

PSYCHOLOGICAL MECHANISMS OF DEVELOPING PERSONAL CREATIVITY IN LATE ADOLESCENTS: AN INTEGRATIVE MODEL FOR SENIOR SECONDARY SCHOOL EDUCATION

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Annotation: This article presents a conceptual analysis of the psychological mechanisms that support the development of personal creativity in educational contexts, with a special focus on late adolescents (senior general-secondary school students (grades 10–11)). Creativity is considered not only as the production of novel ideas but also as an integrative personal capacity that combines cognitive flexibility, intrinsic motivation, emotional regulation, and self-regulation of goal-directed activity. The paper systematizes key mechanisms into six interrelated groups: (1) cognitive mechanisms (divergent thinking, associative fluency, cognitive flexibility, problem representation), (2) motivational mechanisms (intrinsic motivation, autonomy, achievement goals), (3) affective mechanisms (emotional sensitivity, regulation of anxiety, tolerance of ambiguity), (4) socio-psychological mechanisms (supportive feedback, psychological safety, collaborative creativity), (5) metacognitive and self-regulatory mechanisms (planning, monitoring, reflective evaluation, creative self-efficacy), and (6) developmental-contextual mechanisms (identity formation, value orientation, learning environment). The sixth group of mechanisms is treated as especially significant for late adolescents, since this developmental stage is characterized by the consolidation of abstract-logical thinking and the active formation of personal and future professional identity. Based on these mechanisms, the article proposes an integrative model describing how creativity develops through a sequence of stages: activation of curiosity, exploration and idea generation, evaluation and refinement, implementation, and reflective consolidation. Practical implications for psychological and pedagogical work with late adolescents are discussed, including designing learning tasks that encourage autonomy, foster structured reflection, and reduce the fear of error. The article avoids unsupported statistical claims and positions the model as a theoretical basis for further empirical research and diagnostics.

Keywords: creativity, personal creativity, divergent thinking, intrinsic motivation, self-regulation, metacognition, creative self-efficacy, emotional regulation, psychological safety, late adolescence, late adolescents, cognitive flexibility, tolerance of ambiguity.

Аннотация: В данной статье представлен концептуальный анализ психологических механизмов, поддерживающих развитие личностной креативности в образовательном контексте, с особым акцентом на поздних подростковых возрастах (учащиеся старших классов общеобразовательной школы (10–11 классы)). Креативность рассматривается не только как создание новых идей, но и как интегративная личностная способность, сочетающая в себе когнитивную гибкость, внутреннюю мотивацию, эмоциональную регуляцию и саморегуляцию целенаправленной деятельности. В статье ключевые механизмы систематизированы в шесть взаимосвязанных групп: (1) когнитивные механизмы (дивергентное мышление, ассоциативная беглость, когнитивная гибкость, представление проблемы), (2) мотивационные механизмы (внутренняя мотивация, автономия, цели достижения), (3) аффективные механизмы (эмоциональная чувствительность, регуляция тревожности, толерантность к неопределенности), (4) социально-психологические механизмы (поддерживающая обратная связь, психологическая безопасность, совместное творчество), (5) метакогнитивные и саморегулирующие механизмы (планирование, мониторинг, рефлексивная оценка, творческая самооэффективность) и (6) контекстуально-развитийные механизмы (формирование идентичности, ценностная ориентация, учебная среда). Шестая группа механизмов рассматривается как особенно важная для позднего подросткового возраста, поскольку этот этап развития характеризуется консолидацией абстрактно-логического мышления и активным формированием личной и будущей профессиональной идентичности. На основе этих механизмов в статье предлагается интегративная модель, описывающая развитие креативности через последовательность этапов: активизация любопытства, исследование и генерация идей, оценка и уточнение, реализация и рефлексивная консолидация. В

статье обсуждаются практические последствия для психологической и педагогической работы с подростками позднего возраста, включая разработку учебных заданий, которые поощряют автономию, способствуют структурированному осмыслению и снижают страх ошибок. В статье избегаются необоснованные статистические утверждения и модель позиционируется как теоретическая основа для дальнейших эмпирических исследований и диагностики.

