



Stimulating Preschoolers' Creative Imagination through Hands-on Practice Activities

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Abstract

The research aims to develop the creative imagination of pre-school children, using different working techniques in practical activities. An experimental, formative methodology was developed. Twenty-nine preschool children of the "Nicolae Iorga" Secondary School, Bacău, in the 5-6 years age group, namely Group B "Sunbeam", participated in the research. To stimulate creative imagination, specific working techniques for practice, and hands-on activities were systematically used, and modern strategies based on diverse techniques and materials were introduced into the children's work. The research results revealed that hands-on practice activities allow for the selection of activity organization forms that foster learning through discovery. This type of learning, while requiring independent effort, motivates participation and stimulates the creativity of pre-schoolers. This is because they are engaged in developing their knowledge. A creative motivation for knowledge and self-discovery has been observed in preschoolers, which supports the acquisition and development of personality traits specific to creative people: self-confidence, independent thinking, and sensitivity to problems.

Key words: Creativity; formative experiment; practice activities; preschool education

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1. Introduction

Building the child's sensitivity and receptivity to different materials and their particularities, to the perception of the surrounding world, and the correlation of perceived phenomena, fosters the transfer of these skills to other areas. Thus, in this process, the environment plays an important role, as it can stimulate the development of creativity from early childhood. The preschool teacher's role is to draw children's attention to all phenomena, to stimulate, and engage them in observation (perceptions); the teacher should also raise children's awareness of, and connection to the environment using the senses. A child's earliest experiences are mostly assimilated through the sense of touch, because it causes self-detachment from the environment, while at the same time putting him in touch with this environment. This is why experiences based on direct contact and communication should be encouraged.

Stimulating creativity is a complex socio-educational procedure, which simultaneously includes the phenomena of activation (incitement and support), training, and development through the actualization of creative virtues, for their access from the possible to the real, through effective affirmation. The essence of the educational strategy undertaken in building creativity lies in its centering on the development of the creative personality of preschoolers. This strategy involves two complementary strands: discovering creative potential and fostering ways to stimulate the transition from potential to manifested creativity. The entire didactic approach undertaken by the teacher must be subordinated to the training and exercising of the creative potential of preschool children so that they adopt a creative attitude in the activities they carry out. The educational value of the various ways of preschool children's creativity in preschool children can only be appreciated in the context of the specific situation in which the teacher's strategy, the preschool child's personality, and the information content interact (Caiman et al., 2021). Through the strategy adopted, the teacher must provide space for spontaneity and initiative, the permissive strategy being superior to the inhibitive and coercive ones. The teaching strategy must be predominant in stimulating pupils' questioning attitude. It favors divergent thinking, which is a basic factor in the creative potential. The problematizing strategy must take precedence over the expository one. In all the teaching strategies adopted, the teacher can use special methods and procedures to trigger and stimulate the various factors of creative potential, in ways that particularly target one or another of the psychological factors of creativity (thinking, skills, imagination, motivation, character, etc.).

To achieve creative teaching, especially in the teaching of visual arts and practical activities, the first condition is that the teacher must also be creative. Creativity starts with the choice of the most adequate teaching strategies to achieve the proposed objectives. Teachers must be able to create instructional situations that will become learning situations for the preschoolers, as this is the only way to achieve the expected learning outcomes. The teacher needs to stimulate the preschool pupils' effort and their tendency to make their contribution and be original, inventive, and creative.

The insistence on conformity may lead to a traditional society that would be unable to foster the emergence of inventors. In this context, a distinction may be drawn between 'closed systems' and 'open systems' of education; "open systems" promote originality, experimentation, initiative, and inventiveness, while "closed systems" promote the accumulation of knowledge, memorization of facts and the finding of pre-existing answers, and are suited to education for conformism.

The issue of creativity lies at the basis of modern education, one not bound by the rigors that exclude the actors of teaching. This is why it is necessary to approach the teaching process from both a psychological and pedagogical perspective. The need for the study results from the need and relevance of active-creative strategies in the development of preschoolers' creative imagination. It is highlighted the impact of creative activities on the development of their personalities.

