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Research Article

Exploring Artistic Expression in Student Visual Works Among Different Specialties: A Comparative Study with Educational Insights

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Abstract

This study investigates artistic creativity in university students across six academic specialties – Fine Arts, Technical/Analytical, Pedagogy, Humanities, Psychology, and Physical Culture – using a seven-dimensional framework: Stylistic Coherence, Symbolic Saturation, Narrative Integration, Emotional Expressiveness, Authorial Presence, Aesthetic Orientation, and Aesthetic Intentionality. A total of 147 students (ages 17–24, 78% female) completed a creative task, and their works were analyzed via MANOVA and post-hoc comparisons. Results indicate that Fine Arts and Technical/Analytical students exhibit the most pronounced creative profiles, particularly in expressive, symbolic, and intentional dimensions, while other groups display moderate but balanced creativity. The findings demonstrate that specialization systematically shapes creative expression and reflects distinct perceptive – cognitive strategies underlying artistic production. Creativity, therefore, appears not only as an individual disposition but as a context-dependent process influenced by domain-specific training. These results support the use of differentiated pedagogical approaches that combine general cognitive development with orientation-specific artistic practice. The study confirms the multidimensional nature of creativity and its educational malleability. Limitations include unequal group sizes, a single-institution sample, and a cross-sectional design. Future research should incorporate longitudinal approaches and additional psychological and socio-cultural variables to better understand the developmental trajectories and practical outcomes of creative profiles.

Keywords: artistic creativity; higher education; student visual works; creative dimensions; specialization differences

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Creativity has been recognized as an important competency in contemporary education. It supports critical thinking, problem solving, and adaptability across disciplines. The creative process has been shaped by both individual dispositions and contextual factors. However, academic cultures have emphasized different modes of thinking, which has influenced students' creative products. In Fine Arts programs, aesthetic mastery and expressive skills have been prioritized. In technical and analytical disciplines, structural problem solving and functional innovation have been emphasized. Therefore, pedagogical models are required that integrate domain-specific expertise with broader creative capacities.

Creativity has increasingly been recognized as a core component of 21st-century skills. However, educational practices have remained fragmented and cross-disciplinary exchange has been limited. In the present study, creativity is examined using a multidimensional framework that includes perceptual – cognitive strategies and theoretically grounded dimensions of artistic expression. These dimensions are compared across academic specialties. The study aims to identify discipline-specific creative profiles and to provide guidance for targeted educational interventions supporting both structural and expressive aspects of student creativity.

Research on creativity in education has shifted from narrow skill-based definitions to multidimensional models, recognizing creativity as a combination of cognitive, personality, sociocultural, and neurobiological factors (Beaty et al., 2015; Csikszentmihalyi, 1999; Feist, 1998; Glaveanu, 2014; Guilford, 1967; Runco & Acar, 2012; Silvia et al., 2009). Within educational settings, creativity is increasingly conceptualized as a set of domain-specific skills and dispositions that require differentiated assessment and pedagogical support (Beghetto & Kaufman, 2013; Kaufman & Baer, 2005; Lucas, 2016).

The development of these creative competencies is heavily influenced by the pedagogical context. While traditional arts education has sometimes prioritized technical or aesthetic mastery over broader creative experimentation (Clarke et al., 2018; Eisner, 2002), contemporary approaches emphasize interdisciplinary and project-based learning. Frameworks such as STEAM integration (Sanchez Milara & Cortés Orduña, 2024) and sustainable active learning environments (Samsudin et al., 2025) have been shown to foster critical thinking and innovative problem-solving across diverse disciplines (Bakhshi & Windsor, 2015; Chang et al., 2022; King, 2024). Furthermore, the recent integration of generative artificial intelligence tools highlights how students' disciplinary backgrounds actively shape their engagement with and synthesis of creative tasks (Qu et al., 2024).

In summary, previous research indicates that educational creativity is a context-dependent construct requiring flexible, interdisciplinary pedagogical frameworks. However, further research is needed to clarify how specific forms of creativity – such as artistic expression – manifest across varied academic domains. Building on these findings, the current study investigates the multidimensional nature of artistic creativity and its specific manifestation across different educational contexts.

Based on this theoretical foundation, the following section presents the conceptual framework guiding the study. Artistic creativity is defined as a multidimensional construct that includes

symbolic, emotional, narrative, stylistic, and authorial aspects. These aspects are organized into seven interrelated interpretive clusters derived from cognitive, personality-motivational, sociocultural, neuroscientific, and semiotic perspectives. The clusters serve as theoretically grounded constructs rooted in art theory, creativity psychology, and semiotic analysis, offering a structured approach for examining creative works while accounting for context, meaning, and expressive intent.