Ключевые слова: креативность, личная креативность, дивергентное мышление, внутренняя мотивация, саморегуляция, метакогниция, творческая самооффективность, эмоциональная регуляция, психологическая безопасность, поздний подростковый возраст, когнитивная гибкость, толерантность к неопределенности.

Annotatsiya: Ushbu maqolada ta'lim sharoitida shaxsiy ijodkorlikni rivojlantirishni qo'llab-quvvatlovchi psixologik mexanizmlarning kontseptual tahlili keltirilgan bo'lib, ayniqsa kech o'smirlarga (umumiy o'rta maktabning katta yoshdagi o'quvchilari (10-11-sinflar)) alohida e'tibor qaratilgan. Ijodkorlik nafaqat yangi g'oyalarni ishlab chiqarish, balki kognitiv moslashuvchanlik, ichki motivatsiya, hissiy tartibga solish va maqsadga yo'naltirilgan faoliyatning o'zini o'zi tartibga solishini birlashtirgan integrativ shaxsiy qobiliyat sifatida ham qaraladi. Maqolada asosiy mexanizmlar oltita o'zaro bog'liq guruhlariga tizimlashtirilgan: (1) kognitiv mexanizmlar (divergent fikrlash, assotsiativ ravonlik, kognitiv moslashuvchanlik, muammoni ifodalash), (2) motivatsion mexanizmlar (ichki motivatsiya, avtonomiya, maqsadlarga erishish), (3) affektiv mexanizmlar (hissiy sezgirlik, xavotirni tartibga solish, noaniqlikka bardoshlilik), (4) ijtimoiy-psixologik mexanizmlar (qo'llab-quvvatlovchi fikr-mulohaza, psixologik xavfsizlik, hamkorlikdagi ijodkorlik), (5) metakognitiv va o'zini o'zi tartibga solish mexanizmlari (rejalashtirish, monitoring, refleksiv baholash, ijodiy o'zini o'zi boshqarish) va (6) rivojlanish-kontekstual mexanizmlar (shaxsni shakllantirish, qiymatga yo'naltirish, o'rganish muhiti). Oltinchi guruh mexanizmlari, ayniqsa, kech o'smirlar uchun ahamiyatli deb qaraladi, chunki bu rivojlanish bosqichi mavhum-mantiqiy fikrlashni mustahkamlash va shaxsiy va kelajakdagi professional identifikatsiyani faol shakllantirish bilan tavsiflanadi. Ushbu mexanizmlarga asoslanib, maqolada ijodkorlikning bir qator bosqichlar orqali qanday rivojlanishini tasvirolovchi integrativ model taklif etiladi: qiziqishni faollashtirish, tadqiqot va g'oyalarni yaratish, baholash va takomillashtirish, amalga oshirish va aks ettirishni mustahkamlash. Kech o'smirlar bilan psixologik va pedagogik ishning amaliy oqibatlarini, jumladan, avtonomiyani rag'batlantiradigan, tuzilgan aks ettirishni rivojlantiradigan va xato qo'rquvini kamaytiradigan o'quv vazifalarini ishlab chiqish muvaffaqiyatli qilinadi. Maqolada qo'llab-quvvatlanmaydigan statistik da'volardan qochadi va modelni keyingi empirik tadqiqotlar va diagnostika uchun nazariy asos sifatida joylashtiradi.

Kalit so'zlar: ijodkorlik, shaxsiy ijodkorlik, divergent fikrlash, ichki motivatsiya, o'zini o'zi boshqarish, metakognitsiya, ijodiy o'zini o'zi boshqarish, hissiy tartibga solish, psixologik xavfsizlik, kech o'smirlar, kech o'smirlar, kognitiv moslashuvchanlik, noaniqlikka bag'rikenglik.

