

## INFLUENCE OF PSYCHOLOGICAL CONDITIONS ON THE LEVEL OF CREATIVE IMAGINATION

Svitlana KRYSHтанOVYCH <sup>1,\*</sup>, Valentyna BILYK<sup>2</sup>, Olena MATVIENKO<sup>3</sup>,  
Liudmyla STEPANENKO<sup>4</sup>, Hanna TSVIETKOVA<sup>5</sup>

<sup>1</sup>*Department of Pedagogy and Psychology, Faculty of Postgraduate and Correspondence Education, Lviv State University of Physical Culture, Kostushka str. 11, 79000 Lviv, Ukraine*

<sup>2</sup>*Department of Medical-Biological and Valeological Fundamentals of Health Education and Physical Education, Faculty of Physical Education, Sports and Health, National Pedagogical Drahomanov University, Pyrogovo str. 9, 02000 Kyiv, Ukraine*

<sup>3</sup>*Department of Pedagogy and Methods of Primary Education, Faculty of Pedagogy and Psychology, National Pedagogical Drahomanov University, Pyrogovo str. 9, 02000 Kyiv, Ukraine*

<sup>4</sup>*National Academy of Government Managerial Staff of Culture and Arts, Lavraska str. 9, 02000 Kyiv, Ukraine*

<sup>5</sup>*Department of Pedagogy and Psychology of Preschool Education and Children's Creativity, Faculty of Pedagogy and Psychology, National Pedagogical Drahomanov University, Pyrogovo str. 9, 02000 Kyiv, Ukraine*

Received 25 June 2021; accepted 22 December 2021

**Abstract.** The main purpose of the study is to determine the influence of psychological conditions on the development of creative imagination. As a result of research, we applied several key methods that allowed us to achieve this goal. First of all, it is a method of theoretical analysis and synthesis. Also, methods of correlation analysis and a number of empirical methods were used for the existing experimental group (observation, conversation, questionnaire, testing). The analysis of the psychological conditions of the correlation matrix showed that there is a noticeably high connection between the influences of psychological conditions on the development of creative imagination, thereby confirming our assumption. According to the results of the study of the development of creative imagination, the dominance of the middle and low levels of its development was established. In addition, the criteria of creative imagination were diagnosed, which included the originality of images, flexibility of images, performance of images, speed of the created image. It was found that the most developed is the originality of images, the least developed is the performance of images.

**Keywords:** creative imagination, creativity, imagination, psychological conditions, relationship.

### Introduction

In a modern society, the education system should be focused on creating conditions for the development and self-realization of the child's personality, where one of the most important

---

\*Corresponding author. E-mail: [skrischtanovich@gmail.com](mailto:skrischtanovich@gmail.com)

tasks of working with children is the development of imagination, which largely determines the cognitive, emotional and personal development of children. An urgent problem of modern pedagogy and psychology is the development of children's creativity, which sets the main goal for the education system – to educate the younger generation of a creative approach to transforming the world around them, active and independent thinking, contribute to the achievement of positive changes in the life of society. For the development of modern society, not only knowledgeable people are needed, but also creatively aware of their work, with high creative abilities and the ability to apply it in practice. Society's progress depends on creative people. Consequently, the formation of a creative personality capable of quickly navigating in various life situations, acting proactively and creatively is an important task of modern education. An integral property of a creative personality is creative imagination, the sensitive period for the development of which preschool age is reasonably considered.

In human life, imagination performs a number of specific functions (Duffy, 2006).

The first function of the imagination is to regulate emotional states. With the help of his imagination, a person is able to at least partially satisfy many needs, relieve the tension generated by them. This vital function is especially emphasized and developed in psychoanalysis.

The second function of imagination is associated with its participation in the arbitrary regulation of cognitive processes and human states, in particular perception, attention, memory, speech, emotions. With the help of skillfully evoked images, a person can pay attention to the necessary events. Through images, he gets the opportunity to control perception, memories, statements.

Finally, the third function is planning and programming activities, drawing up such programs, assessing their correctness, and the implementation process.

With the help of imagination, we can control many psychophysiological states of the body, tune it to the upcoming activity. There are also known facts indicating that with the help of imagination, by a purely volitional way, a person can influence organic processes: change the rhythm of respiration, pulse rate, blood pressure, body temperature. These facts underlie auto-training, which is widely used for self-regulation (Kryshtanovych et al., 2021).

The main purpose of the study is to determine the influence of psychological conditions on the development of creative imagination.

## 1. Literature review

Sensations and perceptions are the suppliers of the so-called “primary” images, which reflect objects and situations that a person encounters in the course of his practical activity. Unlike sensory-perceptual processes, mnemonic processes (first of all, figurative memory) ensure the formation and preservation of “secondary” images of really existing objects and phenomena. Like memory, imagination is a functional organ for generating ideas. How creative imagination can change the worldview and affect the general development of a child cannot be conveyed in ordinary words and this is the attention of scientists all over the world (Abbas & Raja, 2015; Bycroft, 2012).

