

Developing Creative Abilities in Preschoolers in Painting Classes via the Principles of Neuropedagogy and Psychology of Creativity in Ukraine

Liudmyla SHULHA¹,
Olena HNZIDILOVA²,
Marianna MATISHAK³,
Tamara MARCHII-DMYTRASH⁴,
Milena YAROSLAVTSEVA⁵,
Hanna CHORNA⁶

¹Municipal Institution «Zaporizhzhia Regional Institute of Postgraduate Pedagogical Education» Zaporizhzhia Regional Council, Zaporizhzhia, Ukraine, lnshulga@ukr.net

²Poltava V.G. Korolenko National Pedagogical University, Ukraine, Poltava, Gnizdilovae@gmail.com

³Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine, marianna.mathishak@pnu.edu.ua, ORCID - <https://orcid.org/0000-0001-9235-9835>

⁴Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine, tamara.dmytrash@ukr.net

⁵Municipal Establishment «Kharkiv Humanitarian-Pedagogical Academy» of Kharkiv Regional Council, Kharkiv, Ukraine, mylenaigorevna@gmail.com, <http://orcid.org/0000-0001-7465-0653>

⁶Zaporizhzhia National University, Zaporizhzhia, Ukraine, chorna.a.v@ukr.net

Abstract: The article explains the contradictions in the Ukrainian system for developing creative abilities in preschoolers. It theoretically analyzes neuropedagogical and methodical aspects of developing creative abilities in preschoolers in painting classes. Besides, the article shows how they enhance professional training of fine arts teachers in Ukraine. It also presents and justifies the author's set of competencies and recommendations for fine arts teachers working with preschoolers in the context of neuropedagogy and psychology of creativity. The article determines neuropedagogical and neuropsychological factors in the artistic creativity of preschoolers. It states that fine arts in preschool age act as a powerful tool for developing the child's personality, shaping the self-concept and subjective self-identity. The international relevance of the article lies in the need: a) to disclose both destructive and transitional trends in primary school education in Ukraine to enhance its effectiveness; b) to reform the traditional system-centred education in the post-Soviet countries towards a subject-centred one.

Keywords: *fine arts, neurosciences, psychology of creativity, technology of development, professionalism of the teacher, educational process, pedagogical technology.*

How to cite: Shulha, L., Hnizdilova, O., Matishak, M., Marchii-Dmytrash, T., Yaroslavtseva, M., & Chorna, H. (2021). Developing Creative Abilities in Preschoolers in Painting Classes via the Principles of Neuropedagogy and Psychology of Creativity in Ukraine. *Revista Romaneasca pentru Educatie Multidimensionala*, 13(4), 614-632. <https://doi.org/10.18662/rrem/13.4/501>

Introduction

The process of developing the creative abilities of preschool children in painting classes requires the identification and implementation of certain factors, which in our study are pedagogical competencies of teachers that will ensure the interest of preschoolers in fine arts and promote their activity in drawing. If earlier such competencies were developed proceeding only from pedagogy and psychology of creativity, now there is an opportunity to involve neurosciences in their optimization. The contradiction between the need to involve neurosciences and no attempts to do so in Ukrainian educational institutions reinforces the relevance of this article (Komogorova et al., 2021; Melnyk et al., 2021; Maksymchuk et al., 2020a; Maksymchuk et al., 2020b; Palamarchuk et al., 2020).

Recently, in the didactics of high school, neuroscience data are increasingly used, in particular, neurodiagnosis of psychological states, abilities and cognitive processes, taking into account the patterns of establishing new neural connections. Identification and consideration of individual neuropsychological and neurophysiological features allows to find the most individual approach, as it is possible to take into account perceptual-sensory, cognitive features, lateral profile of the student's brain, etc.

Analysis of the theoretical literature (including the history of pedagogy) allows us to conclude that neuropsychological data obtained by observation, intuitively or empirically, through repeated experience in the implementation of certain methods have been taken into account for a long time. This was especially true of the period of the naturalistic paradigm and the dominance of the medical approach to the formation of personality. However, the subject of special neuropedagogical research education has been only since the 70's of the twentieth century (Bengtsson, 2018). Direct scientific and practical interaction between pedagogical and neurosciences flourished in Western Europe only in the early 2000s, when common research methods and categorical and methodological apparatus were developed (Becker, 2014).

Despite this, the post-Soviet countries, including Ukraine, still ignore neurophysiological data when developing creative abilities in preschoolers. At the same time, they might consider age characteristics and phenomena related to them.

Thus, it is essential to consider some studies of Ukrainian and other post-Soviet educators on the development of children's creative abilities to identify existing contradictions and argue the relevance of the article.

As noted by Babansky (1989), pedagogical conditions are traditionally considered as certain factors influencing the effectiveness of the pedagogical system. In Soviet pedagogy, however, the student-centric factor was practically ignored. Sternberg, & Lubart (1995) believe that creative abilities may not manifest themselves without the support of the environment.

