



STUDYING THE DEGREE OF CREATIVITY OF PRESCHOOL CHILDREN DRAWINGS

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Abstract. Our purpose is to offer children tasks so they can make drawings as diverse and different from each other whilst trying to avoid imitation. Achieving this goal involves the increase of children's creativity. The paper is theoretically based on the consideration of creativity as the ability to create *something new, original, and in accordance with reality* (Mihaela Roco, 2004; H. Jaoui, 1975; Al. Roșca, 1981; Margaret A. Boden, 1992). The study focuses on *expressive creativity*, characterized by spontaneity and unconditioned freedom of expression, skills, all highlighted by the children's drawings. *The research hypothesis* is that: If students are given new information on various opportunities for diversification of a model, they will create more original drawings. *The independent variable* is the task preschoolers are given to resolve. *The dependent variable* is represented by the results of preschool children. The research was conducted at high preparatory group. The test included specific contents of several areas, such as: mathematics, decorative drawing, and practical skills. Children were involved in four experimental situations for comparative purposes, so as to assess the progress registered from one activity to another. By analyzing the results obtained from the four tests, we note that all the children progressed. They accomplished original compositions, different from each other and from those of their colleagues, yet keeping certain common features. All children have the entire range of skills with which a person can produce new and original products, so their creativity is developed to a certain level; the experimental group includes more children who proved a certain level of performance in one or more tests, so there is no single child holding maximum creative potential; hence, each child has some „patterns” or models that he/she reproduces in many of his/her drawings, nevertheless accomplishing his/her original drawings; having the fact that, each child achieved both successful and less successful designs, we cannot establish an individual steady progress; the performance of the experimental group can be correlated with the number and quality of representations that they obtained during activities in kindergarten and elsewhere. In conclusion, at the end of the research we note that, if preschoolers are given new information regarding their opportunities to diversify a model, they will create more original drawings. The research is original because it proposes new experimental tests and evaluation grids.

Keywords: test, requirements, progress, originality, variety

1. Introduction

During work with children, we noticed that their drawings were specific to their age and to the certain stage of development they were going through. Therefore, educators and teachers frequently propose children various tasks, which make them carry out similar work. Through this experiment, we try to focus on and explain how the task should be formulated, so as children's works become more diverse and different from each other and avoid imitation.

In our previous work, we applied experimental tests, already proposed and commented by various authors in the field. In this paper, we are interested to find new ways through which we could stimulate children's creativity, and stimulate them to create various decorative compositions, starting from a white sheet, not from a previous drawing pattern.

We also aimed to increase the degree of difficulty of the tasks and provide more guidelines or requirements to encourage children's products variety. After each test, we analyzed children's

products, paying attention to the differences between works and what guidelines or requirements were met.

The main objective of this research emphasizes on the design, organization and development of several stimulative processes to enhance creativity of preschool children through drawing, followed by analysis and interpretation of these processes and products. *The specific objectives* of this research are the following: to analyse bibliographic, psychological, pedagogical and drawing references, in terms of creativity; to identify the preschooler's creative potential; to set the psychological benchmarks to stimulate creativity of preschool children; to establish the teaching benchmarks to stimulate creativity of preschool children; to identify methods, tasks and techniques for stimulating creativity through drawing; to evaluate the creativity progress through specific drawing tasks; to synthesize the research results, and develop conclusions.

2. Theoretical background

This paper is based on several definitions of creativity. Mihaela Roco (2004) believes that *being creative* means *to create something new, original and in accordance with reality*. H. Jaoui (1975) defines creativity as „*a process of association and combination of previously known elements, in new assemblies.*” On the other hand, Al. Roșca (1981, p. 16) defines creativity as „*the capability or capacity to produce something new and valuable*”, whereas for others it represents a process by which a product is made. Much more, Margaret A. Boden (1992) considers that, generally, creativity stands for „*making new and original combinations by using old ideas*” and that such combinations should have a certain value.

J.P. Guilford has claimed that all people are creative and they can be distributed at different levels, on a continuous scale of creativity. I. A. Taylor (1959, *apud* Mihaela, Roco, 2004) distinguishes five levels of creativity: *expressive creativity, productive creativity, inventive creativity, innovative creativity and emerging creativity*. Our study focuses on expressive creativity, as the fundamental form of creativity, characterized by spontaneity and freedom of expression, which is not subject to any ability and is revealed by children's drawings.