The structure of the mental state was the study of Ganzen (2000). He described a four-level structure of the state: socio-psychological, which characterizes personality behavior, psychological, characterizing changes in mental functions and mood of a person, psychophysiological, describing autonomic reactions, changes in psychomotor, sensory, and physiological, which provides for neurophysiological characteristics, morphological and biochemical changes, shifts in physiological functions.

The basic aspects of the very concept of creativity have also been the focus of a large number of scientists. In particular, Sternberg and Lubart (2002) examined the basic elements of the essence of creativity and its importance to society. Byrge and Tang (2015) investigated the characterizing features of creative training implementation and its effect on creative self-efficacy. In general, to consider the phenomenon itself as the influence of creativity on any spheres of human activity, there is a significant scientific background, scientists such as Galton and Page (2015), who investigated the impact of their creative initiatives on welfare. Root-Bernstein and Root-Bernstein (2006) investigated the characteristics of the influence of children's creativity on the life of adults.

There is no disagreement about how creativity affect the learning system. For example, even in surgery (Langebæk et al., 2020; Dickhut, 2003) only proves the fact that creativity is possible everywhere and at all levels.

Baumeister et al. (2017) examined the key aspects of creativity in psychology. The purpose of studying the psychology of creativity is to promote the active implementation of the latest theoretical and experimental knowledge in practical educational and scientific activities, as well as self-development for self-realization of the individual in the process of creative professional activity and eternal activity.

If we talk about the aspects of our direct research, then we can say that the problems of the aspects of improving the creative imagination for children are a very delicate scientific problem that requires a special approach. That is why this question is very topical. For example, one can highlight the contribution of Gündoğan (2019) and Gündoğan et al. (2013), which considered this aspect of the problem.

It is impossible to fully appreciate how creativity changes children and makes them better and unique. As noted in the study by Ben-Arieh and Frønes (2011), this essentially changes their overall well-being. Barnes (2014) noted that drama is important in promoting the social and personal well-being of six and seven year olds with communication difficulties.

The question often arises: "Is it possible to consider as creative activity and imagination talentedly thought out and committed crimes or new ideas and inventions directed against the peace and well-being of mankind?". Those who believe that real creativity should contribute to the development of the human personality, human culture (such an absolute majority) insist on the introduction of the criterion of humanity and progressiveness. Summarizing, we note that creative activity is a form of human activity aimed at creating qualitatively new social and personal values. And today it is the most relevant in the fields of research. Taking into account the scientific growth in the study of the peculiarities of psychology and its influence on creativity, we took this into account for our own research, and that is why, as the goal of our analysis, we chose the very definition of the influence of psychological conditions on the development of creative imagination.

## 2. Methodology

As a result of our research, we applied several key methods that allowed us to achieve this goal.

First of all, it is a method of theoretical analysis and synthesis. The generalization of scientific research in the context of the problematics of our research provides grounds for classifying already certain patterns as psychological conditions for the development of the creative imagination of older preschoolers.

Thus, the methodology includes methods of empirical and correlation research, as well as a method for assessing respondents using qualitative indicators.

On the basis of theoretical analysis, we assumed that psychological conditions can be: 1) the development of cognitive processes and attention (productivity and stability of attention, accuracy of memorization, independence of inference, ability to generalize, establishment of cause-and-effect relationships); 2) the development of speech (sufficient vocabulary, its imagery, the use of artistic means of broadcasting, non-standard statements, detailing of images); 3) the internal motivation of the older preschooler to creativity (the presence of cognitive interest, the emotional orientation of the creative process); 4) internal action plan.

Also, for the existing experimental group, methods of correlation analysis and a number of empirical methods (observation, conversation, questioning, testing) were used. The group was formed among children of senior preschool age of a kindergarten, which is located on the territory of Ukraine. Everything happened in an ethical and confidential manner. The entire process of passing the survey was agreed in writing with the administration of the kindergarten and the parents of the children who took part in the education. The experimental sample consisted of 230 children of senior preschool age. All children who took part in the survey were of approximately the same age, gender distribution and educational level.

For the diagnosis of psychological states, we chose subjective-evaluative assessment methods, which were methods in the form of a questionnaire.

The data obtained as a result of an experimental study (survey) of the first group of psychological states “Development of Cognitive Processes and Attention” are presented in Table 1.