2. Psychological approaches to creativity

2.1. Creativity as a process and as a product

The complexity of the creativity phenomenon also results from the fact that it can be approached from several perspectives (Jinga & Istrate, 1998): horizontally and vertically. The horizontal approach enables us to highlight three major aspects: the creative personality, the creative process, and the created product. The vertical axis includes several levels of structuring and emergence of creativity:

- expressive creativity specific to childhood, where the behavior itself matters more than the skill or quality of the product produced;
- productive creativity involves the acquisition of skills for specific domains;
- inventive creativity requires the ability to make new connections between elements already known;
- innovative creativity means finding new and original solutions with theoretical and practical resonance;
- emergent creativity that is specific only to geniuses who have revolutionized an entire field of science, technology, or art.

The components of creativity express the interdependence between creative product, creative process, and creative personality. The creative product represents something new in terms of an individual's previous social or life experience. The validity of the creative product engages two complementary criteria: the criterion of originality and the criterion of relevance, which allows self-assessment of the performance, irrespective of its form of manifestation (material or spiritual creative product) in terms of social utility. The creative process involves the following stages: the preparation stage, the incubation stage, the illumination stage, the evaluation stage.

The creative personality highlights the resources of the human psychic system, and its capacity to engage in a sustained creative process at the level of individual consciousness to produce something new, original, and effective.

2.2. The determinants of creativity

It is necessary to consider the whole system of conditions or factors favoring the affirmation and development of creativity: structural, and intrinsic factors of creativity. Along with the premises of creative learning, E. P. Torrance (1974) studied creativity-blocking factors, indicating six factors that affect its growth:

- success orientation - the individual's courage to achieve something is conditioned by achieving maximum success. This orientation corresponds to the characteristics of a non-creative personality;
- peer orientation - fear of being different from peers inhibits the tendency to discover the world and oneself;
- prohibition to ask questions - preschoolers are often forbidden to ask questions because it would disturb the learning process;
- gender self-perception - boys are afraid of appearing feminine and girls have been found to refuse to solve problems that they feel are masculine;
- divergent pupils are seen as abnormal - children become quickly aware of the consequences of their divergent behavior and spend their energy fighting their supposed weaknesses more than developing their creativity;
- work-play dichotomy: the existing prejudice about the impossibility of combining work with play, the latter producing pleasure that seems incompatible with work, has led some teachers to prefer serious, intelligent pupils to those with creative behavior.

Creativity involves the general predisposition of one's personality towards novelty, a certain organization of mental processes in the personality system. Approaching specific techniques for stimulating the creative imagination of pre-schoolers should consider several factors that favor the development of creativity such as: structural, intrinsic factors of creativity, general climate factors in the development and affirmation of children's personalities, factors of psychological environment and psycho-educational and stimulating climate for the affirmation and development of creativity.

Psychological factors include intellectual factors, non-intellectual factors, special skills, and abyssal factors (Shalley & Perry-Smith, 2001). The intellectual factors include divergent thinking, convergent thinking, and perceptual style (apprehension). The non-intellectual factors more commonly involved in creativity are motivation, affectivity, temperament, character, and inner resonance. Special skills are instrumental structures of personality that ensure above-average performance in particular spheres of professional activity. They are classified according to the type of activity in which they manifest themselves, as follows: artistic skills, scientific skills, technical skills, sporting skills, managerial skills, pedagogical skill. Abyssal factors support the theory that creation takes place under the influence of the unconscious through the involvement of abyssal energies.

The biological factors involved in human creativity are:

- heredity, which refers to the set of processes that govern biological transmission and are based on the genetic heritage or genome (Han et al., 2018);
- age - there are no fixed boundaries within which creativity can extend. The frequency of the best products created increases with age, up to 30-40 years of age, after which it gradually decreases. However, there have also been cases of creativity after the age of 80: Goethe, Iorgu Iordan.
- gender, as a potential creative factor, is not an indicator, as women's creativity is in no way inferior to that of men. However, it has been found that there is greater value in products created by men. Maximizing hereditary potential for creativity requires close collaboration between representatives of both sexes.
- mental health - no correlation has been found between creativity and neurosis. Recent research does not confirm the old psychopathological theory of creativity, which held that there was a close link between the higher creativity of men of genius and mental illness.

Social factors are external factors related to socio-cultural, economic, and, last but not least, educational conditions (Paulus & Dzindolet, 2008). Creative personalities cannot assert themselves outside the social context in which they live and create. In addition to the climate of the micro-group to which the subject belongs, the general climate also influences the individual and his or her creative possibilities, and this climate comprises, first and foremost, the requirements of society for creative activity in a given field of activity.