Ukrainian studies repeatedly emphasize the fact that a positive psychological climate in the classroom should promote the formation of children's respect for others, mercy, kindness, justice, tolerance, self-esteem, which serves as a basis for the formation of important values in their minds. The humanistic position of the teacher is aimed at understanding the needs of the child, the actualization of emotional and sensory and aesthetic and spiritual components of communication, which reveal the potential of the individual. Zaporozhets (1986), Palagina (1992) and other scholars note that a positive psychological climate is characterized by interaction based on mutual respect and partnership, when optimal conditions are created for social adaptation, vigorous activity and self-expression of each individual (Andrievska, 2005). An important point for our research is the opinion of Rogers (1994), who argued that the likelihood of manifestation of productive creativity increases in conditions of psychological security and freedom. Thus, creating a creative atmosphere in a painting class seems to depend on the teacher's ability to provide a positive socio-psychological climate.

In Soviet reference literature, the psychological climate is interpreted as the emotional and psychological mood of the team, which reflects the emotional level of personal and active relationships of team members, determined by their moral norms and interests (Golovin, 1998).

Vetlugina (1972), Pirozhenko (2012), Sukhorukova, Dronova, Holota, & Yantsur (2010) single out psychological-pedagogical and artistic-aesthetic competences as important components of a teacher's professionalism in the formation of a child's creative abilities. Importantly, they claim that the main characteristics of the psychological climate in painting classes should be called the positive mood of children and teachers; children's interest in the content of activities; mutual understanding; satisfaction with relationships and performance. This fact sporadically correlates with an integrative neuropedagogical approach. Kononko (2008) assumes that the main purpose of the teacher of preschool education is to

help preschoolers live on their own, in harmony with the environment and in harmony with themselves as an active subject of life (p. 8).

At the same time, such definitions do not consider biological factors in children's creative development. Being immanent, these factors also depend on the nervous system both in general conditions and within one's educational trajectory.

In this regard, **the objectives** of this article are as follows: to select and consider the latest comprehensive (pedagogical and neuropsychological) approaches to developing creative abilities in preschoolers children in painting classes; to analyze the ways of enhancing fine arts teachers' training in Ukraine; to form the theoretical basis for implementing technologies of integrated learning in this field based on neuropedagogy and psychology of creativity. To do this, one should determine relevant competencies and recommendations to develop the neurophysiological potential of children in painting classes.

As rightly noted by Sorochan (2004), the purpose of postgraduate education is not only to improve pedagogical techniques and master new technologies, but "to create conditions for teachers to achieve a high level of professionalism and acquire creative skills." Therefore, it was decided to study how they enhance professional training of fine arts teachers in some higher education institutions in Ukraine after a theoretical study on the development of creative abilities in preschoolers in painting classes via neuropedagogy and psychology of creativity.

The participants in the study were selected by local principle. The authors of the article decided on Vinnytsia Academy of Continuing Education (Ukraine) since they either work there or maintain scientific and methodological contacts. Thus, one can see that the selection criterion was sporadic, and therefore cannot provide symptomatic data for the whole country.

Research methods include pedagogical observation on the process of enhancing teacher competence, as well as comparison (comparing applied methods with those isolated from current scientific-methodical discourse).

Accordingly, data were collected during the observation or direct participation of the authors in the system of postgraduate pedagogical education (course period) in the Academy; during conferences, seminars, trainings, master classes, creative groups (intercourse period); in independent activity.

The authors themselves, as well as 27 practising teachers (who voluntarily agreed to participate in the study), participated in the pedagogical

observation, monitoring and evaluation of the professional development system for fine arts teachers.

The research hypothesis is that one can enhance the development of creative abilities in preschoolers in painting classes via neuropedagogy and psychology of creativity at the transitional stage of Ukrainian education (without abandoning the existing traditional educational system).

Arguing the Need to Consider Neuroscientific Data when Developing Creating Abilities in Preschoolers in Painting Classes

For a long time, the study of neuropsychological and neurophysiological mechanisms of creativity did not give clear results, and therefore the recommendations for neuropedagogy were based more on psychological observations and testing. However, over the past ten years, significant progress has been made in the psychometric and laboratory measurement of neurophysiology of creativity (Benedek, Christensen, Fink, & Beaty, 2019). This strengthened the links between neuroscience and the socio-humanitarian, as in both areas there was evidence of common mechanisms of the human psyche, and the reliability of neurophysiological parameters of creativity allowed to develop a number of specific recommendations for neuropedagogy.

Neurophysiological studies of the human brain, regularly engaged in applied types of visual arts indicate the cognitive nature of this process: “This skill requires finding solutions to an unclear problem, where the end point is not specified, and the transformation from a problem state into a state of solution is also flexible” (Lazar, 2018). Lazar (2018) used the method of improperly structured visual tasks that were performed by designers. In this case, measurements of the active areas of the brain were carried out using functional magnetic resonance imaging (fMRI).