Introduction: In psychological and educational practice, creativity is increasingly viewed as a key competence for personal development, professional adaptation, and social innovation. However, creativity does not emerge "by itself" as a stable trait; it is shaped through the interaction of cognitive processes, motivation, emotions, social context, and self-regulation. For late adolescents, the problem is especially relevant because this developmental stage combines increasingly complex academic tasks with the approaching necessity of choosing a future field of study or profession, requiring independent thinking, tolerance of uncertainty, and the ability to transform knowledge into original solutions. This article, therefore, focuses on systematizing the psychological mechanisms that underlie creativity development and on proposing an integrative model that can serve as a theoretical basis for educational design and further empirical research.

Conceptualizing personal creativity: In contemporary psychology, creativity is commonly defined through the combination of novelty and usefulness/appropriateness. In educational contexts, personal creativity may be understood as the late adolescent's ability to generate, evaluate, and implement original ideas within learning tasks while maintaining motivation and psychological stability. This view emphasizes that creativity is not only an outcome (a creative product) but also a process supported by mechanisms such as cognitive flexibility, intrinsic interest, and reflective self-regulation.

Cognitive mechanisms: A core psychological foundation of creativity is the ability to move beyond rigid patterns of thought. Divergent thinking supports the generation of multiple alternatives; associative fluency enables the individual to connect distant concepts; and cognitive flexibility helps shift between perspectives, strategies, and categories. Another important mechanism is problem representation: creative

individuals often restructure the problem space, reframing constraints as resources and turning vague tasks into clearer subproblems. By late adolescence, formal operational thinking is generally already consolidated (J. Piaget), which allows these cognitive mechanisms to operate on increasingly abstract and self-relevant material rather than only on concrete tasks. In senior secondary school education, these mechanisms can be developed through open-ended tasks, alternative-solution assignments, and activities that encourage comparison of different conceptual models rather than memorization.

Motivational mechanisms: Motivation determines whether a person engages in creative exploration long enough to produce meaningful outcomes. Intrinsic motivation—interest and enjoyment in the activity itself—plays a central role, especially when tasks are complex and uncertain. Autonomy support (the perception that one can choose methods, topics, or formats) strengthens intrinsic motivation and persistence. Achievement goals also matter: mastery-oriented goals (learning, improvement, competence) typically stimulate deeper exploration than purely performance-oriented goals (grades, external evaluation). For late adolescents, autonomy needs are typically more consciously articulated than in earlier adolescence and are often connected to emerging career or higher-education plans; creativity is more likely to develop when they experience “permission to explore” and when the learning environment values process and growth over final correctness.

Affective mechanisms: Emotions influence creativity in two main ways: they shape cognitive access (what ideas come to mind) and they regulate risk-taking (whether a person dares to propose unusual solutions). Creative work often involves uncertainty and fear of failure; therefore, tolerance of ambiguity and regulation of anxiety become crucial mechanisms. For late adolescents, this emotional risk is often intensified by the pressure of upcoming examinations, admission requirements, and comparison with peers preparing for similar academic or professional pathways. Emotional sensitivity can support creative insight by making the person attentive to subtle cues, but without regulation it can also lead to avoidance. In educational practice, psychological safety and constructive feedback are essential for reducing fear of mistakes and supporting experimentation.

Socio-psychological mechanisms: Creativity develops in social interaction—through dialogue, collaborative problem-solving, and feedback. Psychological safety (the sense that one will not be humiliated for speaking up) enables late adolescents to share raw ideas. Supportive feedback strengthens creative self-efficacy and helps refine ideas without suppressing originality. Collaborative creativity also emerges when group roles are balanced: some members generate alternatives while others evaluate feasibility, and the group norms support respectful disagreement. At this age, students are also more capable of engaging with detailed, criteria-based peer feedback than younger adolescents. In senior secondary school education, seminars, project-based learning, and peer-review practices can activate these mechanisms if structured appropriately.