2.3. Blockages of creativity stimulation

In the expression of preschoolers' creativity, possible blockages may occur, which can be prevented and eliminated by the teacher's constant concern to choose the most adequate strategy. These blockages may be subjective, related to the preschooler's personality, or of an objective nature, having their origin in environmental conditions (Cosmovici & Iacob, 1998). Subjective blockages are related to certain emotional experiences (fear, impatience, anxiety) and a certain rational rigidity, concretized in an exaggerated trust in algorithmic problem-solving procedures, to the detriment of heuristic ones. Learning technology should focus on the creative process, not its product. Through the methods, means, and procedures used, the teacher aims to move from latent to manifested creativity.

3. Ways to stimulate the creative imagination of pre-schoolers

As a general strategy for stimulating the creative imagination in pre-school education, it is useful to verify in the system of instructional and educational activities the conditions and principles of creative learning (Hashim et al., 2022). This type of education implies a series of conditions for stimulating creativity, such as:

- training the oral production and expression skills - creating free stories or with a given beginning, based on a series of illustrations, a toy, a plan, or a topic, by providing children with sketches, boards, cards, models, silhouettes, etc.;
- independent interpretation of images by asking them to give a picture as many titles as possible;
- building stories based on different ways of logically ordering a series of pictures;
- free drawings in which pupils have to build on not only a thematic idea but also some possible models for decorating certain spaces or materials (textiles, wood, cardboard);
- analyzing and interpreting the children's drawings to highlight the many possibilities for using shapes and colors;
- playing various educational games or role-playing games to encourage creative thinking;
- analysis of errors and the various ways of prevention;
- listing multiple answers to possible questions that children may ask.

The most suitable method for both parents and teachers to stimulate children's creativity has always been play (Dominey, 2021). The premise of future creative behavior that manifests itself in originality and social value is a playful attitude. Through play, children can be anything and anywhere within the limits of his or her imagination.

Starburst helps build creativity through interrogative techniques. The application of the method consists of: a topic is chosen; it is placed in a star-like graphic format each corner of the star, there are asked the questions: Who?, What?, When?, Where?, Why? The advantages of using this method are: it is a source of discoveries; it can be applied at any level; it can be used as a relaxation method.

The six thinking hats method is a working method that tries, simply and playfully, to practice and build the following skills (De Bono, 2008): recognizing different possible models of thinking on a situation/problem; describing the problem from different possible and relevant angles; highlighting the differentiated efficiency in approaching and solving a problem.

The cube method is used to explore a topic/situation from several perspectives - it offers the possibility to develop the skills needed for a complex and integrative approach. The advantages of applying this method are: it leads to pupils' conscious participation; it allows differentiation of learning tasks; it stimulates logical thinking; it familiarizes pupils with scientific research. The disadvantages of applying these methods are: it is time-consuming; it may pose class-management problems, e.g., noise; it is not possible to observe and assess the quality and quantity of acquired knowledge.

The case study is "a method of confrontation of participants with a real, authentic situation, taken as a typical example, representative of a set of problematic situations and events" (Oprea, 2009). Creative controversy is also called structured or academic controversy (Johnson & Johnson, 1993). The cluster method is a brainstorming method that stimulates finding connections between ideas (Şahbaz & Duran, 2011).

The gallery tour is easy to apply at any level. Through this method, the classroom becomes an environment that stimulates thinking, creativity, and effective learning. It emphasizes group thinking which can be more productive than individual thinking [28].

Role-play is the most widely used and it has a mixed-method structure that includes several other methods (explanation, instruction, observation, debate). The method can be aimed at:

building attitudes and behaviors in given situations; practicing and developing problem-solving skills; forming of team spirit.

Research objectives and hypotheses

The research objectives are following:

O1: to identify the initial level of preschoolers' creativity as a starting point for organizing the psycho-pedagogical experiment;

O2: to use practical activities to develop preschoolers' creativity;

O3: to evaluate the contribution of these activities to building preschoolers' creativity;

O4: to record the preschoolers' progress following the application of the progress factor.

The research hypothesis is: The systematic integration of creative strategies in practical activities specific to the field of Human and Society contributes to the development of preschoolers' creativity in the 5-6 year age group from kindergarten.