Table 1. Quantitative characteristics of empirical results of diagnostic tools in children

	A group of 230 respondents			
Psychological conditions “Development of Cognitive Processes and Attention”	Thinking	High	31	13.%
		Average	105	46.1%
		Low	93	40.9%
	Speech	High	31	13%
		Average	102	44.8%
		Low	98	42.2%
	Attention performance and sustainability	High	30	13.5%
		Average	103	44.3%
		Low	96	42.2%
	Memory	High	33	13.9%
		Average	103	45.2%
		Low	95	40.9%

To study the development of cognitive processes, which we consider as one of the psychological conditions for the development of creative imagination, the following methods were used, which became components of our diagnostic experiment: the “Invent a Story” and “Tree of Desires” techniques (assessment of a story with manifestations of imagination: the speed of inventing; originality of the plot; variety of images; detailing images, the presence of their characteristics), the method “Find and Cross Out” (the level of development of attention in children is determined), the test “Remember 10 Words” (the level of memory development is determined), the method “Sequence of Events” (the level of development of thinking is determined), “Rearrangement of Matches” technique (assessment of the ability to find and use the formative (integrally forming) element during the transformation of one image into another).

### 3. Research results

As a result of the analysis of the data obtained using the “Find and Cross Out” method to determine the level of attention development in older preschoolers, it was found that involuntary attention predominates in the surveyed respondents, with a transition to voluntary attention. Voluntary attention arises on the basis of involuntary, subject to motivation and interest in the specified activity. In a significant number of children, during the performance of the task, insufficient concentration and stability of attention was observed, they were often distracted by external stimuli. In general, 13.5% of children have a high level of attention development, an average level of 44.3% of children, and a low level of 42.2% of children. While observing children in the process of completing assignments, children felt tired when performing the same actions for a long time (Figure 1).

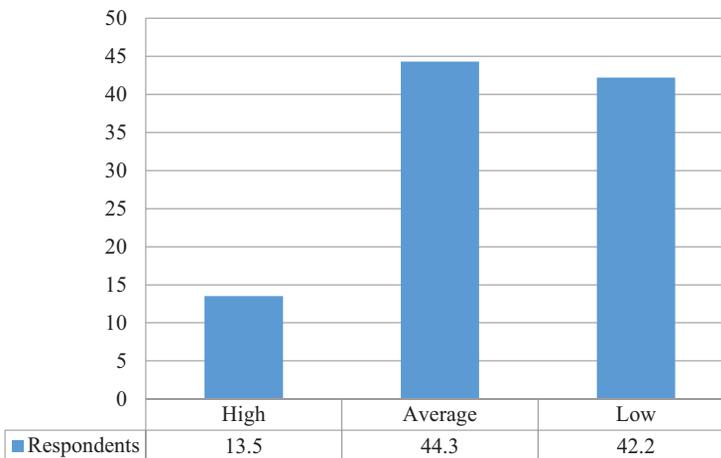


Figure 1. Quantitative indicators of the level of development of attention according to the method “Find and Cross Out”

The results of the study, obtained according to the “Remember 10 Words” method, which were carried out in order to diagnose the development of memory in older preschool children, testified to the average level of development of this cognitive process (45.2%), the low level was 40.9%, only 13.9% of preschoolers are at a high level.

When diagnosing, we identified a negative factor, which consisted in the fact that the overwhelming number of children could not complete the task both according to the model and without it; show independence, a desire to overcome difficulties without the help of an adult, and the like. As a rule, these children did not possess the operations of comparison, analysis, synthesis, and so on. The low percentage of the formation of cognitive independence is explained by the fact that its formation, as a rule, is carried out spontaneously and insufficiently purposefully.

To determine the level of development of thinking, we used the “Sequence of Events” methodology. Before completing the task, the child must understand the plot and build the correct sequence of events by composing a story from pictures. For this, the preschooler must have a process of generalization and understanding of cause-and-effect relationships. A qualitative analysis showed that after receiving an assignment to examine the pictures and arrange them in the correct sequence, accompanied by a verbal description, a significant part of the children (40.9%) could not correctly complete the assignment. The sequence was broken, the instructions were repeated to the children several times. Most of the children (46.1%) had an average level of development. When completing the tasks, the children needed help, but there is an independent description of the characters with their detailing. The children missed some moments of the description, the imagery of the language took place. Basically, the stories were composed of an adventure and everyday plot. According to this method, 13% of children had a high level, who were characterized by the ease of assembling stories. They were active and tried to prompt others in addition to their own version of stories. The story had composition and was detailed from characters to secondary subjects in the pictures. The plot of the stories was adventurous and fabulous. The children made the sequence of pictures correctly. During the assignment, there were children; they added their own details to the existing composition, which were needed to complete the story.

To establish the relationship between the development of cognitive processes with the level of development of creative imagination and its originality, flexibility, speed, productivity, we carried out a correlation analysis using the  $r$  – Spearman’s rank correlation coefficient method. Data processing was carried out on the basis of the *SPSS 21* statistical software package.