Guilford (1967) has developed sets of tests focused on divergent thinking to measure creative behaviour. The following *factors of divergent thinking* are measured: a) *the fluency (flow)* - the ability to quickly and easily produce words, ideas, phrases, sentences, under certain conditions; b) *the flexibility* - the ability to modify and effectively restructure thinking approach in new situations, to find more diverse solutions to solve problems and make transfers; c) *the originality* - the ability to deliver new ideas, creative, unconventional, and unusual solutions that stun; d) *the elaboration* - the ability to plan an activity, taking into consideration as many details, the ability to predict the final outcome, to develop and finalize an idea; e) *the attention to problems* - the ability to easily observe the unusual phenomena, f) *the reorganization (or restructuring)* - the ability to use and object or a part of it, in a new and unusual way. In this paper we analyse the ability of children to produce their work differently from their previous works and from their colleagues by following certain guidelines provided by the teacher.

3. Major research coordinates

Research hypothesis: If children are given new information regarding their opportunities to diversify a model, they will create more original designs. We focused our attention on: the number of models created; children not to work chaotically (but without pointing out that they were working chaotically, so as to realize it on their own); how many solutions they find in the first phase and how many in the next steps, after given ideas.

Research variables. *The independent variable* is the task which is given to preschool children to solve (the requirement imposed by the activity; the characteristics of task). *The subject variable* includes: stable personality traits; age and individual particularities of each preschool child; multiple intelligences of each child; knowledge and previous experiences of each one according to area he/she comes from and previous education; active factors when carrying out the task (fatigue/tiredness, cognitive-emotional resonance to the task, prior success or failure etc.); anxiety; under- or

overvaluation of the task, etc. *The dependent variable* is the outcome (performance) of preschool children.

Venue. The research was carried out at the kindergarten of Florești village, Cluj County, in half-urban environment. In this research, we also involved Bria (Vanea) Cornelia, the educator who organized the experiments (tests) for the experimental group.

Period. The research was conducted during the 2009-2010 school year, involving the high-preparatory group.

Sample of participants. The sample was composed of 14 children (girls and boys) at high-preparatory group at the kindergarten of Florești village, Cluj County. These children meet the criteria established at the beginning of the experiment (age, attending kindergarten). The education level of children is heterogeneous in terms of intellectual possibilities.

Content sample. The content sample included subjects specific to more teaching areas: *mathematics* (horizontal, oblique, dashed, zigzag lines, and point), *decorative design* (decorative area, decorative motif, decorative line, colour, weight, decorative composition), *practical skills* (drawing horizontal and oblique lines, how to decorate a gift bag).

Methods used. As a general method of research, we used the *teaching experiment*. We started from a research hypothesis and the children were involved in four case studies and we evaluated the results using the evaluation grids. We also used *the method of observation*, when we studied the works performed by children in the four experimental situations. As a specific method of research, we used *projective techniques* when we formulated the experimental tests and the evaluation grids. These are strictly related to the research hypothesis, to the proposed tasks for children and also to the indications therein. For *collecting the information* we used references, reviewed the work products, applied the evaluation grid, and the conversation. For *processing the information* we used statistical and mathematical methods. We used various types of diagrams to present the results.

Research tools. *The tests* used in this research in experimental situations (listed below) are original. They were created based on our previous research conducted with preschoolers, at high preparatory group. *The evaluation grids* (described below), with which we evaluated the products made by children, are original. They are correlated with the work hypothesis, the characteristics of children task (in the four experimental situations), particularly, and with the indications given to children so as to make the required products.

Table 1. The evaluation grid of the results from the experimental tests 1A, 1B and 2A

Name	Level of originality		Designing the decorative motif		Lines					
	different from each other 1-4 p	different from those of their colleagues 1-4 p	1-2 colours 1 p	More colours 0.5 p	Position		Weight		Colours	
					Horizontal 1 p	Curved 0.5 p	Different 1 p	Equal 0.5 p	Different 1 p	The same colour 0.5 p

Table 2. The evaluation grid of the results from the experimental test 2B

Name	Level of originality		Designing the decorative motif		Lines													
	different from each other	different from those of their	1-2 colours 1 p	More colours 0.5 p	Position		Weight		Colours		Dashed 1 p	Alternating motifs - dashed lines	Snapped lines	Motifse on	Zig zag 1 p	Geometrical figures	Crossed	Total score
					Horizontal 1 p	Curved 0.5	Different 1 p	Equal 0.5 p	Different 1 p	The same colour								

Stages of the formative experiment. Children were involved in four experimental situations for comparative purposes so as to assess progress from one activity to another.