Stylistic Coherence

This dimension is grounded in art historical theory (Gombrich, 1960) and Gestalt psychology (Arnheim, 1974). It refers to the integration of visual elements – form, color, texture, and composition – into a unified style. Stylistic coherence requires consistency across both local details and overall composition, indicating deliberate rather than random decisions. As a result, the work appears harmonious and complete, and the viewer perceives it as an intentional and unified whole.

Symbolic Saturation

This dimension is based on semiotic theory (Eco, 1976) and archetypal analysis (Jung, 1964). It describes the use of symbolism as a central organizing principle of the artwork. Symbols are layered and interconnected, allowing multiple interpretations. Symbolic saturation indicates developed artistic intentionality, as each element contributes to meaning and supports conceptual depth (Vygotsky, 1971).

Narrative Integration

This dimension draws on narrative psychology (Bruner, 1990) and visual storytelling research (McCloud, 1993). It refers to the presence of narrative as the main organizing principle of the composition. Visual elements support the development of a storyline and thematic structure. Narrative integration enables the artwork to present a coherent and internally consistent story that engages the viewer in interpretation and meaning-making.

Emotional Expressiveness

This dimension is grounded in affective psychology (Izard, 1972) and aesthetic emotion theory (Leder et al., 2004). It refers to the deliberate communication of emotional states through visual elements. Color, gesture, texture, and composition are used to evoke complex or layered

emotions. Emotional resonance functions as a central component of the artwork's communicative effect and enhances viewer engagement.

Authorial Presence

This dimension draws on hermeneutic theory (Hirsch, 1967) and discussions of authorship (Barthes, 1967). It describes the degree to which the work reflects the creator's personal vision and stylistic identity. Compositional, technical, and thematic decisions indicate deliberate choice. The viewer perceives not only the artwork but also the individual perspective shaping it.

Aesthetic Orientation

This dimension is based on aesthetic philosophy (Dewey, 1934; Shusterman, 2000) and empirical aesthetics. It refers to the intentional development of aesthetic qualities in the work. Color, form, spatial organization, and material features are integrated into a coherent visual structure. The artwork demonstrates attention to balance, harmony, and perceptual impact.

Aesthetic Intentionality

This dimension builds on pragmatist aesthetics (Dewey, 1934) and philosophical theories of art (Gaut, 2010). It reflects the degree to which artistic decisions are consciously directed toward a clear idea or message. The artwork is designed to communicate a specific meaning or aesthetic experience. Form and content function together within a purposeful expressive structure.

Together, these dimensions constitute an integrated framework for examining artistic creativity in educational contexts. Each dimension is grounded in established theoretical traditions, allowing systematic analysis of visual works. This approach connects interpretive art analysis with empirical assessment and supports a structured examination of creative expression.

Research objectives

1. Together, these clusters constitute an integrated framework for examining artistic creativity in educational contexts. Each dimension is grounded in established theoretical traditions, allowing systematic analysis of visual works. This approach connects interpretive art analysis with empirical assessment and supports a structured examination of creative expression.
2. To identify patterns in creativity profiles associated with each specialization and to determine which dimensions are most sensitive to disciplinary differences.

3. To provide educational insights for fostering creativity across different fields of study.

Method

Participants

One hundred seventy students enrolled in academic programs at a university in Kyiv, Ukraine, were invited to participate. The programs included Physical Education (*n* = 27), Philosophy (*n* = 5), Finance and Credit (*n* = 13), English Language and Literature (*n* = 8), Physical Therapy (*n* = 1), Preschool Education (*n* = 47), Primary Education (*n* = 1), Fine Arts and Restoration (*n* = 21), Information and Analytical Systems (*n* = 13), Mathematical Modeling (*n* = 9), and Psychology (*n* = 25).

Of these, 147 students (86.5%) completed the creative task and submitted their artworks for analysis. Participants were aged 17–24 years (*M* = 19.51, *SD* = 1.91). The sample consisted of 78% females and 22% males.

For statistical analysis, participants were grouped into six educational categories: Fine Arts (*n* = 19), Psychology (*n* = 20), Pedagogy (*n* = 41), Humanities (*n* = 9), Technical and Analytical (*n* = 33), and Physical Culture (*n* = 25). This grouping allowed comparison of creative indicators across disciplines.

Instruments

Data were obtained through a structured creative assignment titled “For the Development of Creative Thinking”, implemented within a semester psychology course. Students produced individual visual artworks during regular coursework.

All works were independently evaluated by two trained raters with backgrounds in art and creativity assessment. To establish the consistency of the scoring process, inter-rater reliability was calculated using the Intraclass Correlation Coefficient (ICC). The resulting ICC estimates ranged between .76 and .88, demonstrating good to excellent agreement based on standard evaluation guidelines (Cicchetti, 1994). Each artwork was rated on seven dimensions: Stylistic Coherence (ICC = .81), Symbolic Saturation (ICC = .88), Narrative Integration (ICC = .76), Emotional Expressiveness (ICC = .78), Authorial Presence (ICC = .79), Aesthetic Orientation (ICC = .82), and Aesthetic Intentionality (ICC = .82).

