

PSYCHOLOGICAL MECHANISMS OF DEVELOPING PERSONAL CREATIVITY IN LATE ADOLESCENTS: SELF-REGULATION AND INTRINSIC MOTIVATION

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Annotation: This article presents a theoretical and analytical overview of the psychological mechanisms that support the development of personal creativity in late adolescents (senior general-secondary school students, approximately 16–18 years of age, grades 10–11). Creativity is understood not only as a cognitive ability but also as an integrated system encompassing motivational, emotional, self-regulatory, and socio-contextual components. The paper synthesizes well-established perspectives in creativity research and proposes a structured model in which divergent thinking, domain knowledge, intrinsic motivation, self-efficacy, metacognitive regulation, and supportive learning environments jointly enable creative performance. Special attention is given to self-regulation (goal setting, monitoring, reflection) and intrinsic motivation (autonomy, interest, meaning) as mechanisms that connect creative potential with real creative actions. The article gives particular attention to the fact that late adolescence is a sensitive stage for the consolidation of creative identity, since it coincides with the stabilization of abstract and hypothetical reasoning, the intensification of identity formation, and the approaching necessity of choosing a professional or educational pathway. The article outlines practical implications for senior secondary school education, including psychological factors in designing creative tasks, feedback strategies, and classroom climates that reduce fear of mistakes while strengthening late adolescents' creative identity.

Keywords: personal creativity, creativity development, late adolescence, late adolescents, self-regulation, intrinsic motivation, metacognition, self-efficacy, divergent thinking, creative identity, educational psychology.

Аннотация: В статье представлен теоретико-аналитический обзор психологических механизмов, способствующих развитию личностной креативности в период позднего подросткового возраста (учащиеся старших классов общеобразовательной школы, примерно 16–18 лет, 10–11 классы). Креативность рассматривается не только как когнитивная способность, но и как интегрированная система, включающая мотивационные, эмоциональные, саморегуляционные и социально-контекстуальные компоненты. В статье обобщены устоявшиеся подходы в исследованиях креативности и предложена структурированная модель, в которой дивергентное мышление, предметные знания, внутренняя мотивация, самоэффективность, метакогнитивная регуляция и поддерживающая образовательная среда совместно обеспечивают творческую деятельность. Особое внимание уделяется саморегуляции (постановка целей, мониторинг, рефлексия) и внутренней мотивации (автономия, интерес, осмысленность) как механизмам, связывающим творческий потенциал с реальными творческими действиями. Подчеркивается, что поздний подростковый возраст является чувствительным этапом для укрепления творческой идентичности, поскольку он совпадает со стабилизацией абстрактного и гипотетического мышления, активизацией формирования идентичности и приближением необходимости выбора профессиональной или образовательной траектории. В статье обозначены практические выводы для старшей школы, включая учет психологических факторов при разработке творческих заданий, выборе стратегий обратной связи и формировании благоприятного психологического климата в классе, снижающего страх ошибок и укрепляющего творческую идентичность старшеклассников.

Ключевые слова: личностная креативность, развитие креативности, поздний подростковый возраст, старшие подростки, саморегуляция, внутренняя мотивация, метакогниция, самоэффективность, дивергентное мышление, творческая идентичность, педагогическая психология.

Annotatsiya: Ushbu maqolada kech o'smirlik davrida shaxsiy kreativlikni rivojlantirishni qo'llab-quvvatlovchi psixologik mexanizmlarning nazariy va tahliliy sharhi taqdim etilgan. Bunda umumiy o'rta ta'lim maktablarining yuqori sinf o'quvchilari, ya'ni taxminan 16–18 yoshdagi 10–11-sinf o'quvchilari