Having two series of values during preliminary diagnostics (indicator of the development of creative imagination and indicators of development according to conditions), we assumed the presence of a connection between them and calculated the correlation coefficient, which showed us how they are interrelated, since the correlation confirms the fact that changes in one trait are certain way lead to a change in the other. The analysis of the data obtained showed a positive correlation between the indicators “General Level of Development of Creative Imagination” and the psychological condition “Development of Cognitive Processes and Attention” – attention ( $r = 0.752$  at  $p \leq 0.01$ ). Significant interrelationships of the aforementioned position on such cognitive processes as attention (speed of created images –  $r = 0.651$

at  $p \leq 0.01$ ; flexibility of images –  $r = 0.781$  at  $p \leq 0.01$ ; originality of images –  $r = 0.723$  at  $p \leq 0.01$  productivity of images –  $r = 0.704$  at  $p \leq 0.01$ ). A positive correlation was found between the indicators “General Level of Development of Creative Imagination” and “Memory” ( $r = 0.749$  at  $p \leq 0.01$ ) and between the criteria of creative imagination (speed of created images –  $r = 0.652$  at  $p \leq 0.01$ , flexibility of images –  $r = 0.737$  at  $p \leq 0.01$ ; originality of images –  $r = 0.699$  at  $p \leq 0.01$ ; performance of images –  $r = 0.675$  at  $p \leq 0.01$ ).

Analysis of the table of correlations between the indicators “General Level of Development of Creative Imagination” and the psychological condition “Development of Thinking” –  $r = 0.818$  at  $p \leq 0.0$ . Correlation analysis between the criteria of creative imagination and the psychological condition “Development of Thinking” showed that reliable direct correlations were revealed between them, where (speed of created images –  $r = 0.685$  at  $p \leq 0.01$ ; flexibility of images –  $r = 0.773$  at  $p \leq 0.01$ ; originality of images –  $r = 0.77$  at  $p \leq 0.01$ ; performance of images –  $r = 0.779$  at  $p \leq 0.01$ ). In the process of diagnostics, it was stated that with low indicators of the productivity of creative imagination, originality, flexibility in children, an insufficient level of development of such mental processes as visual-figurative and verbal-logical thinking, insufficient formation of voluntary attention, mediated memorization, and the like were revealed. The development of creative imagination is closely related to the course of the child’s cognitive development. A positive correlation was established between the indicators of the general level of development of creative imagination and the psychological condition for the development of cognitive processes and attention – the development of speech  $r = 0.818$  at  $p \leq 0.01$ ; development of thinking ( $r = 0.813$  at  $p \leq 0.01$ ) development of attention ( $r = 0.752$  at  $p \leq 0.01$ ) development of memory ( $r = 0.749$  at  $p \leq 0.01$ ), speech development ( $r = 0.818$  at  $p \leq 0.01$ ).

Thus, the results obtained indicate that cognitive processes are inextricably linked with imagination, evoking emotions, realized on the basis of freedom. Indeed, in order to satisfy his needs, the child is actively involved in the world around him, pays attention to various surrounding objects, gets experience and combines images of the imagination. Cognitive processes act as integral internal factors for the creative process. Creative activity depends on the variety and richness of the child’s experience. The richer the experience and the wider the spectrum of impressions, emotional memories, the more material for creative imagination. Thus, we can assume that one of the psychological conditions for the development of creative imagination can be the development of cognitive processes and attention. The development of speech, which, according to our assumptions, is one of the psychological conditions for the developed creative imagination, we diagnosed, recall, using the diagnostic technique “Think of a Story”.

The results obtained indicate a predominantly low level of development of creative imagination, a high level is 13% of respondents, an average level is 44.8%, a low level is 42.2%. We found that during the assignment, the children did not always fit into the time limit; often repeated; the variety of images was virtually absent; during the story, different emotional saturation was observed, children with a small vocabulary and life experience stood out noticeably. In the process of diagnostics, we drew attention to the fact that children who have well-developed means of broadcasting feel freer, more confident, they are the first to take the initiative and make sure that everything, down to the details, they tell, was recorded. Some of the respondents, after coming up with stories, supplement it with a drawing (Figure 2).

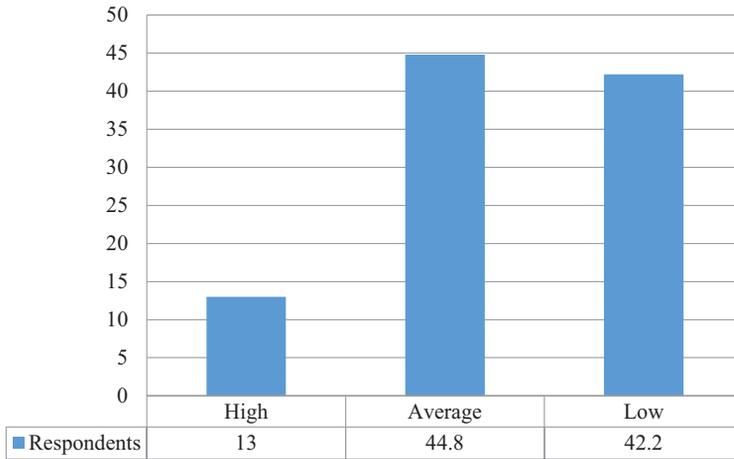


Figure 2. Quantitative indicators of speech development by the method of “Invent a Story”