Each dimension was scored on a 5-point ordinal scale (0–4), where higher scores indicated greater manifestation of the respective feature. Ratings were based on predefined operational criteria describing the absence, minimal presence, partial presence, clear presence, and fully integrated presence of the feature.

Inter-rater scores were averaged to produce a composite value for each dimension. These composite scores served as input variables for subsequent cluster analysis to identify patterns of creative profiles.

Participation was voluntary. Students provided informed consent for anonymous use of their artworks in accordance with institutional ethical standards.

The detailed scoring rubric is provided in the Appendix.

Procedure

Each student received two standardized dot configurations: one with three dots and one with five dots. Participants were instructed to create visual compositions using the dots as fixed reference points. They were also asked to design an original dot configuration and produce a corresponding composition.

The task was completed individually under supervised classroom conditions to ensure uniform administration. No time limit was imposed. Participants were allowed to use any drawing materials of their choice.

All participants provided informed consent for the anonymous use of their works in accordance with institutional ethical standards.

Data Analysis

Data were analyzed across seven dimensions: Stylistic Coherence (SC), Symbolic Saturation (SS), Narrative Integration (NI), Emotional Expressiveness (EE), Authorial Presence (AP), Aesthetic Orientation (AO), and Aesthetic Intentionality (AI).

Descriptive statistics (means, standard deviations, skewness, and kurtosis) were computed to examine distributional properties and test assumptions of normality and homogeneity of variance.

A one-way multivariate analysis of variance (MANOVA) was conducted with educational specialization as the independent variable and the seven dimensions as dependent variables.

Significant multivariate effects were followed by univariate ANOVAs. Post-hoc comparisons were performed using Bonferroni adjustment.

All analyses were performed in SPSS 27. Statistical significance was set at $p < .05$. Effect sizes were reported as partial η^2.

Results

Descriptive statistics for the seven creative dimensions across the full sample of 147 student works are presented in Table 1.

Table 1.
Descriptive Statistics for Seven Creative Dimensions Across the Whole Sample (n = 147)

Variable	M	SD	*Skewness*	*Kurtosis*
Stylistic coherence	2.98	0.70	-0.94	3.20
Symbolic saturation	1.81	1.20	0.18	-0.76
Narrative integration	1.61	0.94	0.42	-0.01
Emotional expressiveness	1.81	0.97	0.48	-0.45
Authorial presence	2.47	0.91	0.15	-0.76
Aesthetic orientation	2.58	0.54	-0.45	-0.82
Aesthetic intentionality	2.27	0.83	0.25	-0.09

Means and standard deviations for each dimension are reported in Table 1. Skewness and kurtosis values indicated approximately normal distributions across variables. Stylistic Coherence showed a slight negative skew and moderate leptokurtosis, whereas Symbolic Saturation, Narrative Integration, Emotional Expressiveness, Authorial Presence, Aesthetic Orientation, and Aesthetic Intentionality displayed near-symmetrical distributions.
Descriptive statistics by educational specialization are presented in Table 2.

Table 2.
Means and Standard Deviations of Creative Dimensions Across Six Educational Categories (n = 147)

Variable	Educational Categories											
	PhC (*n* = 25)		Hu (*n* = 9)		TA (*n* = 33)		Ped (*n* = 41)		FA (*n* = 19)		Ps (*n* = 20)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Stylistic coherence	3.08	0.64	2.56	1.51	3.33	0.60	2.66	0.53	2.89	0.32	3.25	0.64
Symbolic saturation	1.88	0.73	1.11	1.45	2.27	1.13	0.88	0.95	2.84	0.90	2.20	0.95

Narrative integration	1.60	0.58	1.44	1.24	1.91	0.84	1.22	0.94	2.37	0.83	1.25	0.91
Emotional expressiveness	1.60	0.65	1.22	1.09	2.09	1.01	1.46	0.74	2.74	0.73	1.70	1.17
Authorial presence	2.40	0.76	1.89	1.05	3.00	0.87	2.07	0.75	2.89	0.66	2.35	1.04
Aesthetic orientation	2.40	0.50	2.11	0.78	2.79	0.48	2.38	0.50	2.79	0.42	2.55	0.51
Aesthetic intentionality	2.28	0.46	1.89	0.93	2.76	0.71	1.76	0.73	2.58	0.77	2.40	0.99

Note: PhC – Physical Culture (n=25); Hu – Humanities (n = 9); TA – Technical and analytical (n = 33); Ped – Pedagogy (n = 41); FA – Fine Arts (n = 19); Ps – Psychology (n = 20)

Table 2 presents descriptive differences in creative dimensions across six fields of study. Fine Arts and Technical/Analytical students obtained higher scores in Stylistic Coherence and Aesthetic Orientation. Symbolic Saturation and Narrative Integration were highest among Fine Arts students, whereas Pedagogy and Humanities showed lower values on these dimensions. Emotional Expressiveness was highest in Fine Arts and moderate in Psychology and Humanities. Authorial Presence and Aesthetic Intentionality varied across specializations, with higher levels observed in Fine Arts and Technical/Analytical groups.