nazarda tutiladi. Kreativlik nafaqat kognitiv qobiliyat, balki motivatsion, emotsional, o‘zini o‘zi boshqarish va ijtimoiy-kontekstual komponentlarni qamrab oluvchi yaxlit tizim sifatida talqin qilinadi. Maqolada kreativlik bo‘yicha shakllangan ilmiy yondashuvlar umumlashtirilib, divergent fikrlash, sohaga oid bilimlar, ichki motivatsiya, o‘ziga bo‘lgan ishonch, metakognitiv boshqaruv va qo‘llab-quvvatlovchi ta‘lim muhiti ijodiy faoliyatni birgalikda ta‘minlaydigan tarkibiy model taklif etiladi. Kreativ salohiyatni real ijodiy harakatlar bilan bog‘lovchi mexanizmlar sifatida o‘zini o‘zi boshqarish (maqsad qo‘yish, monitoring, refleksiya) va ichki motivatsiyaga (mustaqillik, qiziqish, mazmunlilik) alohida e‘tibor qaratilgan. Shuningdek, kech o‘smirlik davri kreativ identiklikni mustahkamlash uchun sezgir bosqich ekanligi ta‘kidlanadi, chunki aynan shu davr abstrakt va faraziy fikrlashning barqarorlashuvi, shaxsiy identiklikning faol shakllanishi hamda kasbiy yoki ta‘limiy yo‘nalishni tanlash zaruratining yaqinlashuvi bilan tavsiflanadi. Maqolada yuqori sinf ta‘limi uchun amaliy tavsiyalar ham bayon etilib, ular kreativ topshiriqlarni loyihalashda psixologik omillarni hisobga olish, samarali fikr-mulohaza strategiyalarini qo‘llash hamda xato qilish qo‘rquvini kamaytirib, o‘quvchilarning kreativ identikligini mustahkamlovchi sinf muhitini shakllantirishni qamrab oladi.

Kalit so‘zlar: shaxsiy kreativlik, kreativlikni rivojlantirish, kech o‘smirlik, katta o‘smirlar, o‘zini o‘zi boshqarish, ichki motivatsiya, metakognitsiya, o‘ziga bo‘lgan ishonch, divergent fikrlash, kreativ identiklik, pedagogik psixologiya.

Introduction: Creativity has become a central psychological and educational construct in the 21st century because it supports adaptation, problem solving, innovation, and personal flexibility. In senior secondary school education, creativity is especially important during late adolescence: at this stage, learners face increasingly specialized academic tracks, the approaching necessity of choosing a profession or field of higher education, and heightened expectations of independent, original work, all of which require not only reproductive knowledge but also the ability to generate original ideas, adapt to unexpected situations, and think independently. At the same time, creativity is often misunderstood as a rare "talent" or a spontaneous gift, which leads to two practical risks in senior school education: (a) late adolescents may underestimate their creative potential, and (b) educational practice may focus on reproduction of knowledge rather than creative action. A psychologically grounded view treats creativity as a developable phenomenon shaped by mechanisms that connect a person's potential with their actual behavior and products.

The problem statement and aim: The broad theme "Psychological mechanisms of development of personal creativity" requires a clear structure that explains how creativity emerges, how it can be strengthened, and what psychological levers are most effective in educational settings. The aim of this article is to systematize key psychological mechanisms underlying the development of personal creativity among late adolescents and to propose a coherent model that highlights self-regulation and intrinsic motivation as bridging mechanisms between creative potential and creative performance.

Conceptual clarification: what is personal creativity? Personal creativity in educational psychology can be understood as an individual's capacity to generate ideas that are both novel and appropriate for a given context, and to transform these ideas into meaningful actions, solutions, or products. This definition implies three essential elements: novelty (originality), usefulness (appropriateness), and implementation (behavioral realization). Therefore, creativity is not only "thinking differently," but also "acting creatively," which requires motivational energy, emotional readiness, and regulation of effort over time.

Theoretical background: major perspectives in creativity research. Creativity research offers several complementary viewpoints that help describe mechanisms of development. Cognitive perspectives emphasize divergent thinking, problem representation, and domain knowledge; motivational perspectives highlight intrinsic motivation and the role of interest and autonomy; social-psychological perspectives focus on climate, evaluation, and social support; and personality-based perspectives point to openness, tolerance for ambiguity, and persistence. By late adolescence, according to J. Piaget's theory, formal operational thinking is generally already established rather than emerging; what characterizes this later stage is the consolidation and flexible application of abstract, hypothetical-deductive reasoning to increasingly complex and self-relevant problems, including questions of personal and professional identity (E. Erikson's identity-formation stage, which is itself often used to define the boundaries of late adolescence). This combination of consolidated abstract thinking and active identity work provides a distinctive cognitive-motivational basis for creative reasoning at this stage, compared with early adolescence. In real educational settings, these components do not operate in isolation: creativity develops through the interaction among cognition, motivation, emotion, and context.