Similar results were obtained by Fink, & Bendek (2019), who, using reliable neurophysiological indicators, concluded that creative cognition requires neurocognitive processes which include executive functions, memory processes, internally focused attention or spontaneous ways of thinking (p. 231). This contradicts the classical view that creativity has its own mental mechanisms, isolated from cognitive, mental or motivational spheres.

The main neuropsychological feature of preschool children is the emphasis on play activities, which determines their lateral profile. At this time, the cognitive and creative activity of man is most consistent with the behavioral nature.

In the preschool period of development and in terms of the first manifestations of individual and collective creativity, the child is extremely sensitive to traditional artifacts and educational influences - children's folklore, traditional entertainment and games, so based on this, we can choose traditional pedagogical and creative methods and forms of appropriate influence. Thus, Kekelidze (2014) proved by neuropsychological diagnostics that ethnocultural factors in this period are so strong that they can have both positive and negative effects on the child. The scientist suggests that the appropriate selection of factors for the development of creative personality should be based on the fact that a preschool child shows a lag in physical development from mental, is characterized by acceleration and high sensitivity to innovation.

The artistic activity of preschoolers and primary school students is a primary and primitive manifestation of the cultural development of the world and the first attempts at cultural dialogue with the world through their own artifact. In this regard, such activities (as well as artistic, sports, etc.) become the subject of study of "intercultural neuropsychology". The latter proves that the dorsomedial frontal lobe is responsible for creative and non-standard solutions in solving tasks and focuses only on a positive stimulus and has interpretive tests WAIS-IV, focused on cultural aspects of solving creative tasks (Duggan et al., 2019). This suggests that a positive stimulus and satisfaction from the process can boost a child's inner motivation towards creativity, rather than the mere performance of didactic tasks.

Thus, the creative nature of solving didactic or creative tasks from the point of view of neurophysiology is associated with decision-making based on negative or positive stimuli (invitations, pleasure, values, other reflective or perceived rewards). Such neurophysiological activity is associated with specific areas in the frontal lobes of the human brain. Their importance for creativity, holistic reflection of reality and non-standard decision-making is proved by the facts of damage to these subzones, when such a process becomes impossible or dissociative. Learning and creative motivation is carried out in the ventromedial frontal lobe by a positive stimulus (Vaidya, & Fellows, 2017). Thus, only positive stimuli are effective triggers for the inclusion of neurophysiological mechanisms of creativity, even if the latter is devoted to negative or destructive topics.

One of the neurophysiological features of early creativity is the tendency to archetypal symbols, in particular natural ones (plants and animals as living beings). Due to the ability of the preschooler to animism, the technology provides him with acquaintance with art

materials as living objects with which he can talk, take care of them, etc. Manifestation of this ability is natural for the child and allows him to express himself sincerely in relationships with the world around him, which leads him to receive emotional pleasure and satisfaction. Practice proves that the use of age ability of preschoolers to animism has a positive effect on the development of their creative activity, allows you to create positive relationships with the outside world, easily master the basics of artistic techniques.

Thus, the results of neurophysiological research of different types of creativity and art in particular, showed that the brain networks involved in the design of improperly structured tasks are weakly correlated with the areas responsible for other forms of creativity (music, dance, etc.). This testifies to the unique and autonomous neurophysiological nature of artistic activity. In school, this fact can be used as a separate mechanism of cognitive, reflexive and subjective development of the child, which can not be compensated by other activities.

Accordingly, the technology for the development of creative abilities orients the teacher towards organizing the creative process in such a way as to enable children with various dominant analyzers and channels of perception (auditory, visual and kinesthetic) to fully perceive artistic material on the basis of a polyartistic approach, for which works of painting are used. music, artistic words, game exercises for fantasizing and improvisation, entering the image and the like. Thanks to the combination of audio-visual-kinesthetic means included in the complex of play exercises and creative tasks, children with different types of perception discover the artistic and aesthetic object in its entirety, serves as the basis for the formation in their minds of an integrated picture of the world, ideas about true values.

Ukrainian Experience of Enhancing Teachers' Professionalism and Competencies

The study of fine arts teachers' professional development in Vinnytsia Academy of Continuing Education has made it possible to specify the essence and main aspects of this process. Improving the professionalism of the teacher for the effective application of the developed technology will take place in the theoretical and practical plane during the course of retraining in the postgraduate pedagogical education. Theoretical training includes a range of philosophical and socio-humanitarian knowledge, issues of age and pedagogical psychology, psychology of development of creative

abilities of the individual, didactics; theories and methods of education, methods of art history and fine arts. Practical training takes place during practical, seminar classes, special courses, master classes, trainings, when students acquire psychological and pedagogical, cultural, technological competencies.