The diagram shows that the average and low levels of development of creative imagination are practically on the same level. Let us turn to the analysis of correlations between the assumptions of the psychological condition and with its integral indicators. The results obtained indicate the height and strength of the relationship between the general level of creative imagination and the development of speech ( $r = 0.818$  at  $p \leq 0.01$ ), which indicates a noticeable significance in the older preschool age of language and speech for the effectiveness of creative imagination. At the same time, the analysis of correlation revealed the greatest significance of speech for the flexibility of images of creative imagination ( $r = 0.822$  at  $p \leq 0.01$ ), originality of images ( $r = 0.768$  at  $p \leq 0.01$ ) and performance of images ( $r = 0.751$  at  $p \leq 0.01$ ). The results for the criterion of the speed of the created images are somewhat lower ( $r = 0.692$  at  $p \leq 0.01$ ). This is due to the ability of children to significantly detail images, or the lack of motivation to produce an image. Correlation analysis showed that the development of creative imagination is in direct relationship with speech and depends on it.

The qualitative characteristics of these children indicate such features as independence in creating a certain image depending on the plot, an internal position on creative activity, a combination of images to create a product of creative imagination. Thus, the correlation analysis showed a close connection between creative imagination and the development of speech, it can be a psychological condition for the development of the creative imagination of older preschool children.

The development of the senior preschooler’s internal motivation for creativity, according to our assumptions, is one of the psychological conditions for the development of creative imagination. Recall that this psychological condition was investigated using the diagnostic techniques of “Invent a Story” and “Tree of Desires”, the data obtained are presented in Table 2.

Table 2. Quantitative characteristics of empirical results of diagnostic tools

	Level	Number of respondents	%
"Invent a Story"	High	32	14.3
	Average	104	44.7
	Low	95	40.9
"Tree of Desires"	High	31	13
	Average	107	46.1
	Low	93	40.9

The qualitative characteristic of the hypothetically proposed psychological condition "The Development of the Internal Motivation of the Older Preschooler to Create" is characterized by the child's interest in any type of activity, the urge to action, the need for cognition and activity, the search for new knowledge. The criterion is curiosity. This criterion accumulates a positively active attitude towards creative activity and its motivation.

The analysis of the obtained results showed that on the scale of "Cognitive Interest" the average level (46.1%) prevails with the transition to a low (40.9%) level. Children with a high level (13%) clearly expressed a cognitive need; there was a significant number of accompanying questions that were asked by them not to attract attention, but precisely to find out what interested them. Children were interested in the unknown subject and actively experimented with the information received. At the average level of development of the motivational criterion, the respondents showed activity and interest only in certain situations and in selective questions. A small number of questions were observed, as evidenced by a slight interest and desire to know it. Children were actively involved in work, but when difficulties arose, they lost interest. It was difficult for them to get interested in a new subject. The manifestations of activity towards experimentation from the outside are not very expressive, if the action plan for the children was not planned, the children did not show much interest in solving the problem. The indicator of children with a low level of the motivational criterion after calculating the data was 40.9%. Children behaved passively and indifferently to the situation that was happening. They showed no interest in the conversation. Some refused to communicate, citing the fact that it was boring. Thus, these results show that the groups of children with an average and low level of development of the motivational criterion are numerous. "Emotionality of Imagination" is characterized by a positive attitude to the objects of creative imagination; emotional attitude to the process of creative activity, the presence of a positive emotional heuristic, the emotionality of the forecast and interest and delight in the creation of creative images. To diagnose the emotionality of imagination, we used the "Invent a Story" technique. According to which a high level of positive attitude to the objects of creative imagination is inherent in 14.3% of children from the experimental group (group of respondents). This means that there is a pronounced confidence in their creative product and the support of an adult who fantasizes with the child. The indicators of the average level prevail and make up 44.7% in the experimental group. These children are characterized by dissatisfaction with some elements of their creative product. Children react negatively to praise and admiration for another created object. The low level is present in 40.9% of the

studied experimental groups. These results indicate that preschoolers are afraid to fantasize, because negative attitudes, or simply ignoring their creative images, caused them to fear ridicule and rejection.

The category of children with a positive emotional attitude to the creative process is characterized by a pronounced desire for creative activity in any of its manifestations. Medium and low levels are predominant. Indicators of the middle and low level are increasing, which indicates the inability of children to design a creative image and present its final result. The obtained quantitative data indicate the absence of emotional pleasure from the creative process in children. The psychological conditions of this group are characterized by the ability to perform tasks of creative content in an original and independent way, to activate the creative imagination due to non-standard thinking processes and the brightness of images.