A mechanism-based model of creativity development: To make the theme operational for senior secondary school education, creativity can be described through a set of mechanisms arranged from "input" to "output." (1) Cognitive foundations provide mental resources for idea generation; (2) motivational mechanisms supply energy and direction; (3) emotional mechanisms modulate flexibility, risk taking, and resilience; (4) self-regulatory mechanisms coordinate goals, strategies, monitoring, and reflection; and (5) socio-contextual mechanisms shape the environment in which creative behavior becomes safe, meaningful, and valued. In this article, special emphasis is placed on self-regulation and intrinsic motivation because they often determine whether a late adolescent's creative potential becomes a real creative result.

Cognitive mechanisms: divergent thinking and domain knowledge. Divergent thinking is typically associated with the generation of multiple ideas, alternative solutions, and non-standard associations. In educational practice, divergent thinking can be stimulated through open-ended questions, tasks with multiple correct answers, and activities requiring analogy, transformation, and recombination of concepts. However, divergent thinking alone is not sufficient: creativity also depends on domain knowledge and conceptual understanding. Without a knowledge base, originality may become superficial; with knowledge but no flexibility, thinking may become rigid. Therefore, creativity development requires a balance: late adolescents need both conceptual mastery and opportunities to reorganize knowledge in new ways.

Motivational mechanisms: intrinsic motivation as a driver of creative engagement. Intrinsic motivation refers to engaging in an activity because it is interesting, enjoyable, or personally meaningful, rather than for external rewards or pressure. In the context of creativity, intrinsic motivation supports exploration, persistence, and willingness to try unconventional approaches. When late adolescents perceive autonomy (choice and self-direction), competence (a sense of growth), and relatedness (supportive relationships), they are more likely to engage deeply in tasks and maintain creative effort. In late adolescence, autonomy needs are typically stronger and more consciously articulated than in early adolescence, often connected to future academic and career planning; when educational settings fail to offer genuine choice, intrinsic motivation for creative work tends to decline sharply at this stage. In contrast, heavy control, fear of evaluation, and purely grade-driven performance often reduce creativity by narrowing attention and encouraging safe, conventional responses.

Self-efficacy and creative identity: believing "I can" and "I am." Self-efficacy is a person's belief in their capacity to perform actions needed to reach a goal. In creativity development, a specific form—creative self-efficacy—matters: if late adolescents believe they can produce creative outcomes, they are more likely to attempt difficult tasks and persist after setbacks. Over time, repeated experiences of creative success and constructive feedback form a creative identity: the late adolescent begins to see creativity as part of their self-concept. This identity functions as a psychological mechanism because it influences choices, effort allocation, and reactions to criticism. If a student's identity is "I am not creative," they avoid creative tasks; if it is "I am learning to be creative," they approach challenges as growth opportunities. In late adolescence, this identity work is closely tied to broader personal and future professional identity formation, so creative self-efficacy at this stage can meaningfully influence future field-of-study and career choices.

Emotional mechanisms: affect, risk tolerance, and resilience. Emotional states influence cognitive flexibility and willingness to explore. Positive affect often broadens attention and supports associative thinking, while chronic anxiety and fear of mistakes can narrow thinking and push late adolescents toward conventional solutions. Importantly, creativity requires risk: expressing an original idea always carries uncertainty. For late adolescents, this risk is often intensified by the pressure of upcoming examinations, university admission requirements, and comparison with peers preparing for similar academic or professional pathways. Therefore, emotional mechanisms of creativity development include tolerance for ambiguity, acceptance of imperfection during early drafts, and resilience after negative feedback. In educational settings, this means that psychological safety—permission to make mistakes and revise—becomes a practical condition for emotional readiness to create.

