ta'lim, muammoli topshiriqlar, dialogik muloqot, refleksiv faoliyat, hamkorlikda o'qitish, formatif baholash va fanlararo integratsiya yosh o'quvchilarda intellektual mustaqillikni rivojlantiruvchi samarali mexanizmlar sifatida yoritiladi. Boshlang'ich sinf o'quvchilarining yoshga xos psixologik va didaktik xususiyatlari alohida e'tiborda bo'lib, ular moslashuvchan, rivojlantiruvchi va motivatsion jihatdan boy pedagogik strategiyalarni qo'llashni talab etadi. Maqolada mustaqil fikrlash o'z-o'zidan shakllanmasligi, balki o'qituvchi tomonidan kognitiv faollikni rag'batlantiruvchi ta'limiy muhitni maqsadli tashkil etish orqali rivojlantirilishi asoslab beriladi. Shuningdek, dars jarayonida savol qo'yish, taxmin ilgari surish, izohlash, ijodiy mushohada yuritish va o'zini baholash ko'nikmalarini qo'llab-quvvatlash muhimligi ko'rsatib o'tiladi. Natijada mustaqil fikrlash ko'nikmalarini shakllantirish nafaqat metodik vazifa, balki boshlang'ich ta'lim sifatini oshirishga xizmat qiluvchi strategik ustuvor yo'nalish sifatida talqin etiladi. Tadqiqot natijalari bo'lajak pedagoglarni tayyorlashda, o'quv dasturlarini takomillashtirishda va boshlang'ich ta'lim amaliyotini modernizatsiya qilishda qo'llanilishi mumkin.

Kalit so'zlar: mustaqil fikrlash, boshlang'ich ta'lim, pedagogik mexanizmlar, o'quvchiga yo'naltirilgan ta'lim, kognitiv faollik, muammoli ta'lim, refleksiv ko'nikmalar, tanqidiy mushohada, ta'lim jarayoni, formatif baholash.

Introduction.

In the context of rapid social, technological, and cultural change, the goals of primary education are being reconsidered in accordance with the need to prepare children not merely to reproduce ready-made knowledge, but to think

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independently, act consciously, and participate actively in the learning process. Contemporary educational theory increasingly recognizes that the quality of schooling depends not only on the volume of information transmitted to learners, but also on the extent to which educational environments foster curiosity, reasoning, initiative, and intellectual autonomy. For this reason, the formation of independent thinking skills among primary school students has become one of the most significant priorities of modern pedagogy.

Independent thinking in primary education may be understood as a learner's ability to perceive a task thoughtfully, analyze available information, compare alternative ideas, draw simple conclusions, justify personal opinions, and make decisions appropriate to age and context. At the primary school stage, these abilities are not yet fully mature in a formal logical sense, yet they emerge as essential cognitive foundations that determine the child's further educational development. If the school creates favorable pedagogical conditions from the earliest grades, pupils gradually acquire habits of reflection, self-expression, problem-solving, and responsible participation in collective and individual learning activities.

The relevance of this topic is closely connected with the transformation of educational paradigms from teacher-dominated transmission models toward learner-centered and competency-based approaches. In the traditional classroom, pupils often remain passive recipients of information, expected to memorize facts and reproduce them in standard forms. Such practices, although useful for certain basic skills, are insufficient for developing flexible thinking, independence of judgment, and creative engagement. By contrast, modern pedagogy emphasizes the active position of the learner, the developmental role of dialogue, the educational value of inquiry, and the importance of creating situations in which children can ask questions, make assumptions, test ideas, and reflect on their own learning strategies.

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For primary school students, the formation of independent thinking requires special pedagogical sensitivity because this age period is marked by intensive intellectual, emotional, and social development. Children begin to move from intuitive and situational responses toward more structured cognitive operations. They learn to generalize, classify, compare, and establish elementary causal relationships. However, these processes do not unfold automatically. They depend on the teacher's methodological competence, the nature of educational tasks, the emotional climate of the classroom, and the availability of instructional mechanisms that activate thinking rather than suppress it. Consequently, the educational process should be organized in such a way that each lesson becomes not only a means of transmitting content, but also a space for mental effort, reflection, and personal discovery.