The intercourse period, within which teachers are involved in conferences, scientific-practical, scientific-methodical, online-seminars, competitions of pedagogical skills, is aimed at the professional development of teachers on the effective use of technology of creative abilities of preschool children in painting classes. trainings, professional development projects, round tables, creative groups, master classes, pedagogical workshops, festivals of pedagogical ideas, exhibitions, etc.

The most effective forms of work with teachers on the development of their professionalism as a condition for effective implementation of technology for the development of creative abilities of preschool children in the intercourse period, we have identified:

- round table "Ways of development of creative abilities of preschool children", "Motivation of children to art activity: traditions and innovations";

- scientific-practical seminars on problems: "Features of creative abilities of preschoolers of different age groups and conditions of their development", "Pedagogical conditions of introduction of technology of development of creative abilities of preschool children in painting classes", "Development of creative abilities of preschool children by means of fine arts";

- trainings on the development of divergent thinking of teachers, the realization of their creative potential;

- activities of creative groups, the task of which is to find effective ways to implement technology for the development of creative abilities of preschoolers;

- master classes to acquaint teachers with the use of artistic and non-traditional techniques in painting classes.

The system of teacher self-education on the implementation of the developed technology is implemented in three modules: psychological and pedagogical (deepening knowledge about the age characteristics of preschoolers and their consideration in the educational process; pedagogy and psychology of creativity), art (expanding knowledge about the work of prominent foreign and domestic Ukrainian artists. -applied art, types and genres of fine arts, etc.), artistic and aesthetic (mastering and improving technical skills in various artistic and non-traditional image techniques).

The teacher independently acquires knowledge from various sources: television, literature (methodical, popular science, journalism, art, etc.), Internet, video, audio information on various media, participation in seminars, conferences, workshops, exchange of experiences, visiting excursions, theater performances, art exhibitions, museums, etc.

The result of self-education of an educator should be not only the improvement of psychological, pedagogical, cultural and technological knowledge, skills and abilities, but also mastering modern tools of creative development of the child, creative invention of their own effective techniques, methods, forms of work to develop creative abilities of preschoolers, developed need for constant professional growth, divergence of thinking, the ability to model and predict the educational process, the realization of their own creative potential and the development of children's creative abilities, competitiveness in the labor market.

The productive result of the teacher's self-education can be considered the development of perspective lesson plans for painting for children of different age groups, partial programs for the development of the creative abilities of preschoolers by means of various types of visual activity, the creation of manuals, didactic materials, visualization, a virtual art studio with the placement of products of pedagogical and children's creativity, abstracts of painting classes, participation in seminars, consultations, master classes, open classes, generalization of work experience on the problem under study, etc.

Thus, the development of professionalism of a preschool teacher in Ukraine is defined as a set of psychological, pedagogical, cultural and technological competencies as a condition for effective implementation of technology development of preschoolers' creative abilities in painting classes is provided by the system of postgraduate pedagogical education and its self-educational activities.

The second condition that serves as the basis for professional development of teachers, we determine the methodological, didactic and informational support of the educational process in painting classes, to which we refer:

- regulatory framework: Basic component of preschool education, comprehensive and partial educational programs, letters of the Ministry of Education and Science of Ukraine on the organization of educational activities of preschool education institutions, sanitary regulations, etc. ;
- educational and methodical base: methodical recommendations, perspective planning, development of occupations, games, exercises, etc;

- artistic and didactic base: demonstration and visual (paintings and reproductions of Ukrainian and foreign artists of different genres of painting, portraits of prominent artists, samples of decorative and applied arts of different regions of Ukraine, designer works and household items, electronic database of videos and images); audio (electronic database of musical works of outstanding composers, sounds of nature) and handouts for art activities;

- information tools (exhibitions-openings of artistic creativity, corners for parents, web resource of the institution, pages in social networks, etc.), which contribute to the coverage of the results of pedagogical activity and artistic creativity of pupils of the preschool institution.

However, the analyzed conditions, forms of work and other components of the educational process indicate disregard to neurophysiological characteristics of children's creativity and the need for special neuropedagogical competencies in teachers. Thus, a comparative study of current experience and that presented in the above-mentioned sources has made it possible to justify the author's set of teacher competencies and provide relevant recommendations to realize the neurophysiological potential of children in art (see the next section).

Fostering Teacher's Professionalism to Develop Creative Abilities in Preschoolers in Painting Classes

The presence of knowledge in the field of art, world and national art culture, basics of neuropsychology and neuropedagogy allows the teacher at the professional level to select works of art for aesthetic perception of children, harmoniously combine music, painting, artistic word, choreography to achieve the effect of synesthesia and aesthetic pleasure from communication with art. formation of culturological experience of children, interest in national and world art culture in the process of perception and artistic activity. However, it is essential to model and justify relevant partial competencies of fine arts teachers.