Experimental situation no. 1A. Children were asked to make four sides of a gift bag (sheet in vertical position), different from each other, in which they should obligatorily combine: a decorative motif they created on their own, in a single or two colors (optional) and straight lines of different weight and colour in horizontal position.

Experimental situation no. 1B. Children were asked to make four sides of a gift bag (sheet in vertical position), different from each other, in which they should obligatorily combine: a decorative motif in a single or two colours (optional) and straight lines of different weight and colour in vertical position. Unlike the previous case (mentioned above), they were given indications that they could use: continuous or dashed lines (assuming that in the previous situation they did not realize that they could use dashed lines); that they can alternate the dashed lines with the decorative motifs; that they can snap lines to each other (without any space between them); that the lines on one side of the bag may have different weight and the distance between them can vary; that they can apply decorative elements on the lines. The purpose of these guidelines was to help them create new models (checking the hypothesis of research).

Experimental situation no. 2A. Children were asked to make four sides of a gift bag (sheet in vertical position), different from each other, in which they should obligatorily combine: a decorative motif in a single or two colours (optional) and straight lines of different weight and colour in an oblique position.

Experimental situation no. 2B. Children were asked to make four sides of a gift bag (sheet in vertical position), different from each other, in which they should obligatorily combine: a decorative motif in a single or two colours (optional) and straight lines of different weight and colour in oblique position. Unlike the previous case, they were given indications that they could use: continuous or dashed lines (assuming that in the previous situation they did not realize that they could use oblique dashed lines); that they can alternate the oblique dashed lines with the decorative motifs; that they can snap the oblique lines to each other (without any space between them); that the oblique lines on one side of the bag may have different weight and the distance between them can vary; that they can apply decorative motifs on the oblique lines; that they can use zigzag lines and create a zigzag (we drew a zigzag design on the blackboard); that they can create geometric shapes by using oblique lines or decorative motifs (we did not draw on the board; they could make a rhombus, and also parallelograms and triangles, yet not horizontally positioned); that they can place the decorative motifs so as to form diagonal lines; that they can snap the oblique lines to the decorative motifs; that they can overlap the decorative elements; that they can intersect the oblique lines so as to create models (we drew on the board two diagonal lines that intersect, so as to be clear).

The work done by children was assessed using the evaluation grids.

4. Presenting the educational activities

Experimental situation no. 1A. The research objectives were the following: to analyse children's ability to draw horizontal lines; to analyse children's ability to create four different models, each

including a decorative motif created by them in one or two colours (optional) and straight lines of different weight and colour, in horizontal position. *Materials and tools* were the following: four white sheets of paper, crayons, and markers. *Time resources*: 50 minutes. If preschool children were creative and did not have enough time to finish their tasks, then we gave them extra time. Children were given the *task*: children should make as many sides of gift bags as they can (sheet in vertical position), different from each other, in which they will mandatorily combine: a decorative motif made by them, in a single or two colours (their choice) and straight lines of different weight and colour, **in horizontal position**. They had to follow *the requirements*: not to look at their mates' works and not to imitate them; however, if they look, then not to use the models created by their colleagues; not to agglomerate their sheets with decorative motifs, but to try and create a beautiful model. Much more, on the back of the sheet, we wrote the initial of the family name and the whole first name of the child.