Modern pedagogical mechanisms aimed at developing independent thinking include problem-based instruction, interactive methods, dialogic teaching, collaborative learning, differentiated assignments, reflective exercises, formative assessment, and interdisciplinary integration. These mechanisms are valuable because they shift the educational focus from passive listening to active meaning-making. Through well-designed pedagogical interaction, children begin to interpret information more deeply, formulate personal viewpoints, and participate in cognitive tasks with greater confidence. The role of the teacher in this model is transformed into that of a facilitator who organizes developmental situations, supports children's reasoning, and guides them toward greater self-regulation.

Thus, the issue of forming independent thinking skills in the primary educational process has both theoretical and practical significance. It is directly related to the modernization of teaching methods, the improvement of educational quality, and the preparation of learners for future intellectual and social challenges. The study of modern pedagogical mechanisms in this area is therefore necessary for enriching primary education with more effective, humanistic, and development-oriented instructional practices.

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Methods

The methodological basis of this study is grounded in a competence-based, learner-centered, and developmental approach to primary education. These approaches make it possible to examine the formation of independent thinking skills not as an isolated psychological phenomenon, but as a purposeful pedagogical process organized through specific teaching mechanisms, classroom interactions, and didactic conditions. The competence-based approach allows independent thinking to be interpreted as an integrated educational outcome that includes cognitive, communicative, reflective, and practical components. The learner-centered approach emphasizes the value of the child's individuality, subjective experience, learning needs, and personal pace of development. The developmental approach focuses on the dynamic formation of intellectual abilities through guided activity, problem-solving, and social interaction within the learning environment.

The study employed a qualitative pedagogical research design supported by theoretical analysis and interpretive synthesis. At the first stage, scientific, pedagogical, and methodological literature on independent thinking, modern teaching technologies, primary education methodology, and child cognitive development was analyzed. This made it possible to identify the conceptual foundations of the research, clarify the meaning of key categories, and determine the pedagogical conditions under which independent thinking can be effectively formed in young learners. The analysis of literature also enabled the classification of modern pedagogical mechanisms according to their didactic function, such as motivational stimulation, cognitive activation, reflective support, communicative engagement, and evaluative regulation.

At the second stage, a comparative analysis of contemporary pedagogical methods used in primary classrooms was conducted. Special attention was paid to those methods that create favorable conditions for children's active participation in the educational process. Among them were problem-based

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learning, dialogic interaction, brainstorming, educational games, creative assignments, work with visual and textual information, collaborative mini-projects, differentiated tasks, and formative assessment strategies. Each of these mechanisms was examined in terms of its potential to develop independence of judgment, flexibility of thought, reasoning ability, and self-expression. The comparative method allowed the study to reveal both the common developmental features of these mechanisms and their specific pedagogical effects in different instructional contexts.

The study also used pedagogical modeling as an important research method. On the basis of theoretical generalization, a model of forming independent thinking skills in primary school students was conceptually designed. This model includes interconnected components such as motivational orientation, cognitively challenging content, interactive forms of learning, reflective support, and teacher facilitation. The model assumes that independent thinking develops most effectively when the child is placed in situations requiring choice, justification, comparison, inference, and self-correction. Within this framework, the teacher does not provide ready-made answers in a directive form, but rather structures educational tasks in ways that stimulate inquiry, encourage exploration, and support the gradual internalization of thought processes.

In addition, elements of observation-based pedagogical interpretation were used as an auxiliary method. Classroom situations described in methodological sources and generalized educational practice were interpreted to identify recurring patterns in the formation of independent thinking. These patterns included students' responses to open-ended questions, their participation in group discussions, their ability to generate alternative solutions, and their willingness to explain personal viewpoints. Such interpretive attention made it possible to connect abstract pedagogical theory with real instructional behavior and practical methodological recommendations.

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Thus, the chosen methods ensured a comprehensive examination of the problem by combining theoretical analysis, pedagogical comparison, conceptual modeling, and interpretive generalization. This methodological combination supports a deeper understanding of how modern pedagogical mechanisms function in the educational process and how they can be used systematically to promote independent thinking among primary school students.

Results

The results of the study show that the formation of independent thinking skills in primary school students is most effective when the educational process is organized on the basis of pedagogical mechanisms that ensure active cognitive participation, emotional involvement, and gradual intellectual autonomy. The analysis of modern pedagogical practices demonstrates that independent thinking does not arise under conditions of mechanical memorization or rigidly reproductive instruction. It develops when learners are systematically engaged in situations that require observation, comparison, reasoning, interpretation, evaluation, and choice. In this regard, the study identified a number of pedagogical mechanisms whose didactic potential is especially significant in primary education.