4. Methodology

4.1. Participants

Twenty-nine preschoolers from the "Nicolae Iorga" Secondary School of Bacău, in the 5-6 year age group from Group B "Sunbeam", participated in the research. The children come from organized families, with harmonious relationships, with an average to upper socio-economic level, many of the parents having secondary or higher education and proving an active involvement in the education of children.

2.3. Research methods and instruments

The psycho-pedagogical experiment was used as research methods to achieve the proposed objectives. The formative experiment involves intervention in the preschool group to determine certain changes by introducing the "progress factor". To approach the formative experiment correctly and fully, the following steps must be taken: an initial creativity test; introduction of the "progress factor"; retesting (application of a final creativity test) by applying the test used in the initial assessment; comparison of the results.

In the experiment applied to build creativity factors in preschoolers, practical activities were conducted in which active-creative strategies were used (role-playing, brainstorming, starburst, cube method, panel discussion). The aim was to develop the factors of creativity and develop the ability of preschoolers to think creatively in solving specific problems in the realization of objects through practical activities. The experimental action consisted of carrying out practical activities according to a phased program, as follows:

- an initial, creativity test was applied;
- a formative creativity test was applied (after the introduction of the "progress factor", respectively the use of active-creative strategies in the practical activities);
- a final Creativity Test was applied;
- other creativity tests were applied, which capitalized on the active creative strategies.

2.4. Procedure

The research was conducted from November 1, 2022, to May 9, 2023, during the 2022-2023 school year, and covered several stages: The constative phase was conducted from November 1 to December 1, 2022. In this stage, the test was applied to find out the initial level of preschoolers' creativity in practical activities in the Human and Society domain.

The formative-remedial stage took place from December 5, 2022, to April 19, 2023. At this stage, a program of didactic activities was designed, organized, and carried out following the

specificities of preschoolers' psychological characteristics. The introduced progress factor consists of the use of active-creative methods in practical work; with their help, it was aimed to improve the methodology of work in practical activities belonging to the field of Human and Society. A large variety of practical activities were applied to stimulate creativity, related to the level of understanding of the group and respecting the curriculum for pre-school education in the field of Human and Society.

The final evaluation phase took place from May 2-9, 2023. During this stage, the final evaluation test was applied to record the preschoolers' performance at the end of the psycho-pedagogical experiment.

During the formative stage of the pedagogical experiment, specific active-participative teaching strategies were applied to develop the creativity of preschoolers. In parallel with the achievement of the objectives of normal education, it was aimed to develop the components of creative thinking: fluidity, flexibility, originality, and elaboration without overstraining the preschoolers. Training under these experimental conditions led to the formation of positive attitudes towards the instructional-educational process in general and practical activities in particular, as well as to the creative manifestation of handwork skills, compared to the conditions of traditional training.

5. Results

The initial creativity assessment consisting of a hands-on activity on the topic "Autumn leaf sweeping", took place on two successive days. In the first day, the children made the product, having as a model the collage made by the teacher. On the second day, the children had to make the collage without having the teacher's model on display, being free to express their creativity. For both activities (with and without the teacher's model), there were described the assessment objectives, four items specific to the application of the initial assessment, for each activity, as well as the performance descriptors. The results of the initial creativity assessment are presented for each item in Table 1.

Table 1. Results obtained after analyzing the initial creativity assessment

Activity	Activity 1 Making the collage based on the teacher's model				Activity 2 It is based on children's creative, freely expressed imagination			
	I1	I2	I3	I4	I1	I2	I3	I4
Achieved	17	14	19	19	18	16	21	16
Under development	12	15	10	7	11	13	8	13

The analysis of the data included in Table 1 shows an increase in the number of children who solved items I1 (choice of colors), I2 (cutting on the contour), and I3, originally assembling components, in the case of the activity where their creative imagination was freely expressed. There is a decrease in the number of children in solving I4 for Activity 2. The number of those who required support in demonstrating the usefulness of the product was higher in activity 1.

The final creativity assessment was administered with the collage having the same components as the initial creativity assessment. The chosen topic was "The Spring Umbrella". The final creativity assessment, a hands-on activity on the topic "The Spring Umbrella", took place on two successive days. On the first day, the children made the product, having as a model the collage made by the teacher. On the second day, the children had to make the collage without having the teacher's model on display, being free to express their creativity.