Experimental situation no. 1B. *The research objectives* were the following: to analyse children's ability to draw horizontal lines; to analyse children's ability to create four different models, each including a decorative motif created by them in one or two colours (optional) and straight lines of different weight and colour, in horizontal position; to analyse children's ability to create new models after receiving guidelines (to use dashed lines, snapping lines, different distances between the lines, the overlap of decorative elements on the lines). *Materials and tools* were the following: four white sheets of paper, crayons, and markers. *Time resources*: 50 minutes. If preschool children were creative and did not have enough time to finish their tasks, then we gave them extra time. Children were given the *task*: children would make as many sides of gift bags as they can (sheet in vertical position), different from each other, in which they will mandatorily combine: a decorative element previously made by them, in a single or two colours (their choice) and straight lines of different weight and colour, **in vertical position**. Children were asked to follow *certain instructions*: to use continuous or dashed lines (assuming that in the previous situation they did not realize that they could use dashed lines); they can alternate decorative elements with the dashed lines; they can snap lines one to each other (no space between them); lines on one side of the bag may have different weight whereas the distance between them can be different; decorative elements can overlap the lines. While they were working, we mentioned again these opportunities for them to exploit. Children were asked to follow *certain requirements*: not to look at their mates' works and not to imitate them; however, if they look, then not to use the models created by their colleagues; not to agglomerate their sheets with decorative elements, but to try and create a beautiful model.

Experimental situation no. 2A. *Materials and tools* were the following: four white sheets of paper, crayons, and markers. *Time resources*: 50 minutes. If preschool children were creative and did not have enough time to finish their tasks, then we gave them additional time. Children were given the *task*: children would make as many sides of gift bags as they can (sheet in vertical position), different from each other, in which they will mandatorily combine: a decorative element made by them, in a single or two colours (their choice) and straight lines of different weight and colour, **in oblique position**. They were asked to follow *certain instructions*: not to look at their mates' works and not to imitate them; however, if they look, then not to use the models created by their colleagues; not to agglomerate their sheets with decorative elements, but to try and create a beautiful model.

Experimental situation no. 2B. *Materials and tools* were the following: four white sheets of paper, crayons, and markers. *Time resources*: 50 minutes. If preschool children were creative and did not have enough time to finish their tasks, then we gave them extra time. Children were given the *task*: children would make as many sides of gift bags as they can (sheet in vertical position), different from each other, in which they will mandatorily combine: a decorative element previously made by them, in a single or two colours (their choice) and straight lines of different weight and colour, **in oblique position**. Children were asked to follow *certain instructions*: to use continuous or dashed lines (assuming that in the previous situation they did not realize that they could use dashed lines); they can alternate decorative elements with the oblique dashed lines; they can snap the oblique lines (no space between them); on one side of the bag lines may have different weight whereas the distance between them can be different; decorative elements can overlap the oblique lines; they can use dashed lines and create a zigzag (we drew a small zigzag on the board, so as to be clear); they can create geometric shapes by using oblique lines or decorative elements (we did not draw on the table; they could create

rhombus and also parallelograms and triangles, yet not horizontally positioned); they can place the decorative elements so as to form oblique lines; they can snap the oblique lines to the decorative elements; they can overlap the decorative elements; they can intersect the oblique lines so as to create models (we drew on the board two oblique lines that intersect, so as to be clear).

While they were working, we repeated these options for them to exploit. Children were asked to follow the *instructions*: not to look at their mates' works and not to imitate them; however, if they look, then not to use the models created by their colleagues; not to agglomerate their sheets with decorative elements, but to try and create a beautiful model.

5. Presentation of research results

The following tables present the results of children, assessed by using the evaluation grid:

Table 3. Results from the experimental test 1A.

Name	Level of originality		Creation of decorative motif		Lines					
	different from each other 1-4 p	different from their colleagues 1-4 p	1-2 colors 1 p	More colours 0.5 p	Position		Weight		Colours	
					Horizontal 1 p	Curved 0.5 p	Different 1 p	Equal 0.5 p	Different 1 p	The same colour 0.5 p
Andrei	4	4	1	-	-	0.5 p	-	0.5 p	1	-
Rareș	4	4	1	-	-	0.5 p	1	-	1	-
Medeea	4	4	1	-	-	0.5 p	1	-	1	-
Fabian	4	4	1	-	-	0.5 p	-	0.5	1	-
Tania	4	4	1	-	-	0.5 p	1	-	1	-
Lavinia	4	4	1	-	-	0.5 p	1	-	1	-
Andreea	4	4	1	-	-	0.5 p	1	-	1	-
Heidi	4	4	1	-	-	0.5 p	1	-	1	-
Timotei	4	4	1	-	-	0.5 p	1	-	1	-
Ștefania	4	4	1	-	-	0.5 p	1	-	1	-
Rafael	4	4	1	-	-	0.5 p	1	-	1	-
Fabian R.	4	4	1	-	-	0.5 p	1	-	1	-
Emanuel	4	4	1	-	-	0.5 p	1	-	1	-