One of the central results is the recognition of problem-based learning as a powerful mechanism for developing independent thinking. When students are presented with educational tasks that contain an element of uncertainty, contradiction, or inquiry, they are encouraged to search for explanations, formulate assumptions, and test their ideas through reasoning. In the primary school classroom, such tasks may take the form of simple problematic questions, practical situations, unfinished stories, logical puzzles, or interdisciplinary exercises. The findings indicate that these forms of instruction stimulate not only intellectual curiosity but also the child's readiness to participate more actively in

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the lesson. As a result, students begin to move from passive reception of information to a more reflective and exploratory learning position.

Another important result concerns the role of dialogic interaction in shaping students' independent reasoning. The study found that classroom dialogue creates favorable conditions for children to express opinions, listen to alternatives, compare perspectives, and justify their views using age-appropriate arguments. Dialogic teaching strengthens the communicative basis of thinking and makes intellectual activity more visible, collective, and structured. When the teacher asks open-ended questions, encourages multiple answers, and supports respectful discussion, pupils become more confident in articulating their thoughts. This process gradually leads to the development of self-confidence, verbal reasoning, and the ability to reconsider one's own opinion in light of new information.

The results also show that reflective activities have substantial didactic significance in the development of independent thinking. Reflection enables young learners to become aware of what they have understood, how they have solved a task, what difficulties they encountered, and what strategies helped them succeed. In pedagogical terms, reflection acts as a bridge between action and awareness. Classroom practices such as short self-evaluation, learning journals, verbal summaries, "what I learned today" tasks, and guided feedback conversations help students internalize learning processes. Through repeated reflective experiences, primary school pupils begin to monitor their own cognitive actions more consciously, which contributes to the gradual formation of self-regulation and independence in learning.

A further result of the study is the identification of collaborative learning as an effective pedagogical condition for fostering independent thought. Although independence is often associated with individual work, the findings demonstrate that cooperation with peers can significantly enhance the child's personal thinking processes. In collaborative tasks, students compare answers, explain ideas to classmates, negotiate meanings, and encounter diverse ways of solving

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problems. This social dimension of cognition broadens intellectual flexibility and encourages children to evaluate not only their own answers but also alternative reasoning patterns. Properly organized group or pair work therefore contributes to both social and cognitive development and becomes a meaningful mechanism for cultivating independent judgment.

The study additionally revealed the importance of formative assessment in supporting the development of independent thinking. Unlike purely summative evaluation, formative assessment helps learners understand the purpose of a task, recognize quality criteria, reflect on progress, and adjust strategies. Feedback focused on reasoning, effort, and process rather than only on final correctness creates a psychologically supportive environment in which students are less afraid of making mistakes and more willing to think for themselves. This result is especially important for primary education, where emotional security and encouragement strongly influence the child's readiness to take intellectual initiative.

In general, the results confirm that modern pedagogical mechanisms can significantly strengthen the formation of independent thinking skills when they are implemented systematically, developmentally, and in accordance with the psychological characteristics of primary school children. The effectiveness of these mechanisms depends on the integration of cognitive challenge, communicative openness, reflective support, and learner-centered facilitation within the educational process.

Discussion

The findings of this study confirm that the formation of independent thinking skills in primary school students should be considered one of the central tasks of the contemporary educational process. In modern pedagogy, independent thinking is no longer understood only as an individual intellectual ability, but as a multidimensional educational result that reflects the learner's capacity to

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engage meaningfully with knowledge, act consciously in problem situations, and gradually assume responsibility for personal learning. From this perspective, the discussion of pedagogical mechanisms becomes especially important, since the development of such thinking depends less on isolated instructional techniques and more on the coherence of the entire educational environment.

The analysis suggests that independent thinking emerges most successfully in classrooms where pedagogical interaction is organized on the basis of activity, dialogue, reflection, and developmental support. This means that the educational process should not be limited to the transmission of finished information. If children only receive ready-made answers, memorize rules, and reproduce textbook material without interpretation, their thinking remains dependent on external guidance. By contrast, when they are encouraged to compare facts, formulate assumptions, justify opinions, and search for solutions, they begin to experience learning as a process of intellectual participation. In this sense, modern pedagogical mechanisms do not merely diversify the lesson structure, but fundamentally change the learner's role within the educational process.