The results obtained showed a close correlation between the general indicator of the development of creative imagination and the psychological conditions of its development. The high connection between the emotionality of imagination ( $r = 0.818$ , at  $p \leq 0.01$ ) is explained by the fact that at this age involuntary cognitive processes play a significant role, and their effectiveness, in fact for all these processes, is directly related to the emotional factor. Thus, in working with this age category, it is necessary to fully use the emotional aspects to ensure the effectiveness of creative imagination, and at the same time work on the development of arbitrary cognitive processes, the sensitivity of which for preschool age has been proven by psychological science. The criteria of creative imagination with the emotionality of imagination are in close positive relationship. The results obtained (flexibility of images –  $r = 0.822$ , at  $p \leq 0.01$ ; originality of images –  $r = 0.769$ , at  $p \leq 0.01$ ; performance of images –  $r = 0.751$ , at  $p \leq 0.01$ , speed of created images –  $r = 0.692$ , at  $p \leq 0.01$ ) indicate that the success of any child's activity depends on the positive emotional background and the general emotional state of the child at the time of work. An important component in taking into account this condition is a positive attitude towards the objects of creative imagination at the moment of activity and in the process of creativity as a whole. Cognitive interest, which is an integral element of the psychological orientation, also ( $r = 0.817$ , at  $p \leq 0.01$ ) turned out to be a significant factor in the effectiveness of the creative imagination of a preschooler. In the process of correlation analysis, positive correlations were revealed between all criteria of creative imagination and the above psychological condition, in particular, cognitive interest and originality of imaginary images correlate at the level  $r = 0.813$  at  $p \leq 0.01$ , this indicates a fairly high level of correlation, is associated with the influence of cognitive activity on the child's experience and the activation of cognitive processes (attention, sensation, perception, memory, thinking, imagination, speech), which are characterized by anticipatory activity, and ensures the further effectiveness of these processes.

After all, the basis for further creative development and the development of original, new products of creative imagination is the timely activation of cognitive processes, ensuring an active position in relation to cognition of the surrounding world and the need for cognitive interest. Thus, the analysis of the data indicates a positive correlation between creative imagination and “intrinsic motivation for creativity”, which may be a psychological condition for the development of creative imagination.

To determine the peculiarities of the development of the “Internal Plan of Action” of senior preschoolers, as a psychological condition for the development of creative imagination, we used the “Rearrangement of Matches” technique.

The analysis of the obtained results of the quantitative characteristics showed that in 12.7% of children a high level of development was revealed according to the psychological condition “Internal Plan of Action”, in which tasks by children are solved in a figurative plan through the manipulation of representations by objects according to a pre-drawn, thoughtful and internally presented plan. The average level is 37.7% of preschoolers, who are characterized by the ability to solve a problem for a large number of manipulations with matches with the help of hands and speech. The child does not have a holistic plan of action. A quantitative analysis of this technique showed that the low level is predominant (49.6%); during the diagnosis, children showed a predominantly low assessment of the ability to search and use a form-building element during the transformation of one image into another. The overwhelming majority of the subjects completed the tasks thanks to 2–4 tests. Other children were unable to solve the problem.

To obtain reliable results of our research, it was necessary to establish the relationship between the development of creative imagination and the psychological condition “Internal Plan of Action”. The lowest correlation coefficient is between the indicator of the level of development of creative imagination and the psychological condition “Internal Plan of Action”. In our opinion, the main reason for the revealed tendency lies in the age-related characteristics of the development of this quality, since the correlation coefficient of the effectiveness of the creative imagination of a preschooler with his internal plan of action, according to experts, is not an indicator of the latter’s insignificance, but reflects the age-related characteristics of the formulation of this quality, which, according to many scientists, is a universal characteristic of human consciousness, and acts as a leading condition for the development of the intelligence of the individual.

Thus, the analysis of the correlation matrix showed that there are moderate connections between the criteria of creative imagination and the psychological condition “Internal Plan of Action”. In particular, it was stated that the strength of the relationship is reliable between the criteria for the flexibility of images –  $r = 0.601$  at  $p \leq 0.01$ ; originality of images –  $r = 0.577$  at  $p \leq 0.01$ ; performance of images –  $r = 0.556$  at  $p \leq 0.01$ ; the speed of the created images is  $r = 0.494$  at  $p \leq 0.01$ . Thus, based on the data obtained, the development of an internal plan of action is favorable for the development of the creative imagination of older preschoolers, and therefore can act as a psychological condition for the development of this phenomenon. So, concretizing the data obtained, we can distinguish the following scales, in which the correlation with the indicators turned out to be significant.

At the  $p < 0.01$  significance level, the results showed significant positive correlations between the integral indicator of creative imagination and psychological conditions.