Table 4. Results from the experimental test 1B

Name	Level of originality		Creation of decorative motif		Lines					
	different from each other 1-4 p	different from their colleagues 1-4 p	1-2 colours 1 p	More colours 0.5 p	Position		Weight		Colours	
					Horizontal 1 p	Curved 0.5 p	Different 1 p	Equal 0.5 p	Different 1 p	The same colour 0.5 p
Andrei	4	4	1	-	-	0.5	1	-	1	-
Rareș	4	4	1	-	-	0.5	1	-	1	-
Medeea	4	4	1	-	-	0.5	1	-	1	-
Fabian	4	4	1	-	-	0.5	1	-	1	-
Tania	4	4	1	-	-	0.5	1	-	1	-
Lavinia	4	4	1	-	-	0.5	1	-	1	-
Andreea	4	4	1	-	-	0.5	1	-	1	-
Heidi	4	4	1	-	-	0.5	1	-	1	-
Timotei	4	4	1	-	-	0.5	1	-	1	-

Ştefania	4	4	1	-	-	0.5	1	-	1	-
Rafael	4	4	1	-	-	0.5	1	-	1	-
Fabian R.	4	4	1	-	-	0.5	1	-	1	-
Emanuel	4	4	1	-	-	0.5	1	-	1	-

Table 5. Results from the experimental test 2A

Name	Level of originality		Creation of decorative motif		Lines					
	different from each other 1-4 p	different from their colleagues 1-4 p	1-2 colours 1 p	More colours 0.5 p	Position		Weight		Colours	
					Oblique 1 p	Curved 0.5 p	Different 1 p	Equal 0.5 p	Different 1 p	The same colour 0.5 p
Andrei	2	2	1	-	-	0.5	1	-	1	-
Rareş	2	2	1	-	-	0.5	-	0.5	1	-
Medeea	4	4	1	-	-	0.5	-	0.5	1	-
Fabian	4	4	1	-	-	0.5	1	-	1	-
Tania	4	4	1	-	-	0.5	-	0.5	1	-
Lavinia	4	4	1	-	-	0.5	1	-	1	-
Andreea	4	4	1	-	-	0.5	1	-	1	-
Heidi	2	2	1	-	-	0.5	-	0.5	-	0.5
Timotei	2	2	1	-	-	0.5	1	-	1	-
Ştefania	4	4	1	-	-	0.5	1	-	1	-
Rafael	4	4	1	-	-	0.5	1	-	1	-
Fabian R.	4	4	1	-	-	0.5	1	-	1	-
Emanuel	4	4	1	-	-	0.5	1	-	1	-

Table 6. Results from the experimental test 2B

Name	Level of originality		Creation of decorative motif		Lines													
	Different from each other 1-4 p	Different from their colleagues 1-4 p	1-2 colours 1 p	More colours 0.5 p	Position		Weight		Colours		Dashed 1 p	Alternation motifs - dashed lines 1 p	Snapped lines 1 p	Motifs over lines 1 p	Zig zag 1 p	Geometrical figures 1 p	Intersected 1 p	Total score
					Oblique 1 p	Curved 0.5 p	Different 1 p	Equal 0.5 p	Different 1 p	The same colour 0.5 p								
Andrei	1	1	1	-	-	0.5	1	-	1	-	-	-	1	1	1	1	1	
Rareş	1	1	1	-	-	0.5	1	-	1	-	-	-	1	1	1	1	1	
Medeea	4	4	1	-	-	0.5	-	0.5	1	-	1	1	-	1	-	-	1	
Fabian	1	1	1	-	-	0.5	1	-	1	-	-	-	1	1	1	1	1	
Tania	4	4	1	-	-	0.5	-	0.5	1	-	1	1	-	1	1	1	1	
Lavinia	4	4	1	-	-	0.5	1	-	1	-	1	1	-	1	1	1	1	
Andreea	4	4	1	-	-	0.5	1	-	1	-	1	-	1	1	1	-	1	
Heidi	1	1	1	-	-	0.5	1	-	-	0.5	1	-	1	-	-	-	-	
Timotei	4	4	1	-	-	0.5	1	-	1	-	1	-	1	1	-	-	1	
Ştefania	4	4	-	0.5	-	0.5	1	-	1	-	-	-	1	1	-	1	1	