A particularly significant issue emerging from the study is the balance between pedagogical guidance and student autonomy. Primary school children cannot be expected to think independently without support, because their cognitive operations are still in the stage of formation. Therefore, the task of the teacher is not to withdraw from the process, but to provide structured assistance that gradually leads the child toward greater mental independence. This includes asking productive questions, designing age-appropriate problem situations, giving time for reflection, supporting exploratory talk, and creating emotionally safe conditions for intellectual risk-taking. The discussion thus shows that independence in thinking is not opposed to teaching; rather, it is the result of professionally guided pedagogical mediation.

Another important aspect concerns the age-specific nature of primary education. At this stage, children's independent thinking is closely connected with

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imagination, speech development, emotional engagement, and practical action. For this reason, effective pedagogical mechanisms should be adapted to the psychological characteristics of younger learners. Activities that integrate visual support, игровое взаимодействие, simple research tasks, collaborative dialogue, and reflective exercises tend to be more productive than abstract or overly formal instruction. The discussion therefore highlights the need for methodological flexibility. The same pedagogical mechanism may produce different results depending on how well it corresponds to children's developmental readiness, interests, and prior learning experience.

The study also indicates that the development of independent thinking requires a shift in assessment culture. In many traditional classrooms, students become oriented toward finding the one correct answer as quickly as possible, often without understanding the process of reasoning. Such an approach can weaken initiative and discourage children from expressing original ideas. A more productive assessment model values explanation, justification, alternative reasoning, and thoughtful effort. When children see that their thinking process matters, they become more motivated to participate actively and confidently. This has important implications for teacher education, as future primary school teachers must be prepared not only to teach subject content, but also to assess and support the growth of students' intellectual autonomy.

Overall, the discussion confirms that modern pedagogical mechanisms have strong developmental potential when implemented systematically and reflectively. Their effectiveness lies in the creation of a classroom culture where questioning, reasoning, exploration, and self-expression are treated as natural and necessary components of learning. In this way, the formation of independent thinking becomes a foundation for broader educational quality, personal development, and future academic success.

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Conclusion

The study demonstrates that the formation of independent thinking skills in primary school students is a strategically important objective of the modern educational process and an essential condition for improving the overall quality of primary education. Independent thinking in early schooling serves not only as a cognitive outcome, but also as a foundation for the learner's personal growth, academic confidence, communicative development, and future capacity for conscious decision-making. For this reason, the issue should be viewed not as a secondary methodological concern, but as one of the core priorities in the renewal of educational practice.

The analysis confirms that independent thinking does not develop spontaneously or solely as a result of age-related maturation. It is formed under specially organized pedagogical conditions in which the child becomes an active participant in learning rather than a passive recipient of ready-made information. Modern pedagogical mechanisms such as problem-based learning, dialogic teaching, collaborative activity, reflective exercises, differentiated instruction, and formative assessment create the instructional environment necessary for this process. These mechanisms are effective because they involve pupils in reasoning, interpretation, comparison, explanation, and choice, thereby gradually strengthening their intellectual autonomy.

A significant conclusion of the study is that the success of this process depends largely on the professional role of the teacher. In primary education, the teacher functions not only as a transmitter of knowledge, but also as a designer of developmental situations, a facilitator of inquiry, and a guide in the child's cognitive and emotional growth. The formation of independent thinking becomes more effective when the teacher asks open-ended questions, encourages students to justify answers, values alternative opinions, provides time for reflection, and creates a psychologically safe classroom atmosphere. Under such conditions, children begin to express their ideas more confidently, assume greater

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responsibility for learning, and develop the ability to reflect on their own intellectual actions.

The study also shows that independent thinking in primary school should be understood in an age-sensitive way. It is not expressed through abstract theoretical reasoning alone, but through simple yet meaningful acts of comparison, questioning, explanation, imagination, and problem-solving appropriate to the child's developmental stage. Therefore, modern pedagogical mechanisms should be adapted to the characteristics of younger learners and integrated into everyday classroom practice in flexible and accessible forms. Their value lies in the fact that they connect subject learning with broader developmental aims and transform the lesson into a space of thought, discovery, and self-expression.

In summary, the formation of independent thinking skills among primary school students requires a systematic, pedagogically grounded, and humanistically oriented approach. The integration of modern pedagogical mechanisms into the educational process contributes to the development of intellectually active, reflective, and self-directed learners. This, in turn, creates favorable conditions for the modernization of primary education, the preparation of competent future citizens, and the strengthening of learner-centered educational values in school practice.

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