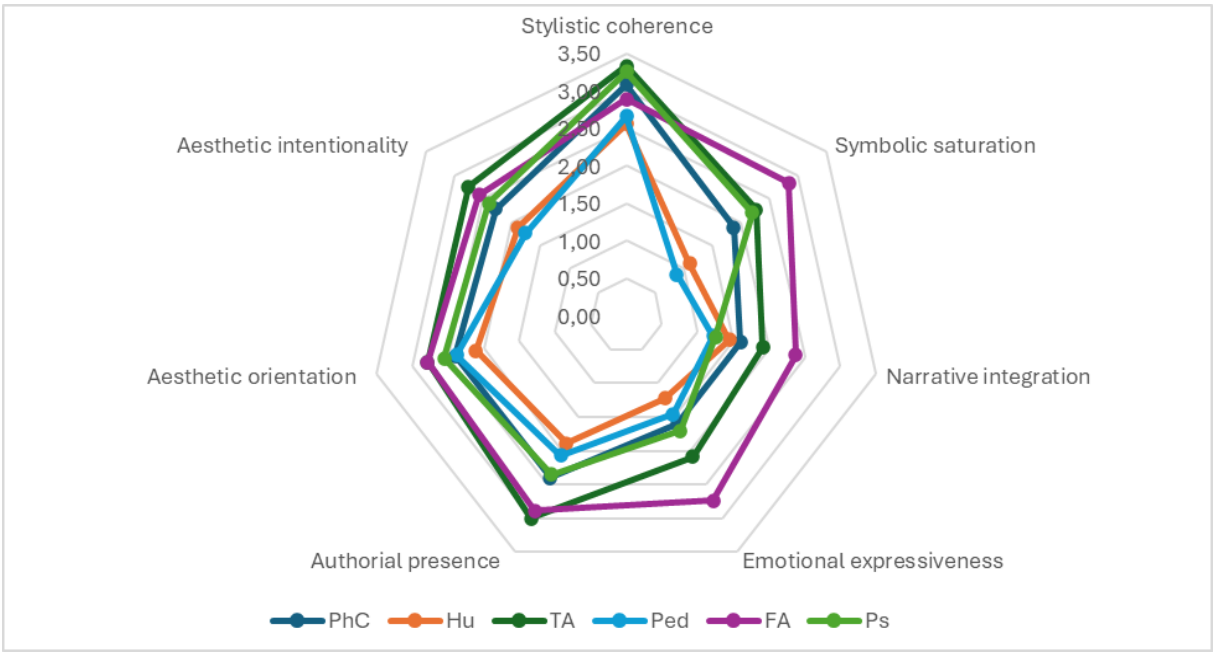

Figure 1. *Creative Profiles of Students by Specialization*

A Multivariate Analysis of Variance (MANOVA) was conducted to examine the effect of specialization on seven dimensions of creative expression: SC, SS, NI, EE, AP, AO, and AI. The overall effect of specialization was significant, Wilks' Λ = .497, F(35, 654.657) = 3.206, p <

.001, partial η^2 = .125, indicating that the set of creativity indicators systematically differed across groups. Between-subjects effects showed that all seven dimensions varied significantly across specializations (all ps < .01). The strongest effect was observed for SS, $F(5, 141) = 14.382$, $p < .001$, $R^2 = .338$, followed by AI, $F(5, 141) = 7.903$, $p < .001$, $R^2 = .219$, and EE, $F(5, 141) = 7.232$, $p < .001$, $R^2 = .204$. The weakest, though still significant effect, was for AO, $F(5, 141) = 3.951$, $p = .002$, $R^2 = .123$. These findings suggest that specialization consistently influences all measured dimensions of creativity, with some dimensions (particularly SS) being more sensitive to group differences.

Post-hoc Bonferroni comparisons identified specific between-group differences:

- SC: Ped and TA showed significantly higher SC than ED; TA also exceeded HU.
- SS: FA consistently scored higher than ED, PhC, PS, and TA; TA exceeded ED and PS.
- NI: FA and TA scored higher than ED and PhC; TA higher than Ped.
- EE: FA exceeded ED, Ped, and PhC; TA higher than ED.
- AP: FA and TA scored above ED and Ped.
- AO: TA exceeded HU and PhC; other differences were smaller.
- AI: FA and TA scored significantly higher than ED, Ped, and PhC; TA higher than PS.