Rafael	4	4	1	-	-	0.5	1	-	1	-	1	-	-	1	-	1	1	
Fabian R.	1	1	1	-	-	0.5	1	-	1	-	-	-	1	1	1	1	1	
Emanuel	4	4	1	-	-	0.5	1	-	1	-	1	1	1	1	-	1	1	

6. Qualitative and quantitative analysis of the experimental test results

Experimental test no. 1A.

Quantitative analysis. 13 children participated. Children created very similar models, so they have lower degree of originality. All children created their decorative motifs by using only 1-2 colours. All children drew curved lines, but they also tried to position them horizontally to the edges. Only two children drew lines of the same weight, whereas others tried to vary the weight of the lines by pressing the pens against the sheet or by getting the lines closer.

Qualitative analysis. Children's compositions are very similar to each other, most of the differences lying in the way of alternating the coloured lines. They cannot draw horizontal lines but only curved. In terms of decorative motifs, six of the children created a simple flower, three of them created a flower with stem and leaves, and one child created a spiral. Children placed their motifs in the centre of the sheet, with one exception (the spiral is placed in a corner).

Experimental test no. 1B.

Quantitative analysis. 13 children participated. Children created very similar models, so they have lower degree of originality. All children created their decorative motifs by using only 1-2 colours. All children drew curved lines, but they also tried to position them vertically to the edges. Only two children drew lines of the same weight, whereas others tried to vary the weight of the lines by pressing the pens against the sheet or by getting the lines closer.

Qualitative analysis. Children's compositions are very similar to each other, most of the differences lying in the way of alternating the coloured lines. They cannot draw vertical lines but only curved. In terms of decorative motifs, four of the children created a simple flower, six of them created a flower with stem and leaves, and one child created a spiral. Children placed their motifs in the centre of the sheet, with one exception (the spiral is placed in a corner).

Experimental test no. 2A.

Quantitative analysis. 13 children participated. Four of them created very similar models, so they have lower degree of originality. All children created their decorative motifs by using only 1-2 colours. All children drew curved lines, but they also tried to position them oblique to the edges. Only four children drew lines of the same weight, whereas others tried to vary the weight of the lines by pressing the pens against the sheet or by getting the lines closer. One child created four compositions by using only one colour.

Qualitative analysis. Children's compositions are very similar to each other, most of the differences lying in the way of alternating the coloured lines. They cannot draw oblique lines but only curved. Four of the children drew all the lines, in all four models, lines having the same orientation, which proves a high level of rigidity. Two of the children created compositions by combining continuous with dashed lines (which is not restricted but does not comply with the requirements). In terms of decorative motifs, four of the children created a simple flower, six of them created a flower with stem and leaves, and one child created a spiral. Children placed their motif in the centre of the sheet, with one exception (the spiral is placed in a corner). Six of the children intersected lines at certain points or they overlapped lines oriented in different directions (which is not restricted but does not comply with the requirements). In terms of decorative motifs, eight of the children created a flower, four of which had stems, whereas the other four did not, and one child created a butterfly, two of the children created circles, whereas one of them created a flower vase. Children placed their motifs in the centre of the sheet, with one exception (the motif is placed in a corner). However, six of the children used other motifs (various geometric figures), which means that they did not meet the requirements.

Experimental test no. 2B.

Quantitative analysis. 14 children participated. The models created by each child are much different between them and their colleagues, as compared to the previous test. All children created their decorative motifs in 1-2 colours, yet they also created and used numerous other motifs in their compositions. All children drew curved lines, but they tried to position them oblique to the edges. Eight of the children drew different lines in terms of weight, except for two children. All children drew lines of different colours. Eight of the children drew dashed lines. Four children alternated (new) decorative motifs with dashed lines. Six of the children placed the lines very close one to another (almost snapped). Nine of the children overlapped decorative motifs on the lines. Four of the children created zigzags in their compositions, whereas six of them used some geometric figures in their compositions. Nine children intersected some lines, so they represented oblique lines differently oriented.