Psychological and pedagogical competence is considered by us as the teacher's theoretical knowledge of pedagogy and psychology and neuroscience (about the patterns of personality formation, the development of the human psyche, the peculiarities of perception, imagination, thinking of a preschool child, about the individual and age characteristics of a child, knowledge of psychological and pedagogical methods of researching development personality, means and methods of aesthetic education, etc.) and the ability to use them in professional activities, to ensure effective

interaction of participants in the educational process through the creation of a creative atmosphere, dialogical interaction, a positive psychological climate in the lesson, recognition of the child's right to self-expression, stimulating pupils to cognition and self-realization in art.

Technological competence is the ability of a teacher to adhere to the structural stages of the introduction of technology of creative development of a preschool child; ability to integrate different forms and types of activity, expediently and effectively use the synthesis of different types and genres of art in painting classes; mastering the skills of organizing cycles of painting classes in the system of development of creative abilities of preschool children.

Awareness of the purpose and objectives of the technology of creative development of preschool children, its conceptual principles, principles and conditions of application allows at a professional level to design the introduction of technology of creative abilities in painting classes in different age groups of preschool education, create a didactic base, develop syllabi, system of game exercises, perspective planning on the organization of employment both on painting, and on other kinds of art activity.

The ability to integrate different forms and activities, appropriate and effective use of the synthesis of different types and genres of art in painting classes will promote the development of associative thinking, imagination, creative abilities of children, the ability to establish associations; achieving an aesthetic level in the perception of art and the formation of preschoolers' values to beauty, experiencing feelings of satisfaction, joy, inspiration, desire to create artistic images; effective organization of creative self-expression of each child, the development of its research abilities in artistic and experimental activities, the formation of the ability to enter the image and convey its characteristics by plasticity, gestures, facial expressions, voice, drawing; creating a model of a real object, object, phenomenon in an artistic image and the ability to convey its characteristics in the picture.

Cultural competence in the structure of professionalism of the teacher is manifested in the formation of artistic and aesthetic value orientations, a set of knowledge, skills and abilities necessary for the implementation of tasks of artistic and aesthetic education and development of creative abilities of preschoolers, knowledge in art, world and national art culture.

Artistic and aesthetic value orientations of the teacher allow to introduce the technology of creative abilities of preschool children in

painting classes on an emotionally colored level and to form a system of values in relation to themselves, the teacher, other children, the process of art and its products, art, beauty of the world. as well as the relationship in creative activity between the subjects of the educational process.

The set of knowledge, skills and abilities necessary for the implementation of the tasks of artistic and aesthetic education and development of creative abilities of preschoolers, in our opinion, can be considered part of both psychological and pedagogical and cultural competence, but in the first it contains awareness of with neuro pedagogical and psychological and pedagogical knowledge and provides conditions for psychological comfort, confidence in their abilities, support and success in the process of creative self-expression, and in the latter is based on the artistic and aesthetic experience of the teacher and his ability to organize the process of aesthetic perception at such a level that it was interesting and meaningful for children. enriched their experience in sensory perception of the world and formed in them an aesthetic attitude to it through: the development of the ability to notice, feel and understand beauty in the world, the culture of perception of beauty objects and sensory response in artistic and creative activities, developed the ability to express personal attitudes to the world proper her creativity.

The neuropedagogical competence of a teacher of fine arts is the ability to establish nerve correlates of creative cognition, which requires adapting creative tasks to the age, abilities and even the psychological state of the student. This correlates with the ideas of such scholars as Benedek, Christensen, Fink, & Beaty (2019), who developed neuropsychological parameters of the organization and evaluation of the visual process in creating a design that can be used by teachers in conducting lessons in fine arts. The main thing is to observe, evaluate and correct cognitive processes during drawing (imaging session). Important parameters are the number of attempts (repetitions), execution time, degree of complexity (image of a particular object or phenomenon that requires divergent creative thinking). As an experiment to observe the neuropsychological portrait of students, one can use blitz problems, tasks for the visual solution of abstract problems, fixing pauses and active phases of creativity to observe brain activity (phases of thinking and phases of creativity), the presence of insights and changes in creative solutions (Benedek, Christensen, Fink, & Beaty, 2019).

Mastering the skills of organizing cycles of painting in the system of creative abilities of preschool children will help the teacher to design a pedagogical process with the effect of immersion in the topic and provide

conditions for children to create an artistic image, because: the first (cognitive) lesson will enrich their cognitive experience. emotional and sensory level, active interaction with the aesthetic object and expression of personal impressions, the creation of an artistic image first in any form with pantomime, facial expressions, gestures, words, sounds, and then with various artistic materials; in the second (technical) lesson children will try to reveal the secret of an aesthetic object in play and experimental activities with artistic materials, create an image with various artistic or non-traditional materials, use the expressive possibilities of line, color, composition, rhythm to realize their idea; in the third (final, creative) lesson, preschoolers will be able to use the emotional-sensory, cognitive experience gained in previous lessons of the cycle and try themselves in creating a unique artistic image through improvisation, emotional-motor imagination and various artistic materials, ways and means of expressing personal ideas.