These results highlight that FA and TA students demonstrate the most pronounced creative profiles, whereas PhC, Hu, Ped, and Ps exhibit moderate but consistent creativity across dimensions.

Profiles of Creativity by Specialization

1. PhC: Moderate creativity overall, with relatively lower SS and AI compared to FA and TA. Other dimensions (SC, NI, EE, AP, AO) are moderate, indicating a balanced but less pronounced profile.
2. Hu: Balanced and moderate across all dimensions, with slightly higher SS than PhC but lower than FA. No marked peaks, reflecting steady creative expression.
3. TA: High SC and AI, strong AP, and elevated SS. EE and NI are moderate. TA students display well-integrated creative skills, particularly in structural and intentional aspects.

4. Ped: Moderate levels across all dimensions, with SC, SS, and AI lower than FA and TA. Emotional and narrative dimensions are similar to those of other non-FA groups, reflecting balanced yet moderate creativity.
5. FA: Highest scores across SS, EE, AP, and AI, with elevated SC and NI. FA students demonstrate maximal symbolic and expressive capacities, indicating a highly pronounced creative profile.
6. Ps: Moderate-to-high SC and SS; other dimensions are moderate, with less pronounced EE and AI. Creativity is expressed mainly in structural and symbolic aspects.

The combined MANOVA and post-hoc analyses indicate that specialization significantly shapes creative profiles. FA students excel in expressive and symbolic dimensions, while TA students demonstrate strong structural, authorial, and intentional aspects. PhC, Hu, Ped, and Ps show moderate but stable creative profiles, with some variability across dimensions.

Discussion

The present study examines artistic creativity as a multidimensional construct expressed differently across academic contexts. The findings indicate that creative expression is not uniform but organized into distinguishable patterns that correspond to disciplinary orientations. This supports the view that creativity develops within domain-specific learning environments rather than as a single general ability.

The seven-dimension framework functions as an interpretive structure that captures both expressive and structural aspects of student artworks. Instead of isolating single creative traits, it allows the identification of integrated profiles that reflect how students organize meaning, emotion, and visual form. In this sense, artistic creativity appears as a coordinated system of perceptual, symbolic, and intentional processes.

Differences between specializations suggest that educational practices shape how creativity is expressed. Programs emphasizing visual production tend to support expressive and symbolic articulation, whereas analytically oriented programs appear to promote structured organization and purposeful design. Thus, creative outcomes reflect not only individual dispositions but also the cognitive strategies reinforced by training environments.

Overall, the study contributes to contemporary perspectives that treat creativity as context-dependent and structurally organized. The framework may therefore serve as a useful tool for

examining variation in creative expression and for informing pedagogical approaches aimed at developing both expressive and constructive dimensions of artistic thinking.

The comparison across academic specialties suggests that creative expression follows discipline-specific configurations rather than a uniform developmental pattern. Training environments oriented toward visual production appear to support symbolic articulation, emotional communication, and deliberate authorial positioning. In contrast, analytically oriented programs seem to encourage structured organization and purposeful design.

Students from other specializations demonstrate more evenly distributed characteristics without strong dominance of particular dimensions. This pattern may reflect broader but less specialized engagement with creative processes, where multiple components develop simultaneously but with lower intensity.

Taken together, these observations indicate that education shapes not only the degree of creativity but also its internal structure. The results therefore support a multidimensional perspective in which creativity manifests as qualitatively different profiles depending on disciplinary experience, rather than as a single linear scale of ability.

These findings carry both theoretical and practical implications. Theoretically, they support a multidimensional model of artistic creativity. Creativity does not operate as a single trait but appears through distinct symbolic, structural, expressive, and intentional components. Practically, the results inform educational practice. Different disciplines appear to foster different aspects of creativity. Targeted pedagogical strategies may therefore strengthen dimensions that receive less emphasis within a given field.

Understanding discipline-specific creative profiles can also guide curriculum design, interdisciplinary collaboration, and assessment practices. Such alignment may support a more balanced and effective development of student creativity. The observed patterns align with and extend previous research on creativity in educational contexts. Prior studies have shown that creativity depends on both cognitive and personality–motivational factors (Feist, 1998; Silvia et al., 2009; Runco & Acar, 2012). In the present study, students in disciplines emphasising symbolic and expressive activity, such as Fine Arts, obtained higher scores in symbolic saturation, emotional expressiveness, and authorial presence. This pattern reflects the importance of intrinsic motivation, openness to experience, and affective engagement in

creative production. Earlier research in artistic creativity has reported similar associations (Csikszentmihalyi, 1996; Lubart, 2001).