Metacognitive and self-regulatory mechanisms: Creativity requires not only generating ideas but also managing the process: planning, monitoring progress, and reflecting on results. Metacognition helps a late adolescent notice when a strategy is unproductive and switch to a different approach. Self-regulation supports persistence, time management, and the ability to return to the task after setbacks. A key personal mechanism is creative self-efficacy—belief in one's capacity to produce creative outcomes. When late adolescents develop reflective habits (e.g., documenting how they arrived at solutions, comparing alternatives, identifying their own strengths and weaknesses), creativity becomes more stable and transferable across domains.

Developmental and contextual mechanisms: Creativity is embedded in personality development, identity formation, and value orientation. Late adolescence is a period in which personal and future professional identity formation is especially active (E. Erikson's identity-formation stage); students often move from externally driven learning (to meet requirements) toward self-directed learning (to pursue meaningful, self-chosen goals related to a future field of study or profession). When creativity is integrated into a person's identity (“I can create; I can contribute”), it becomes more persistent. Context also matters: workload, time pressure, and rigid evaluation may suppress experimentation. Conversely, environments that allow iterative improvement and provide time for exploration promote creative growth.

Integrative model of creativity development (stages): Based on the mechanisms above, the development of personal creativity in late adolescence can be described through a sequence of stages that repeatedly cycle in learning and project work:

Stage 1 (Curiosity activation): Interest is triggered by a meaningful question, real-life problem, or personally relevant challenge; motivation and attention are mobilized.

Stage 2 (Exploration and idea generation): Divergent thinking and associative processes expand the set of alternatives; late adolescence, combine, and transform concepts.

Stage 3 (Evaluation and refinement): Metacognitive monitoring and critical thinking help select promising options; feedback is used to improve structure and feasibility.

Stage 4 (Implementation): Self-regulation supports persistence; the idea is translated into a concrete product (text, project, intervention, method).

Stage 5 (Reflective consolidation): Reflection stabilizes learning; late adolescence identifies what mechanisms helped them and how the strategy can transfer to new tasks.

This model highlights that creativity is not a single moment of insight; it is a managed process that requires psychological resources and supportive context.

Implications for psychological-pedagogical practice: For senior secondary school educational settings, the model suggests several practical directions. First, tasks should include an element of openness: multiple acceptable solutions rather than one correct answer. Second, autonomy should be supported through the choice of topic, method, or product format, ideally connected to late adolescents' emerging academic or career interests, while still providing clear criteria. Third, feedback should be framed as developmental: highlighting strengths, offering concrete suggestions for improvement, and normalizing revision. Fourth, reflective tools (learning diaries, self-assessment checklists, peer review protocols) should be integrated to develop metacognition. Fifth, psychological safety must be maintained by establishing norms that protect students from ridicule and allow "draft thinking." These interventions do not require expensive resources; they mainly require purposeful educational design.

Limitations and future research: This article proposes a theoretical model rather than reporting experimental results. Therefore, the next step is operationalization: developing diagnostics for the proposed mechanisms (e.g., measures of creative self-efficacy, tolerance of ambiguity, metacognitive strategy use) and testing how educational interventions influence creativity over time in late adolescents. Future research may also examine domain specificity (creativity in writing, problem solving, and school-based practice) and cultural and contextual factors relevant to senior secondary school education in Uzbekistan.

Conclusion: Personal creativity develops through a complex interaction of cognitive flexibility, intrinsic motivation, emotional regulation, social support, and metacognitive self-regulation. In late adolescence, creativity can be strengthened by designing learning environments that support autonomy, normalize iterative refinement, provide psychological safety, and teach reflective strategies — an approach that is especially consequential at this stage, since it coincides with the active formation of personal and future professional identity. The integrative model offered in this article can serve as a conceptual framework for further empirical study and for practical psychological-pedagogical work aimed at developing late adolescents' creative potential.

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