It is also important to consider neurophysiological aspects of creativity in the context of pedagogy of creativity when working with preschool children.

For the successful implementation of the technology of creative abilities development it is necessary to saturate the creative activity with positive emotions (pleasure, joy, exaltation, success); development of children's sense of psychological security; patient attitude to failures, mistakes, ignorance; creating a situation of success for each child through the support and encouragement, variation and diversification of its self-expression in creativity.

The positive mood of children in painting classes is achieved by stimulating the emotional sphere of children in the process of polymodal perception of works of art; prejudice of negative feelings (fear, tension, insecurity); creating in children a state of elation, inspiration, enthusiasm, the need for creative activity; promoting the active manifestation of freedom, imagination, fantasy in self-expression and success of the child in art. Priority in the artistic process in the classroom are aesthetic emotions that arise when perceiving the beauty of colors, sounds, movements, shapes in the phenomena of nature and art, moral feelings (compassion, kindness, care, love for loved ones, family, kindergarten, hometown (village), Motherland, the world and the Universe), arising under the influence of moral and aesthetic conversation of the teacher with children.

Children's interest in the content of activities is provided by various forms of work in the classroom, play techniques, research activities, activation of the emotional sphere of preschoolers. The child's freedom of expression during play exercises that accompany the process of perception

of works of art, communication with artistic and aesthetic objects, activates its actions, brings pleasure and brings to a creative level artistic activity. The productivity of artistic activity is expressed not only by drawing, but also by artistic images created during fantasizing, improvisation, game exercises using facial expressions, pantomime, etc. The teacher's support of the child's creative expression, joint search for a solution develops his creative vision, inspires independent activity. The co-creation of the educator and the child in a single emotional and sensory field opens new opportunities in communication, self-expression and artistic creativity of the child.

Mutual understanding in painting classes is achieved through positive intersubjective interaction of the child with the teacher and peers in the process of artistic activity, exchange of individual and personal content through expressive facial expressions (look, facial expressions), effective (expressive hand and body movements), speech (expression) , questions, answers, remarks) means. Tolerant pedagogical influence on the communication process helps the teacher to establish trusting relationships with children, provide each child with the right to his own opinion, independent action, maintain his self-esteem, take into account his abilities and desires, implement co-creation in the educational process, predict possible consequences.

Satisfaction with the relationship and results of activities is provided by: the teacher's attention to each child, demonstration of respect for her and a friendly attitude to her activities; priority of attention to the child's virtues; faith in its capabilities, support, creating a situation of success; encouraging the attentive attitude of children to each other; the sincerity of the teacher and trust in the child; the absence of pressure from the teacher on the child and the recognition of his right to his own opinion, ensuring the possibility of self-expression of each. An important aspect of motivation is the teacher's recognition of the child's drawing, support of a unique manifestation of imagination, peculiarities of its perception and sense of artistic image - this is very important, because unrecognized drawing can lock the child's personality, negatively affect his psyche. Support, encouragement, joy of success of the child provide efficiency of technology of development of creative abilities of preschoolers.

Conclusions

Thus, artistic creativity in preschool age is a powerful tool for shaping a child's personality and his subjective self-identity. In this regard, the work showed a high correlation with neuroscience, which is primarily aimed at finding mechanisms for the child's awareness of their own

subjectivity in interaction with the world and with other people and the formation of the so-called "Ego-concept". The latter is a relatively complete and autonomous neuropsychological formation at the age of 3 years, but the final consolidation of the corresponding neural connections that will form the core of the personality is still ongoing and best fixed through changes in themselves and the world around them (Della Sala & Anderson, 2012). In preschool, the creative potential of the child for the first time fully manifests itself, but remains not fully known and defined, labile and symbolic in its expression.

The professionalism of the teacher, which we consider as psychological and pedagogical (the teacher has theoretical knowledge of pedagogy and psychology, the ability to use them in professional activities, ensure effective interaction of participants in the educational process through creating a creative atmosphere, dialogue, positive psychological climate in the classroom, recognition of the child's right to self-expression, stimulating pupils to learn and self-realization in art), culturological (formation of artistic and aesthetic value orientations, a set of knowledge, skills and abilities necessary for the implementation of the tasks of artistic and aesthetic education and development of creative abilities of preschoolers, knowledge in the field of art, world and national art culture) and technological competence (teacher's ability to understand the purpose and objectives of the technology of creative development of preschool children, its conceptual principles, principles and conditions of application; the ability to integrate different forms and activities, appropriate and effective use of synthesis of different types and genres of art in painting classes; classes in painting in the system of development of creative abilities of preschool children), and methodical, didactic and informational support of children and teachers in painting classes together are pedagogical conditions for effective implementation of technology for the development of creative abilities of preschoolers.