Similarly, the stronger structural and intentional features found in Technical/Analytical students are consistent with research linking creativity to cognitive organization, problem-solving, and goal-directed planning (Guilford, 1967; Cropley, 2006). In this study, these students showed higher Stylistic Coherence, Authorial Presence, and Aesthetic Intentionality. At the same time, their emotional expressiveness was comparatively lower, indicating that analytical training may develop structural aspects of creativity more strongly than affective ones.

Students in Humanities, Pedagogy, Physical Culture, and Psychology showed moderate and balanced creativity profiles. This pattern agrees with cross-disciplinary research showing that creativity varies across learning environments and training traditions (Kaufman & Beghetto, 2009; Beghetto, 2019; Hennessey & Amabile, 2010). Their works combined symbolic, structural, and expressive elements but rarely showed strong peaks in any single dimension. This suggests that programs focused on theory, interpersonal interaction, or general cognitive skills foster broader but less specialized forms of creative expression.

Overall, the findings confirm that creativity is multidimensional and sensitive to disciplinary context. The seven-dimensional framework integrates cognitive, personality-motivational, and sociocultural perspectives. Results show that both general mechanisms (e.g., intrinsic motivation and problem-solving) and domain-specific factors (e.g., symbolic training and disciplinary norms) shape creative profiles. This approach refines previous empirical conclusions and clarifies how creative expression develops across educational settings.

Educational Insights

Within the framework of perceptual–cognitive strategies of creative construction across human activity (Moliako et al., 2018), a strategy is defined as a general program of actions that guides search and elaboration processes. It organizes and regulates other forms of activity.

This approach identifies five basic strategies of creative activity: analogizing, combining, reconstructing, universal processing, and spontaneous (“accidental”) substitution. Each strategy performs several functions. It prepares the individual for creative activity, structures incoming information, orients thinking toward future outcomes, supports evaluation of action timing, builds goal hierarchies, and directs problem solving.

Examining creative strategies within artistic production therefore provides a practical basis for targeted development of students' creativity across academic fields.

A strategy is defined as a general program of action that organizes and coordinates creative activity. Its main functions include structuring information flow, orienting the individual toward future outcomes, evaluating the timeliness of actions, forming goal hierarchies, guiding information search and interpretation, and maintaining consistency in problem solving (Moliako et al., 2018). Thus, a strategy has a system-forming role and determines the coherence of the creative process.

A perceptual–cognitive strategy represents a personality characteristic that directs the individual toward achieving harmony with the surrounding environment during creative activity. In artistic practice, it integrates creative abilities, guides interpretation, directs decision making, resolves contradictions between prior experience and new situational demands, and orients activity toward anticipated outcomes. In this sense, the perceptual–cognitive strategy functions as an integrative factor of artistic creativity.

- Analogizing (SC, SS): the artist reproduces recognizable forms, conveys movement and volume, and selects themes and means aimed at emotional impact on the viewer.
- Combining (NI, EE): the artist integrates compositional elements, harmonizes color and space, and ensures semantic unity of the artwork.
- Reconstructing (AP, AO): the artist generates novel associations, synthesizes opposites, and builds harmony through contrast and unexpected color relations.
- Artist's personality expression (AI, EE): the work communicates an individual style, conveys personal meanings and emotions, and engages the viewer in the author's perspective.

Based on the conducted analysis, it is possible to highlight the strengths and weaknesses of the creative profiles of students from different specializations:

- FA: high levels of EE, SS, AP, AI – recommended development of integration across all strategies through interdisciplinary projects.
- TA: high levels of SC, AI, AP – advisable to foster EE and NI through visualization exercises, presentations, and storytelling practices.

- PhC, Hu, Ped, Ps: moderate indicators overall – development of SS, AI, EE, and AP can be stimulated through individual and group creative exercises.

In summary, the strategic approach to perceptual–cognitive processes in artistic activity offers a comprehensive framework for understanding and enhancing creativity in students of diverse academic backgrounds.

Conclusions

The analysis showed that, within the present sample, students' creative profiles varied systematically across specializations. Fine Arts and Technical–Analytical groups demonstrated the strongest symbolic, expressive, and intentional dimensions. Other specializations showed balanced but moderate creative performance, suggesting the relevance of differentiated pedagogical strategies.

Linking perceptual–cognitive strategies with dominant artistic orientations supports the perspective that creativity can be treated not only as an individual trait but also as a structured and developable process supported by targeted educational interventions.

Overall, the findings lend support to the notion that creativity in artistic education is multidimensional and context-dependent. While acknowledging the limitations of the current sample, effective cultivation appears to require flexible teaching approaches that address both universal cognitive mechanisms and domain-specific artistic orientations. Such approaches can foster the development of artistic thinking, emotional expressiveness, and authorial intentionality, helping to prepare students for engagement in contemporary cultural and professional environments.