Qualitative analysis. Children's compositions are very different one from another. They still cannot draw oblique lines but only curved. Six of the children created all models by drawing all the oblique lines, oriented in the same direction, which proves a high level of rigidity. They created compositions by alternating continuous with dashed lines but their models seem to be chaotic, random, they only adding elements, not designing the composition from the beginning. All children created a decorative motif, but one, who put a little man in the centre (this can be considered decorative motif, as well). Among the motifs children created we mention: simple flower (2), flower with stem (1) flower in a pot (2), heart (1) butterfly (1) spiral (1). Children placed their motifs in the centre of the sheet, with one exception (the heart is placed on the left side of the sheet). Children also created numerous other motifs such as: snowflakes, triangles, and hearts. However, we have to notice that they take models from their colleagues (chains of triangles, ovals, hearts, and snowflakes), therefore they tend to imitate. Still, the manner in which they combine lines and motifs provide an average level of originality to their compositions.

7. Conclusion

Through this teaching experiment, conducted in the experimental group, we have pursued the following objectives: to identify methods and techniques for stimulating creativity through drawing; to involve children in learning situations (drawing tests) in which creativity is stimulated; to activate, stimulate and develop the children's creative potential, to encourage initiative and creative imagination, to structure the intrinsic motivation, to develop children's personality; to identify and try out several types of drawing tests in terms of creativity; to evaluate creativity progress through specific drawing tests (fluency of ideas and images; creative combinatorial association; flexibility and originality in composition, expressed through personal cognitive style).

During the formative experiment, children were involved in four experimental tests to monitor each child's progress during training.

1) By analyzing the results obtained from the four tests, we note that all children realized original compositions, different from each other and from those of colleagues, yet keeping certain features in common.

2) By analyzing the test results obtained by children in the experimental group, in chronological order, we notice that *all children progressed*. These results are explained by providing more favourable conditions for the development of creativity: involving children in several learning situations in which they were able to draw in accordance with certain requirements (the independent variable) and to develop specific skills needed for design and creativity (to observe, to analyze, to represent, to compare, to infer, to combine etc.) (the subject variable); using certain methods and techniques considered effective in the development of creativity (the independent variable); ensuring optimum climate for creative arts; providing a positive feed-back; learning and practicing various drawing techniques; taking into account the dependent variables (age and individual peculiarities of preschool children; specific creative potential of preschool age and of each preschool child; multiple intelligences of each preschool child; knowledge and previous experiences of children depending on their background and previous education) (the subject variable).

The results of the experimental group revealed by drawings can be summarized as it follows: all children possess all the skills that a person needs to produce new and original products, so they developed a certain level of creativity; in the experimental group there are many children who performed well on one or more tests, so there is not only one child with maximum creative potential; each child has certain „patterns” or models that replicates in several drawings, but he also has highly original drawings; having that each child has more or less successful drawings, we cannot establish a steady progress at individual level; the experimental group performance can be correlated with the large number and quality of representations that they obtained during activities in kindergarten and not only.

In conclusion, at the end of our research we can confirm the hypothesis according to which, if preschoolers are given new information regarding opportunities for the diversification of a model, they will create more original designs. The research is original because it proposes new experimental tests and evaluation grids. The strengths of this research include: new possible experimental tests; new evaluation grids of the results; the research hypothesis and its confirmation by tests and grids. The weaknesses of the research are: the fact that not all the children participated in all tests, fact that limited our research to a smaller number of children; the fact that tests were not applied to a control group, as well; the fact that the number of subjects was small, because of the number of children in the group. Furthermore we intend to study how preschoolers’ creativity can be developed through the application of new tests. We will particularly aim to highlight the way in which creativity in work can develop in relation with the increasing number of requirements.

References

- [1] Boden, A., (1995), *The Creative Mind: Myths and Mechanism*, Basic Books, New York
- [2] Guilford, J.P., (1967), *The Nature of Human Intelligence*, Bearly Limited, New York
- [3] Jaoui, H., (1990), *La créativité. Mode d'emploi. Applications pratiques*, ESF, Paris, ed. A II.a, 1998
- [4] Roșca, Al., (1981), *Creativitate generală și specifică*, Editura Academiei, București,
- [5] Roco, Mihaela, (2004), *Creativitate și inteligență emoțională*, Editura Polirom, Iași

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Annexes