In this regard, neuropedagogical competence can be defined as the teacher's consideration of the age and individual characteristics of preschool children which is an important condition for the effectiveness of the technologies used. Besides, the organization of activities in painting classes is with the activation of such characteristics of preschoolers as integrity and subsensory (hypersensitivity) perception of the world, synergy, imagery, associativity, sensitivity of thinking, the ability to animism.

It is also vital to consider traditional and innovative (including the integration of humanities and neurosciences) technologies to successfully implement the technology for developing creative abilities

development in Ukraine. On the one hand, it will make it possible to develop the above-mentioned competencies. On the other hand, it will contribute to realizing the neurophysiological potential of preschoolers via positive emotions, sensitivity to playing and cognition, intersubjective interaction.

At the same time, the hypothesis is still open due to the limitations of the research. These limitations lie in the need to develop specific methods and programmes for teaching fine arts, taking into account the described recommendations and assessing the effects of the implementation.

Acknowledgements

The authors of the article have equally participated in the preparation of the article: Olena Hnizdilova analyzed neurophysiological and pedagogical approaches to developing creative abilities in preschoolers in painting classes; Tamara Marchii-Dmytrash studied and summarized the experience of enhancing fine arts teachers' training in Ukraine; Marianna Matishak and Liudmyla Shulha formulated relevant recommendations and identified new educational conditions associated with the research problem; Milena Yaroslavtseva modelled and justified partial competencies of fine arts teachers; Hanna Chorna formulated general conclusions of the research and combined the above-mentioned aspects into a single text.

References

- Andrievska, V. (2005). *Psykhobohichnyy dovidnyk uchytelya* (Т. 1-4) [Teacher's psychological guide (Vol. 1-4)]. Glavnyk.
- Babansky, Yu. K. (1989). *Izbrannyye pedagogicheskiye trudy* [Selected pedagogical works]. Pedagogy.
- Becker, N. (2014). Mehr verstehen, besser handeln? Zum Verhältnis von Pädagogik und Neurowissenschaften [Understand more, act better? On the relationship between education and neuroscience]. In R. Fatke, & J. Oelkers (Eds.), *Das Selbstverständnis der Erziehungswissenschaft: Geschichte und Gegenwart* [The Self-Image of Educational Science: Past and Present] (pp. 208–225). Beltz Juventa. https://www.pedocs.de/volltexte/2014/9095/pdf/Becker_2014_Mehr_verstehen_besser_handeln.pdf

- Benedek, M., Christensen, A. P., Fink, A., & Beaty, R. E. (2019). Creativity assessment in neuroscience research. *Psychology of Aesthetics, Creativity, and the Arts*, 13(2), 218–226. <https://doi.org/10.1037/aca0000215>
- Bengtsson, M. (2018). *Neuropedagogik för skolan – dröm eller verklighet? En granskning av litteratur för pedagogiska praktiker* [Neuropedagogy for school – dream or reality? A review of literature for pedagogical practitioners] [Unpublished Bachelor's thesis]. Lund University, Lund. <https://lup.lub.lu.se/student-papers/search/publication/8949368>
- Della Sala, S., & Anderson, M. (2012). *Neuroscience in education: the good, the bad, and the ugly*. Oxford University Press. <https://doi.org/10.1026/0033-3042/a000044>
- Duggan, E. C., Awakon, L. M., Loaiza, C. C., & Garcia-Barrera, M. A. (2019). Contributing towards a cultural neuropsychology assessment decision-making framework: comparison of WAIS-IV norms from Colombia, Chile, Mexico, Spain, United States, and Canada. *Clinical Neuropsychology*, 34(5), 657–681. <https://doi.org/10.1093/arclin/acy074>
- Fink, A., & Benedek, M. (2019). The neuroscience of creativity. *Neuroforum*, 25(4), 231–240. <https://doi.org/10.1515/nf-2019-0006>
- Golovin, S. Yu. (1998). *Slovar prakticheskogo psikhologa* [Dictionary of the practical psychologist]. Harverst.
- Kekelidze, Z. I. (2014). *Opredeleniye zakonomernostey vliyaniya sotsialnykh, stressovykh, ekologicheskikh i etnokulturalnykh faktorov na uroven obshchestvennogo psikhicheskogo zdorov'ya v Rossii* [Determination of the patterns of influence of social, stressful, ecological and ethnocultural factors on the level of public mental health in Russia]. NIOKR.
- Komogorova, M., Maksymchuk, B., Bernatska, O., Lukianchuk, S., Gerasymova, I., Popova, O., Matviichuk, T., Solovyov, V., Kalashnik, N., Davydenko, H., Stoliarenko, O., Stoliarenko, O., & Maksymchuk, I. (2021). Pedagogical consolidation of pupil-athletes knowledge of humanities. *Revista Romaneasca Pentru Educatie Multidimensionala*, 13(1), 168–187. <https://doi.org/10.18662/rrem/13.1/367>
- Kononko, O. L. (2008). *Bazova prohrama rozvytku dytyny doshkil'nogo viku "Ya u Sviti"* [Basic program of preschool child development "I am in the World"]. Svitich.
- Lazar, L. (2018). The cognitive neuroscience of design creativity. *Journal of Experimental Neuroscience*, 12, 1–6. <https://doi.org/10.1177/1179069518809664>
- Maksymchuk, B., Gurevych, R., Matviichuk, T., Surovov, O., Stepanchenko, N., Opushko, N., Sitovskiy, A., Kosynskiy, E., Bogdanyuk, A., Vakoliuk, A., Solovyov, V., & Maksymchuk, I. (2020a). Training future teachers to