Limitations and Future Directions

The study had several limitations. Group sizes were uneven. The sample was drawn from a single institution. The design was cross-sectional. Only seven creativity dimensions were assessed, and evaluation partly relied on expert interpretation of artworks.

Future research should include larger and more diverse samples and employ longitudinal designs. Additional cognitive, personality, and sociocultural variables should be incorporated. Expanding assessment methods and examining links between creative profiles and educational or professional outcomes may further inform theory and practice.

Compliance with Ethical Standards

Participation was voluntary. All students provided informed consent in accordance with the Ethics Committee of H. S. Kostiuk Institute of Psychology, National Academy of Educational Sciences of Ukraine. Study procedures were coordinated through institutional administration and teaching staff.

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Competing Interests

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References

Arnheim, R. (1974). *Art and visual perception: A psychology of the creative eye* (New version). University of California Press.

Bakhshi, H., & Windsor, G. (2015). *The creative economy and the future of employment.* Nesta. https://www.nesta.org.uk/report/the-creative-economy-and-the-future-of-employment/

Barthes, R. (1967). The death of the author. *Aspen, 5–6*.

Beaty, R. E., Benedek, M., Kaufman, S. B., & Silvia, P. J. (2015). Default and executive network coupling supports creative idea production. *Scientific Reports, 6*, 10964. https://doi.org/10.1038/srep10964

Beghetto, R. A. (2019). Creativity in classrooms. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (2nd ed., pp. 587–606). Cambridge University Press. https://doi.org/10.1017/9781316979839.029

Beghetto, R. A., & Kaufman, J. C. (2013). *Nurturing creativity in the classroom*. Cambridge University Press.

Bruner, J. (1990). *Acts of meaning*. Harvard University Press.

Chang, T.-S., Wang, H.-C., Haynes, A. M., Song, M.-M., Lai, S.-Y., & Hsieh, S.-H. (2022). Enhancing student creativity through an interdisciplinary, project-oriented problem-based learning undergraduate curriculum. *Thinking Skills and Creativity, 46*, 101173. https://doi.org/10.1016/j.tsc.2022.101173

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment, 6*(4), 284–290. https://doi.org/10.1037/1040-3590.6.4.284

Clarke, A., Hulbert, S., & Summers, F. (2018). Towards a fair, rigorous and transparent fine art curriculum and assessment framework. *Arts, 7*(4), 81. https://doi.org/10.3390/arts7040081

Cropley, A. J. (2006). In praise of convergent thinking. *Creativity Research Journal, 18*(3), 391–404. https://doi.org/10.1207/s15326934crj1803_13

Csikszentmihalyi, M. (1996). *Creativity: Flow and the psychology of discovery and invention*. Harper Collins.

Csikszentmihalyi, M. (1999). Implications of a systems perspective for the study of creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 313–335). Cambridge University Press.

Dewey, J. (1934). *Art as experience*. Minton, Balch & Company.

Eco, U. (1976). *A theory of semiotics*. Indiana University Press.

Eisner, E. W. (2002). *The arts and the creation of mind*. Yale University Press. http://www.jstor.org/stable/j.ctt1np7vz

Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review, 2*(4), 290–309. https://doi.org/10.1207/s15327957pspr0204_5

Gaut, B. (2010). *A philosophy of cinematic art*. Cambridge University Press.

Glaveanu, V. P. (2014). *Distributed creativity: Thinking outside the box of the creative individual*. Springer. https://doi.org/10.1007/978-3-319-05434-6

Gombrich, E. H. (1960). *Art and illusion: A study in the psychology of pictorial representation*. Princeton University Press.

Guilford, J. P. (1967). *The nature of human intelligence*. McGraw-Hill.

Hennessey, B. A., & Amabile, T. M. (2010). Creativity. *Annual Review of Psychology, 61*, 569–598. https://doi.org/10.1146/annurev.psych.093008.100416

Hirsch, E. D. (1967). *Validity in interpretation*. Yale University Press.

Izard, C. E. (1972). *Patterns of emotions: A new analysis of anxiety and depression*. Academic Press.

Jung, C. G. (1964). *Man and his symbols*. Doubleday.

Kaufman, J. C., & Baer, J. (Eds.). (2005). *Creativity across domains: Faces of the muse*. Lawrence Erlbaum Associates Publishers. https://doi.org/10.4324/9781410611925

Kaufman, J. C., & Beghetto, R. A. (2009). Beyond big and little: The four C model of creativity. *Review of General Psychology, 13*(1), 1–12. https://doi.org/10.1037/a0013688

King, C. R. P. (2024). How the fine arts create the finest students: A design thinking study. *Higher Education Quarterly, 78*(3), 1162–1174. https://doi.org/10.1111/hequ.12521

Leder, H., Belke, B., Oeberst, A., & Augustin, D. (2004). A model of aesthetic appreciation and aesthetic judgments. *British Journal of Psychology, 95*(4), 489–508. https://doi.org/10.1348/0007126042369811

Lubart, T. I. (2001). Models of the creative process: Past, present and future. *Creativity Research Journal, 13*(3–4), 295–308. https://doi.org/10.1207/S15326934CRJ1334_07

Lucas, B. (2016). A five-dimensional model of creativity and its assessment in schools. *Applied Measurement in Education, 29*(4), 278–290. https://doi.org/10.1080/08957347.2016.1209206

McCloud, S. (1993). *Understanding comics: The invisible art*. William Morrow Paperbacks.