For both activities (with and without the teacher's model), there were described the assessment objectives, four items specific to the application of the Final Assessment, for each

activity, as well as the performance descriptors. The results of the final creativity assessment are presented for each item in Table 2.

Table 2. Results obtained after analyzing the final creativity assessment

Activity	Activity 1 Making the collage based on the teacher's model				Activity 2 It is based on children's creative, freely expressed imagination			
	I1	I2	I3	I4	I1	I2	I3	I4
Achieved	21	17	20	16	21	20	25	16
Under development	9	13	10	14	9	10	5	14

The data from Table 2 on the achievement of the items specific to the two activities (with and without the model of the teacher) reveal an increased number of children who solved all the items in the case of the activity in which their creative imagination was freely expressed, thus registering visible progress in the case of Item 4.

The comparative analysis of the items realized by the preschoolers in Activity 1 - Making a collage according to the teacher's model, shows an increase only for the first item, a relative stagnation, and a decrease for Item 4, which shows that the preschoolers' concern for the faithful reproduction of the teacher's model negatively impacts their creative performance. In both types of practical activities, it can be observed that the children showed interest in the proposed themes and the use of creative strategies made them more active and collaborative, which led to a more visible expression of creative imagination. From the above, it is possible to observe the differences in the behaviors of the children who carried out imposed activities compared to their behaviors during activities containing creative strategies.

6. Discussions and conclusions

It is very important to recognize that stimulating the abilities and skills of pre-schoolers and encouraging creativity and initiative, both individual and collective, are extremely beneficial for the development of preschoolers' personalities. Children meet the world and life without prejudices, by transferring and associating knowledge, they learn how to use it in different ways of approaching reality.

Practical activities make a major contribution to this process if they are approached creatively, so that children understand that artistic and scientific knowledge are not in opposition, but are complementary to each other, combining human work and creation in various forms. The data of the study carried out by Yildirim and Yilmaz (2023) indicate that the most suitable activities for the development of creativity in preschoolers are: going on trips with children, carrying out artistic and theater activities, organizing science and mathematics activities based on research and motivating children to create authentic products with different materials. By practically applying the specific principles and requirements of creative education, as well as some methods and procedures for training the components of creative thinking (flexibility, fluidity, originality), data were obtained on their positive effects in achieving the proposed objectives.

We found numerous gains both in terms of the level of acquisition of action skills of preschoolers, doubled by positive changes in the whole personality in the affective, motivational, skills, attitudinal, and relational spheres, thus increasing their chances of adapting to a world that is constantly changing. Also, by knowing the specifics of these strategies, and by applying them creatively, the teacher may see his/her preschoolers from totally new, unexpected perspectives, in a stimulating atmosphere of collaboration, enthusiasm, and free expression of their ideas. Children's creative participation is correlated with the skills and competences of involvement and play in kindergarten activities (Nikkola et al., 2024). The familiarization with active-creative

strategies, and their application increased effective participation in the act of learning even for the most shy, for the less skilled, which increased their self-confidence, motivated them, and contributed to their socialization. The activity based on freely expressed creativity led to the disappearance of that communication barrier between the children and the teacher, and created a more relaxed atmosphere during the application of strategies for stimulating creativity.

Encouraging preschoolers to express their own opinions, discuss them with others, and find solutions to some "technical" problems together contributes to effective and sustainable learning, given that that cooperative learning maximizes the intellectual capacities of pre-schoolers, helping them to understand, communicate effectively, be creative and innovative. As a result of the experiment and the obtained results, it was possible to learn and apply to the group some creative working methods, which do not seem to apply to their age (panel discussion, for example). It has been observed that the emergence of a creative motivation in students, for knowledge and self-awareness, has favored the development of personality traits specific to creative people: confidence in their strengths, independent thinking, and sensitivity to problems. Preschoolers have proven that when they invest sufficient energy in learning and actively engaging in it, the process becomes enjoyable and gives rise to a sense of fulfillment. The results of the study initiated by Dere (2019) showed that the results showed that the preschool curriculum contributed to improving children's creativity in a positive way. Learning based on active-creative strategies is leading to maintaining a permissive climate based on dialog and mental freedom, through democratic leadership of educational activity, favorable to the creative expression of pre-schoolers, giving them freedom of thinking and acting.

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