- organize school sport. *Revista Romaneasca Pentru Educatie Multidimensionala*, 12(4), 310–327.
<https://doi.org/10.18662/rrem/12.4/347>
- Maksymchuk, B., Matviichuk, T., Solovyov, V., Davydenko, H., Soichuk, R., Khurtenko, O., Groshovenko, O., Stepanchenko, N., Andriychuk, Y., Grygorenko, T., Duka, T., Pidlypniak, I., Gurevych, R., Kuzmenko, V., & Maksymchuk, I. (2020b). Developing healthcare competency in future teachers. *Revista Romaneasca Pentru Educatie Multidimensionala*, 12(3), 24–43.
<https://doi.org/10.18662/rrem/12.3/307>
- Melnyk, N., Maksymchuk, B., Gurevych, R., Kalenskyi, A., Dovbnaya, S., Groshovenko, O., & Filonenko, L. (2021). The establishment and development of professional training for preschool teachers in western European countries. *Revista Romaneasca Pentru Educatie Multidimensionala*, 13(1), 208–233.
<https://doi.org/10.18662/rrem/13.1/369>
- Palagina, N. N. (1992). Predmetnaya igrovaya aktivnost v rannem detstve [Objective play activity in early childhood]. *Voprosy psikhologii* [Issues of Psychology], 5, 31–34.
<http://www.voppsy.ru/issues/1992/925/925031.htm>
- Palamarchuk, O., Gurevych, R., Maksymchuk, B., Gerasymova, I., Fushtey, O., Logutina, N., Kalashnik, N., Kylivnyk, A., Haba, I., Matviichuk, T., Solovyov, V., & Maksymchuk, I. (2020). Studying innovation as the factor in professional self-development of specialists in physical education and sport. *Revista Romaneasca Pentru Educatie Multidimensionala*, 12(4), 118–136.
<https://doi.org/10.18662/rrem/12.4/337>
- Pirozhenko, T. (2012). *Osobystisnyy potentsial doshkilnyka: umovy rozvytku v suchasnomu suspilstvi* [The personal potential of the preschooler: the conditions of development in modern society]. *Doshkilne vykhovannya* [Preschool Education], 1, 8–15. <https://ird.npu.edu.ua/files/24.pdf>
- Rogers, K. R. (1994). *Vzglyad na psikhoterapiyu. Stanovleniye cheloveka*. [A look at psychotherapy. Becoming]. Progress – Universe.
- Sorochan, T. (2004). Aktualni problemy pislyadyplomnoyi pedahohichnoyi osvity u vymiri sohodennya [Current problems of postgraduate pedagogical education in the dimension of today]. *Pislyadyplomna osvita v Ukrayini* [Postgraduate Education in Ukraine], 1, 13–16.
- Sternberg, R., & Lubart, T. I. (1995). *Defying the crowd: cultivating creativity in a culture of conformity*. Free Press.
- Sukhorukova, H. V., Dronova, O. O., Holota, N. M., & Yantsur, L. Ya. (2010). *Obrazotvorche mystetstvo z metodykoyu vykladannya v doshkilnomu navchalnomu zakladi* [Fine arts with teaching methods in preschool]. Slovo.

- Vaidya, A. R., & Fellows, L. K. (2017). The neuropsychology of decision-making: a view from the frontal lobes. In J.-C. Dreher, & L. Trembley (Eds.), *Decision Neuroscience: an Integrative Approach* (pp. 277–289). Academic Press. <https://doi.org/10.1016/B978-0-12-805308-9.00022-1>
- Vetlugina, N. A. (1972). *Khudozhestvennoye tvorchestvo i rebenok* [Artistic creativity and the child]. Pedagogy.
- Zaporozhets, A. V. (1986). *Izbrannyye psikhologicheskiye Trudy (T. 1-2)* [Selected psychological works (Vol. 1-2)]. Pedagogy.