Moliako, V. O., Hulko, Y. A., Vahanova, N. A., Latysh, N. M., Medvedeva, N. V., Tretiak, T. M., Shepelova, M. V., Moskalenko, V. V. & Borovytska, O. M. (2018). *Pertseptyvno-myslenniievi stratehii tvorchoho konstruiuvannia informatsiinykh system u navchalnii ta trudovii diialnosti* [Perceptual-cognitive strategies of creative design of information

systems in educational and professional activities] (V. O. Moliako, Ed.). http://lib.iitta.gov.ua/712092/

Qu, Y., Tan, M. X. Y., & Wang, J. (2024). Disciplinary differences in undergraduate students' engagement with generative artificial intelligence. *Smart Learning Environments, 11*(1), Article 51. https://doi.org/10.1186/s40561-024-00341-6

Runco, M. A., & Acar, S. (2012). Divergent thinking as an indicator of creative potential. *Creativity Research Journal, 24*(1), 66–75. https://doi.org/10.1080/10400419.2012.652929

Samsudin, M. R., Sulaiman, R., Ahmad Tarmizi, M. S. H., Zahari, S. S., Roslan, N. F., & Alias, S. (2025). Innovative pedagogical frameworks for creative arts: A critical review of cross-disciplinary methods. *International Journal of Research and Innovation in Social Science, 9*(1), 141–148. https://dx.doi.org/10.47772/IJRISS.2025.9010015

Sanchez Milara, I., & Cortés Orduña, M. (2024). *Possibilities and challenges of STEAM pedagogies*. arXiv. https://doi.org/10.48550/arXiv.2408.15282

Shusterman, R. (2000). *Pragmatist aesthetics: Living beauty, rethinking art* (2nd ed.). Rowman & Littlefield.

Silvia, P. J., Nusbaum, E. C., Berg, C., Martin, C., & O'Connor, A. (2009). Openness to experience, plasticity, and creativity: Exploring lower-order, high-order, and interactive effects. *Journal of Research in Personality, 43*(6), 1087–1090. https://doi.org/10.1016/j.jrp.2009.04.015

Vygotsky, L. S. (1971). *The psychology of art*. MIT Press.

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Appendix

Scoring rubric for evaluation of student artworks

Each artwork was independently rated on seven dimensions using a 5-point ordinal scale (0–4). Scores represent the degree to which the feature is present and integrated in the composition.

1. Stylistic Coherence

Consistency of visual style across elements (form, color, line, composition).

Score	Operational description
0	No consistent visual style; elements unrelated
1	Single stylistic element present but inconsistent
2	Repeated stylistic features in parts of the work
3	Mostly consistent visual logic across composition
4	Fully integrated and consistently maintained style

2. Symbolic Saturation

Presence and integration of symbolic or metaphorical elements.

Score	Operational description
0	No symbolic content
1	Isolated symbolic elements
2	Recognizable symbols partially integrated
3	Symbols support overall meaning
4	Symbolism functions as organizing principle

3. Narrative Integration

Degree to which elements form a coherent story or thematic sequence.

Score	Operational description
0	No narrative relations
1	Suggestion of narrative
2	Basic storyline identifiable
3	Clear narrative organization
4	Fully structured and coherent narrative

4. Emotional Expressiveness

Clarity and complexity of conveyed emotional content.

Score	Operational description
0	No emotional cues
1	Weak emotional indicators
2	Basic identifiable emotion
3	Clear emotional communication

Score	Operational description
4	Complex and integrated emotional expression

5. Authorial Presence

Evidence of individual stylistic identity.

Score	Operational description
0	Generic or impersonal
1	Minor individual traits
2	Recognizable personal features
3	Clear personal style
4	Distinct and consistent artistic identity

6. Aesthetic Orientation

Application of aesthetic organization principles.

Score	Operational description
0	No aesthetic organization
1	Basic aesthetic elements
2	Partially organized composition
3	Consistent aesthetic structure
4	Fully integrated aesthetic organization

7. Aesthetic Intentionality

Degree to which visual decisions reflect a deliberate conceptual purpose.

Score	Operational description
0	No apparent intent
1	Weak or inconsistent intent
2	Recognizable conceptual idea
3	Clear and consistent purpose
4	Fully realized conceptual intention