The analysis revealed that the general level of development of creative imagination, criteria of creative imagination with psychological conditions depend, and how much these indicators correlate with each other. The data obtained allow us to draw conclusions about certain trends and the relationship between the studied personality phenomena, their mutual determination (Table 3).

Table 3. Correlation analysis matrix for the connection of the creative imagination with its criteria and psychological conditions

	A1	A2	A3	A4	A5	A6	A7	A8
Level of creative imagination	0.8	0.7	0.7	0.6	0.8	0.8	0.7	0.6
The speed of the created images	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.5
Flexibility of images	0.8	0.7	0.7	0.7	0.8	0.8	0.7	0.6
Originality of images	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.5
Image performance	0.7	0.7	0.6	0.7	0.7	0.7	0.7	0.5

\*Note: A1 – speech development; A2 – development of imagination; A3 – memory development; A4 – development of thinking; A5 – emotional imagination; A6 – cognitive interest; A7 – arbitrariness of regulation of behavior; A8 – internal plan of action.

Thus, the results obtained after the study show pronounced correlations within the limits of statistical significance. As stated, the strength and height of the relationships are reliable for all indicators and psychological conditions. Therefore, we can assume that this relationship determines a directly proportional relationship between the criteria of creative imagination and their psychological conditions. According to the analysis of the constructed and statistically confirmed psychological profiles of the personality of the older preschooler, we can identify the psychological conditions for the development of creative imagination. In our opinion, according to the results of the most significant correlations among the studied characteristics of preschool children, the formation of the child's creative imagination will be effective under the condition of the development of: speech development; internal motivation of the older preschooler to be creative; the development of cognitive processes; internal action plan.

## Discussions

Our research contributes to the development of solving problems associated with the psychological aspects of the activity of preschool children and how psychological influence can change the very structure of the child's creative perception and his particular imagination.

Many scientists devote their research to the problems of developing creativity at different levels. Like our area of research, Kryshchanovych et al. (2021) investigated the main aspects of the development of students' creativity (also in the field of education) and tried to offer their own vision of solving this problem through the mathematical apparatus. We went the other way, choosing preschool children and using the method of correlation analysis, which is more common in the scientific community.

Namely, with regard to correlation analysis, we note that it is not new in scientific research on this issue. Sanz de Acedo Baquedano and Sanz de Acedo Lizarraga (2012) have already tried to conduct a correlation and predictive study of student creativity. However, our research has a number of differences, we diagnosed the criteria of creative imagination, which included the originality of the images, the flexibility of the images, the performance of the images, the speed of the created image. It was found that the most developed is the originality of images, the least developed is the performance of images.

Aspects of psychology and creativity in educational institutions have been the attention of many scientists (Lin, 2011), in particular, Duffy (2006) considered the main aspects of creative imagination in the first lessons and its connection with psychological methods of teaching and development. We, in turn, in our experience tried to find a strong connection between the impact of psychological conditions on the development of creative imagination.

The use of specific test methods is a fairly relevant way to test the level of creative imagination. For example, Ivanov used the “Pueba de Imaginación Creativa Niños” test or the “Children’s Creative Imagination” test in his research, which as a result demonstrated the level of creative imagination. And in our opinion, only one test can not be a full-fledged indicator of the level of creative imagination. That is why we used several tests.

Children are the flowers of life and the driving force for the further development of civilization as a whole. This is the part of the population that requires close attention and constant development, including creative development. The study by Hoffmann and Russ (2012) reveals the key aspects of the problem. But in our research, unlike others, we wanted to determine the influence of psychological conditions on the development of creative imagination. As a result of our research, we applied several key methods that allowed us to achieve this goal.

## **Conclusions**

Analysis of the psychological states of the interrelation matrix showed that there is a noticeably high correlation between the influence of psychological conditions on the development of creative imagination, which confirms our assumption. So, according to the results of the experiment, the authors revealed the following results: for the development of creative imagination in children, the most significant is the development of cognitive mental processes, enrichment of children’s vocabulary and the use of artistic means, divergence of thinking, initiative and independence, creative emotionality.

It was also found that the level of development of creative imagination and its criteria are fixed: originality of images, flexibility of images, speed of image creation, performance of images cannot be satisfactory, since the vast majority of older preschoolers have an average and low level of their development. Thus, the identified indicators determine the search for ways to increase the level of development of creative imagination in older preschool children in the supernatural process, however, solving this problem requires the creation of psychological conditions for the development of this phenomenon in senior preschool institutions.

The practical significance of the results obtained lies in the possibility of applying the methodological approach for the organizations of sociological survey and preschool education. In our opinion, this study makes a significant contribution to general pedagogy in the development of creative thinking and imagination, which today is a critically important aspect of a person’s successful personal and professional self-realization.

There are limitations in research. We formed a group of respondents only from the children of a particular educational institution. Of course, psychological aspects are highly individual, so you should expand your coverage even further during your research. Not all of the conditions we have considered have been met.