Self-regulation as the bridge from potential to performance. Self-regulation is a central mechanism that turns creative intentions into structured activity. In senior-level schooling, creativity often fails not because late adolescents lack ideas, but because they lack regulation skills: planning, time management, strategy selection, and reflective revision. A self-regulatory cycle can be described in three phases: (1) forethought (goal setting and strategic planning), (2) performance (monitoring and controlling attention and effort), and (3) self-reflection (evaluating results, learning from feedback, and adjusting strategies). When applied to creative tasks, self-regulation helps late adolescents manage uncertainty: they can break complex

creative assignments into smaller steps, experiment with alternatives, monitor progress, and revise products iteratively. This mechanism is particularly relevant for independent school projects, research papers, and portfolio-based assignments typical of senior-level schooling, where external structure is limited and the student must organize the process internally.

Interaction between intrinsic motivation and self-regulation. Intrinsic motivation and self-regulation mutually reinforce each other. When late adolescents are intrinsically motivated, they are more willing to invest time in planning and revision, making self-regulation easier. Conversely, self-regulation supports intrinsic motivation because successful progress increases feelings of competence and keeps tasks meaningful rather than chaotic. In practical terms, creativity development in senior secondary school education can be optimized by designing tasks that are autonomy-supportive (to activate intrinsic motivation) and process-structured (to scaffold self-regulation).

Socio-contextual mechanisms: climate, feedback, and evaluation. Even highly motivated and capable late adolescents may suppress creativity if the environment punishes originality or creates fear of negative judgment. A creativity-supportive learning climate includes respectful dialogue, recognition of multiple viewpoints, and evaluation criteria that value originality along with clarity and usefulness. Feedback is a powerful mechanism: when feedback is specific, process-focused, and oriented toward improvement, it supports creative growth; when feedback is vague, purely judgmental, or humiliating, it blocks exploration. At this stage, students are also more capable of engaging with detailed, criteria-based feedback than younger adolescents, which makes structured, developmentally-oriented feedback especially valuable. Teachers can model constructive critique by emphasizing drafts, iterations, and learning from errors.

Educational implications: how to develop creativity in late adolescents. Several practice-oriented recommendations follow from the mechanism-based model. First, use open-ended tasks that require synthesis, comparison, redesign, and creation of alternatives rather than simple reproduction. Second, build autonomy into assignments by allowing topic choice, format flexibility, or multiple solution paths, ideally connected to late adolescents' emerging academic or career interests. Third, explicitly teach self-regulation: show late adolescents how to set creative goals, plan stages, keep idea logs, and conduct reflection after completing tasks. Fourth, support creative self-efficacy through progressive difficulty: start with manageable creative challenges and gradually increase complexity, ensuring that students experience mastery. Fifth, create psychological safety by normalizing revisions and treating mistakes as part of creative learning. Finally, align evaluation with creativity: include criteria such as originality, relevance, reasoning, and improvement across drafts.

A proposed integrated framework for research and practice. Based on the synthesis above, personal creativity development in late adolescents can be described as an integrated system: cognitive resources (divergent thinking + knowledge) generate possibilities; intrinsic motivation supplies energy and curiosity; self-efficacy and creative identity stabilize engagement; emotional readiness enables risk taking and resilience; self-regulation organizes the process over time; and supportive context provides psychological safety and meaningful feedback. This framework can serve as a conceptual basis for empirical research (e.g., studying relationships between self-regulation and creative outcomes in late adolescence) and for designing educational interventions (e.g., creativity workshops embedded in senior secondary school coursework).

Conclusion: Personal creativity is a developable psychological phenomenon that emerges through the interaction of multiple mechanisms. For late adolescents, creativity development is strengthened when intrinsic motivation and self-regulation are deliberately supported. Intrinsic motivation encourages exploration and persistence, while self-regulation transforms creative potential into disciplined creative action through planning, monitoring, and reflection. Because late adolescence combines consolidated abstract thinking with active personal and future professional identity formation, it represents a particularly consequential window for cultivating a stable creative identity that can directly shape subsequent choices of field of study, profession, and career trajectory. Educational environments that provide autonomy support, constructive feedback, and psychological safety can activate these mechanisms and foster sustainable creative identity. Therefore, creativity development should be treated not as an occasional activity, but as a systematic psychological and pedagogical process integrated into senior secondary school education practice.

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