## References

- Abbas, M., & Raja, U. (2015). Impact of psychological capital on innovative performance and job stress. *Canadian Journal of Administrative Sciences*, 32(2), 128–138. <https://doi.org/10.1002/cjas.1314>
- Barnes, J. (2014). Drama to promote social and personal well-being in six- and seven-year-olds with communication difficulties: The *Speech Bubbles* project. *Perspectives in Public Health*, 134(2), 101–109. <https://doi.org/10.1177/1757913912469486>
- Baumeister, R. F., Schmeichel, B. J., & DeWall, C. N. (2017). Creativity and consciousness: Evidence from psychology experiments. In E. S. Paul & S. Barry Kaufman (Eds.), *The philosophy of creativity: New essays* (pp. 185–198). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199836963.003.0010>
- Ben-Arieh, A., & Frønes, I. (2011). Taxonomy for child well-being indicators: A framework for the analysis of the well-being of children. *Childhood*, 18(4), 460–476. <https://doi.org/10.1177/0907568211398159>
- Bycroft, M. (2012). Psychology, psychologists, and the creativity movement: The lives of method inside and outside the cold war. In M. Solovey & H. Cravens (Eds.), *Cold war social science: Knowledge production, liberal democracy, and human nature* (pp. 197–214). Palgrave Macmillan. [https://doi.org/10.1057/9781137013224\\_11](https://doi.org/10.1057/9781137013224_11)
- Byrge, Ch., & Tang, Ch. (2015). Embodied creativity training: Effects on creative self-efficacy and creative production. *Thinking Skills and Creativity*, 16, 51–61. <https://doi.org/10.1016/j.tsc.2015.01.002>
- Dickhut, J. E. (2003). *A brief review of creativity*. <http://www.personalityresearch.org/papers/dickhut.html>
- Duffy, B. (2006). *Supporting early learning. Supporting creativity and imagination in the early years*. V. Hurst & J. Joseph (Series Eds.). Open University Press.
- Galton, M., & Page, Ch. (2015). The impact of various creative initiatives on wellbeing: A study of children in English primary schools. *Cambridge Journal of Education*, 45(3), 349–369. <https://doi.org/10.1080/0305764X.2014.934201>
- Ganzen, V. A. (2000). Sistematzatsiya iskhodov. In L. V. Kulikov (Ed.), *Psikhicheskiye sostoyaniya: khrestomatiya* (pp. 189–195). Piter.
- Gündoğan, A. (2019). The test of creative imagination: Making the test suitable to the age group of 5–6 years. *Early Child Development and Care*, 189(8), 1219–1227. <https://doi.org/10.1080/03004430.2017.1372429>
- Gündoğan, A., Ari, M., & Gönen, M. (2013). The effect of drama on the creative imagination of children in different age groups. *Hacettepe University Journal of Education*, 28(2), 206–220.
- Hoffmann, J., & Russ, S. (2012). Pretend play, creativity, and emotion regulation in children. *Psychology of Aesthetics, Creativity, and the Arts*, 6(2), 175–84. <https://doi.org/10.1037/a0026299>
- Kryshchanovych, M., Bilyk, V., Hanushchyn, S., Sheremet, I., & Vasylenko, K. (2021). Modelling the ways to increase the creativity of psychology students as a basic factor in professional development. *Creativity Studies*, 14(1), 34–50. <https://doi.org/10.3846/cs.2021.12571>
- Langebæk, R., Tanggaard, L., Toft, N., & Berendt, M. (2020). Using creativity as an educational tool in veterinary surgery: Students' perceptions and surgical performance. *Journal of Veterinary Medical Education*, 47(1), 91–99. <https://doi.org/10.3138/jvme.1117-175r1>
- Lin, Y.-S. (2011). Fostering creativity through education – a conceptual framework of creative pedagogy. *Creative Education*, 2(3), 149–155. <https://doi.org/10.4236/ce.2011.23021>
- Root-Bernstein, M., & Root-Bernstein, R. (2006). Imaginary worldplay in childhood and maturity and its impact on adult creativity. *Creativity Research Journal*, 18(4), 405–425. [https://doi.org/10.1207/s15326934crj1804\\_1](https://doi.org/10.1207/s15326934crj1804_1)
- Sanz de Acedo Baquedano, M. T., & Sanz de Acedo Lizarraga, M. L. (2012). A correlational and predictive study of creativity and personality of college students. *The Spanish Journal of Psychology*, 15(3), 1081–1088. [https://doi.org/10.5209/rev\\_SJOP.2012.v15.n3.39398](https://doi.org/10.5209/rev_SJOP.2012.v15.n3.39398)
- Sternberg, R. J., & Lubart, T. I. (2002). The concept of creativity: Prospects and paradigms. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 3–15). Cambridge University Press. <https://doi.org/10.1017/CBO9780511807916.003>